

# FOURTH ICSE 2021

INTERNATIONAL CONFERENCE ON SPECIAL EDUCATION

## PROCEEDINGS



# ICSE 2021

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## THE 4<sup>th</sup> INTERNATIONAL CONFERENCE ON SPECIAL EDUCATION

### INCLUSION : A NEW CURVE

17<sup>th</sup> - 24<sup>th</sup> SEPTEMBER 2021  
PRE-CONFERENCE EVENT

25<sup>th</sup> - 26<sup>th</sup> SEPTEMBER 2021  
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## PREFACE

Around the world, children are excluded from schools where they belong because of disability, race, language, religion, gender, and poverty. According to the Individuals with Disabilities Education Act (IDEA), students with special educational needs have the right to receive necessary curricular adaptations. Every child has the ability to learn, but the way children learn and how much knowledge they can absorb can vary considerably, especially for a child with special educational needs. Yet, as a society we owe all children a chance to reach their potential, so it is important to create the best possible learning environment for that to happen. That's why many people suggest mainstreaming special-needs children into regular classrooms rather than assigning them exclusively to special education classes. When all children, regardless of their differences, are educated together, everyone benefits, this is the cornerstone of inclusive education.

Inclusive education has been discussed for more than twenty years. Both scholars and media brought up the inclusive education issue to bring awareness of it to society, and that momentum helps parents of SEN students to speak up for their offspring's rights. With the support from the law, legislation and society, drives or assists SEN students to equally access educational services, in the same way as students without disabilities.

Within this contention, the 4th ICSE Conference would provide the opportunity, space and a spectrum of perspectives for educators and those involved in education especially in the field of Special Education to share, discuss and further developing actions that would enhance the lives of children with disabilities. Current development and research based practices and models in teaching and learning as well as best practices will be disseminated in this conference.

### Themes

The themes for 4th ICSE 2021 is "**INCLUSION: A NEW CURVE**" and supported by 16 sub-themes

1. Technical and Vocational Education Training (TVET) for Students and Youths with Special Educational Needs
2. Learning and Innovation for Students with Special Educational Needs
3. Early Intervention
4. Inclusive Education
5. Health, Social Emotional Enhancement and Development for Special Needs
6. Transition from School to Employment
7. Multiple Disabilities Education
8. Networking in Special Education
9. Policy on Disabilities
10. Building and Sustaining Inclusive Society
11. Science, Technology, Engineering and Mathematics (STEM) for Special Educational Needs
12. Teacher Training and Capacity Building
13. Disability-inclusive Disaster Risk Reduction (DiDRR)
14. Cultural and Arts Appreciation for Children with Special Educational Needs
15. Artificial Intelligence for Children with Special Educational Needs
16. Empowering Families and Communities for Children with Special Educational Needs

## Conference Objectives

- Enhance the knowledge and skills of participants to deliver effective educational services and support services for children with special educational needs by updating and enriching knowledge and skills of those who take part in the educational process.
- Provide the platform and opportunities for exchange of best practices in teaching and learning of children with special educational needs.
- Provide information in recent trends in Special Education through exchange of best practices and current approaches that are tangible and responsive to the 21st century challenges and needs.
- Establish networking and smart collaboration among Ministries, related agencies and educators in education especially in Special Education at national, regional and international levels.
- Increase awareness and acceptance of individual with disabilities in the society and accommodating their needs in the community in terms of access, engagement and equity.

## Target Participants

The 4th ICSE 2021 is expected to be attended by 1,500 participants and delegates from Southeast Asia Countries and all around the world comprises of prominent speakers, teachers, educators, stakeholders, NGOs, parents, students, researchers, special education providers, policy makers, officials of MOE and interested individuals

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## MESSAGE FROM THE DIRECTOR OF SEAMEO SEN

Dear delegates of the 4th International Conference for Special Education (ICSE) 2021.  
Warm greetings from SEAMEO SEN.

It is my great pleasure to welcome you to the 4th ICSE 2021, which takes place virtually this time.

Following the synergy effort from the past ICSE conferences, the 4th ICSE 2021 proceeding will be the fourth proceeding published and set to act as evidence of research-based practices that will contribute to build knowledge and expertise of Special Education teachers in this region and beyond.

SEAMEO SEN is committed to its vision and mission as a leading centre of excellence in Special Education in this region. This conference is a definitive effort and hard work by SEAMEO SEN to present opportunities and platforms for convergence of discussion and current ideas in Special Education to all its attendees.

The papers published in this proceeding are written and documented based on the sub-themes of the conference which aimed to break open new trends and ideas, focusing on inclusive education, innovations, best practices in teaching and learning pedagogy within the Special Education sphere.

On behalf of the proceeding committee team of the 4th ICSE 2021, allow me to extend my appreciative note to the presenters who have contributed to the papers in this proceeding. It is within our high hopes that with this proceeding publication, it will be used as a reference and source of information for educators and communities as a whole. I am also extending my utmost appreciation to the experts of the reviewing team, the technical writers and the whole team from SEAMEO SEN for the publication of this proceeding.

May all of us continue to work harder and become more resilient in our endeavour to champion the cause for the learners with disabilities and communities in this region.

Together, we strive for excellence.



Dr. Hajah Hanani Harun Rasit  
Director  
SEAMEO Regional Centre For Special Educational Needs  
(SEAMEO SEN)



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# FACTOR ASSOCIATED WITH TEACHER EFFICACY TOWARD INCLUSIVE PRACTICE IN INDONESIA: THE ROLE OF PERCEIVED SCHOOL SUPPORT AND DEMOGRAPHIC VARIABLES

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## ABSTRACT

Numerous countries have implemented inclusive education to enhance students' special needs participation in education, including Indonesia. Each stakeholder involved has their responsibilities to create successful inclusive practice. However, many obstacles emerge in implementing inclusive education due to teachers' belief that they cannot teach special needs children, which is defined as teacher efficacy in inclusive practice. This study investigated the factor associated with teacher efficacy in inclusive practice, specifically in Indonesia's inclusive primary school. Through quantitative analysis, this research aims to find out the relationship between perceived school support and demographic factors, such as gender, age, type of school, teaching experience, level of education, and training experience towards teacher efficacy. The measurement used in this study were PSSIE (Perceived School Support for Inclusive Education) (Ahmmmed, 2013) and TEIP (Teacher Efficacy for Inclusive Practice) (Sharma et al., 2012). Using the convenience sampling technique, 324 inclusive primary school teachers from 15 provinces in Indonesia participated in this study. The result shows that perceived school support have a significant and positive relationship with teacher efficacy in inclusive practice ( $F(1, 322) = 129.978, p < .001, R^2 = .54$ ). In terms of demographic factors, teacher efficacy is associated with age, type of school, level of education, and training experience. It can be concluded that teachers will have efficacy in teaching inclusive classrooms if they receive adequate support from the school, both physically and emotionally. In addition, middle-aged teachers, who work in inclusive private schools, have a high educational qualification, and have received training tend to have more efficacy in inclusive teaching.

**Keywords:** Teacher Efficacy, Perceived School Support, Inclusive Education

## 1. Introduction

To successfully create equality of education, as stated in Sustainable Development Goals (SDGs), every country should encourage inclusive education. Inclusive education is a system where the school accepts and accommodates the needs of children with special needs to learn alongside regular students [1]. Along with the emergence of the Salamanca Statement in 1994, the urgency to implement inclusive education has been spread to most countries globally. The system is trying to shift from segregation education, where all children with special needs are placed in one special school, to inclusive education. In Indonesia, the regulation about inclusive education implementation is written in Ministry of National Education Regulation No. 70 the year 2009 [2]. All schools in most provinces are mandated

to accept children with special needs, including but not limited to children with physical, emotional, mental, intellectual, and social disabilities [3].

Through inclusive education, children with special needs will receive the benefit and the regular students. Previous research has shown that inclusive education brings numerous positive impacts. Firstly, students with special needs are proven to have more academic achievements and social skills in an inclusive setting [4] [5]. They are more likely to improve in language development, appropriate behavior, and social interaction with peers. Secondly, an inclusive setting could also encourage parents with special needs children to have more positive aspirations toward their children [6]. Parents would see their children mingling with other regular students. Thus they would believe their children can slowly adjust to the real world. Thirdly, both children with special needs and regular students will have a more positive self-concept [7]. With all mentioned studies, it can be seen that an inclusive education system is pivotal to be implemented.

The successful implementation of an inclusive system can not be separated from the involvement of stakeholders. Principals, teachers, parents, counselors/psychologists, and the community are responsible for creating a safe environment and embracing the inclusive system in schools [8]. However, to accommodate students' needs in class, the teacher holds an essential role in ensuring students can achieve their targeted goals. Teachers who work in inclusive teaching face various challenges, including modifying the learning program, managing classroom behavior, and communicating children's needs and progress to parents [9]. Based on the educational level, teachers in inclusive primary schools have more concern than any other class. They must teach basic literacy and numeracy skills to children with different abilities and manage inappropriate classroom behavior [10].

Teachers in inclusive schools are responsible for teaching and providing different teaching strategies to support student's academic and social development. Subsequently, they are expected to believe in themselves to provide the best methods to make positive outcomes called teacher efficacy. Teacher efficacy is a belief about teacher's capabilities to conduct several actions that can result in desired outcomes of students' engagement and learning, apart from the conditions of the child (i.e., difficult or unmotivated) [11]. The teacher who has high efficacy might affect their teaching behavior, goals, and positive aspiration. According to [12], the context of teacher efficacy is highly dependable on the specific task that they possess. In inclusive education, teacher efficacy is needed to make them believe in teaching children with special needs and providing suitable learning accommodation. Teachers with high teacher efficacy in the inclusive classroom also tend to have a positive attitude toward inclusive education, improve work satisfaction, and lower bias in children with special needs in class [13].

Teacher efficacy is influenced by several factors, including external factors and internal factors. One of the external factors is the support that they get from their surroundings. Teachers who received support from the school tend to positively perceive their job [14] and willing to accept children with special needs in their inclusive classroom [15]. Hence, their efficacy will be improved as well. Previous qualitative research has shown that teacher efficacy is related to perceived school support [16][17][18]. It was demonstrated by the teacher's statement that said the more support they receive, the more they believe in their competency to teach an inclusive classroom. However, there is no further research that shows the effect of perceived school support on teacher efficacy. Perceived school support is defined as a teacher's perception of comprehensive support received from principals, other teachers, parents, and communities [19]. The support in training still lacks in Indonesian inclusive schools, and implementing inclusive teaching practice not optimum [10]. Hence, it is vital to find out the effect of perceived school support on teacher efficacy.

Besides external factors, previous research also shows the impact of internal factors on teachers' efficacy, including demographic variables. Research on gender factors affecting teacher efficacy is still inconsistent. Pas et al. [20] found no gender differences in the level of teacher efficacy for teachers in inclusive schools. Likewise, Moalosi and Forcheh [21] stated that female teachers did show better performance than male teachers in engaging students in activities. However, there were no differences found in teaching strategies and classroom management not to affect teacher efficacy.

Meanwhile, research in Asian countries found that teacher efficacy in women is higher than in men, one of which is the stereotype that women are more suitable to work in education [22]. There is limited research on the relationship between teacher's age and teacher efficacy in inclusive practice. However, in the general context, it was proven that age also positively correlates with teacher efficacy [23]. The older the teacher, the more teacher efficacy they have. Teachers with a higher education level tend to have high teacher efficacy because they have more knowledge and training related to implementing inclusive teaching [24]. However, several studies have shown the opposite, namely that the level of education, including high school, undergraduate, and postgraduate graduates, is not related to teacher efficacy [20].

Other demographic variables that are assumed to affect teacher efficacy are teaching experience, training experience, and the type of school where they work. According to previous research, teacher efficacy will increase with increasing experience [12][25][24]. Teaching experience in inclusive teachers will affect teacher efficacy because the longer the teacher teaches, the more knowledge determining excellent or poor teaching for children with special needs and regular students [26]. Through this, teachers will have higher efficacy in education. Teachers who have more ample teaching experience will consider inclusive classrooms as a solution to increasing regular students' tolerance of children with special needs and the social and cognitive development of children with special needs [27]. Sharma et al. [28] conducted research related to teacher efficacy and found that teacher training related to inclusive education can improve teacher efficacy. Likewise, Forlin and Sin [29] found that teacher training held by schools influences self-efficacy in teachers. Teachers will feel more confident in teaching children with special needs in an inclusive class when they have attended related training. When teachers are confident, teacher efficacy in conducting and managing the class will also increase [30]. Concerning the type of schools, limited research explains teacher efficacy in inclusive public and private school differences. Purbani [31], in her qualitative study, finds that teachers in public schools have not shown effective inclusive practice. They tend to be influenced by other stakeholders' perspectives who do not react positively to the system and the children with special needs. In contrast, teachers in private inclusive schools have more empathy, tolerance, and willingness to give all children accommodation regardless of background [31].

The current study is aimed to find out the factors associated with teacher efficacy. According to the literature review mentioned earlier, two main factors affect teacher efficacy: external factor (perceived school support) and internal factor (demographic variables including age, gender, education level, teaching experience, training experience, and type of school). The hypothesis in this study is perceived school support and demographic variables influence teacher efficacy. This study will collect data from an inclusive primary school teacher in Indonesia regardless of the provinces where they employed or reside.

## 2. Methods

### 2.1. Participant

Participants in this study were inclusive primary schools in Indonesia. The subjects are selected using convenience sampling and distributed through online form and post due to the pandemic Covid-19. There are three main requirements for a participant to be included in this study, namely (1) is a teacher who teaches in inclusive public primary school or inclusive private primary; (2) teach children with special needs and regular students in the same class; (3) is a classroom teacher or specialist. There are 388 questionnaires collected, but only 324 can be further processed after the screening process. Teachers who participated in this study are from 15 provinces in Indonesia, mainly from Java and Bali. Table 1 shows the demographic data of the participants.

Table 1 Participant Demographics Data

Demographic Variables		N	Frequency (%)
Gender	Male	100	30,9%
	Female	224	69,1%
Age	≤30 years	157	48,5%
	31-40 years	94	29%
	41-50 years	44	13,6%
	≥51 years	29	9%
Education Level	High School	17	5,2%
	Diploma	7	2,2%
	Bachelor Degree	270	83,3%
	Master Degree	30	9,3%
Teaching Experience in Inclusive Setting	≤5 years	251	77,5%
	6-10 years	37	11,4%
	11-15 years	22	6,8%
	≥16 years	14	4,3%
Inclusive Training Experience	Yes	148	45,7%
	No	176	54,3%

## 3. Measure

### 3.1. Teacher Efficacy – TEIP

The measurement of teacher efficacy in this study uses Teacher Efficacy in Inclusive Practice (TEIP) by Sharma et al. [28]. TEIP consists of three components: efficacy in inclusive instruction, efficacy in collaboration, and efficacy in managing behavior. To use this measurement, TEIP has to be translated and adapted into the Indonesian context first. Previous research has adapted TEIP into the Indonesian language and context [32]. Hence this study used the adapted version. TEIP has 18 items and measured by the Likert scale (4 points), with one (1) is "strongly disagree" to 4 with "strongly agree". An example of the items is "I am confident with my capability to encourage students in doing activities/tasks that I give". This measurement has a good item validity with a coefficient of 0.06-0.61 and a good reliability score with an alpha coefficient of 0.77.

### 3.2. Perceived School Support – PSSIE

Perceived School Support in Inclusive Education (PSSIE) by Ahmmmed [19] was used in this study as a measurement for perceived school support. This scale consists of 8 items representing different types of support, including support from the principal, coworkers, parents of regular children, parents of children with special needs, school committee, training support, and availability of resources. PSSIE also has been translated and adapted into the Indonesian language in this study. The responses are divided into 5 points Likert scale from 1 "not at all" to 5 "very adequate". The example from this measurement is "I get the needed support from principal to implement inclusive education in the classroom level". The adapted version of PSSIE has an excellent reliability score with an alpha coefficient of 0.88 and item validity in the range of 0.51 to 0.89.

### 3.3. Demographic Variable

This study collects information regarding teachers' demographic variables through a personal detail section. However, the name is not compulsory to maintain participant's anonymity. Participants have to fill out their gender, age, education level, and teaching experience in inclusive classrooms (in years). In addition, participants also need to tick one of the options of training experience (yes/no) and type of school (public school/private school).

## 4. Results

Table 2. described the result of ANOVA analysis regarding demographic variables and perceived school support toward teacher efficacy. It can be seen that there is a significant difference in teacher efficacy based on participants' age, education level, type of school, training experience, and perceived school support. Meanwhile, gender and teaching experience in inclusive schools do not affect teacher efficacy as there is no significant difference.

Table 2. ANOVA Analysis of Factor Associated with Teacher Efficacy

Variable	Variable Sig.		
	F	p	Mean Square
Gender	0.024	0.878	61.215
Age	3.474	<b>0.016*</b>	59.659
Education Level	2.706	<b>0.045*</b>	60.078
Type of School	6.793	<b>0.010*</b>	59.955
Teaching Experience	0.845	0.470	61.118
Training Experience	14.455	<b>0.000*</b>	58.589
Perceived School Support	129.978	<b>0.000*</b>	43.614

There are mean differences of each category in the demographic variables. Teachers in the age of 41-50 have the highest teacher efficacy while age 31-40 have the lowest. In terms of the educational level, teachers who hold master degree qualification have the highest teacher efficacy while diploma graduates have the lowest. These diploma graduates in Indonesia are D1, D2, or D3 based on the year duration they complete the diploma.

Additionally, teachers who work in private inclusive primary schools have higher teacher efficacy than public inclusive primary schools. If teachers receive training related to inclusive education, they have more teacher efficacy in inclusive practice compared to those who do not receive any training.

*Table 3. Mean Difference*

<b>Variable</b>		<b>Mean</b>
Gender	Male	57.61
	Female	57.75
Age	<31	58.08
	31-40	56.06
	41-50	60.43
	>50	56.90
Education Level	High School Graduates	60.18
	Diploma	56.00
	Bachelor	57.24
	Master Degree	60.90
Type of School	Public Inclusive School	56.43
	Private Inclusive School	58.69
Teaching Experience in Inclusive School	< 6 years	57.37
	6-10 years	58.32
	11-15 years	59.05
	>15 years	60.00
Training Experience	Yes	59.47
	No	56.23

*Table 4. Regression Analysis of Perceived School Support toward Teacher Efficacy*

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b> Beta	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>			
Constant	40.597	1.545	0.536	26.274	0.000
Perceived School Support	0.604	0.053		11.401	0.000

The regression analysis result shows a positive and significant effect of perceived school support on teacher efficacy with  $F(1, 322) = 129.978$ ,  $p < 0.01$ . This result illustrates that teacher efficacy can be predicted by how much support the teacher perceived they get from the schools. The higher level of support that the teacher contracts, the higher level of their efficacy would be. In contrast, the less support teacher receive from schools. They are most likely not having the efficacy to teach in the inclusive classroom. Through this analysis, the regression equation can explain how much-perceived support can influence the change of teacher efficacy. The equation was  $Y = 40.597 + 0.536X$ , which means the rise of one score perceived school support can improve 41.133 teacher efficacy.

## 5. Discussion

This study aimed to determine factors associated with teacher efficacy in inclusive practice, including demographic variables and perceived school support. The hypothesis regarding teacher efficacy factors is tested through statistical analysis ANOVA and regression method. Results indicated that perceived school support affects teacher efficacy in inclusive practice. In addition, demographic factors that significantly influence teacher efficacy are age, education level, type of school, and inclusive training experience.

Based on the first finding, perceived school support in implementing inclusive education is shown to have a significant relationship with teacher efficacy. These results are consistent with research conducted by Malak et al. [33], which states that teachers' self-confidence in teaching inclusive classes is influenced by their views on the support provided by the school. The findings per each dimension also show that there is a significant and positive relationship between school support and (1) efficacy in providing inclusive instruction, (2) efficacy in collaboration, and (3) efficacy in regulating behavior.

The number of participants who had high teacher efficacy (57.4%) was not much different from participants in the moderate category (42.3%). This result shows that inclusive primary school teachers in Indonesia believe they can teach inclusive students. On the other hand, teachers in the medium category have sufficient confidence to teach but are not yet fully competent in providing inclusive instruction, managing behavior, or collaborating. Teacher efficacy, one of which is influenced by the training experience that has been obtained [28]. This finding is consistent with participant training data, which is that less than half of the participants (45%) have received training. Therefore, the training they get can explain high teacher efficacy, while teachers who have not received training will have teacher efficacy in the medium category.

Finding on the gender shows that teacher efficacy does not influence the teacher's gender. It can be explained by the difference in people's willingness to help, and confidence in teaching does not depend on whether they are female or male. Each person has an unprecedented amount of efficacy regarding the inclusive system, despite their stereotypical gender role. This finding is consistent with the previous research [20][21], which stated that female teachers show a slightly higher teacher efficacy, but there is no significant difference between females and males. In contrast, this study found that age can significantly affect teacher efficacy in inclusive practice. The older the teacher, the more efficacy they have in implementing inclusive education inside the classroom. However, this would only apply until the teacher reached age 50 because it can be seen that there is a declining level of teacher efficacy after age 51. These results are similar to prior research from [23][34] that states teacher efficacy increases along with age. Therefore, teachers with older generations tend to be more confident in teaching inclusive classrooms. This statement might be because when people get older, they have more encounters with different types of students and grow wiser personally and professionally.

Teacher efficacy of people who work in inclusive private primary schools is significantly different with inclusive public primary school, with a higher level of teacher in private school. This result is aligned with previous findings from Purbani [31], which stated that private schools accept inclusive systems based on their willingness to help children with special needs. It also leads to how all stakeholders, including principals, teachers, parents, and school staff, respond to an inclusive system. Private schools are usually able to adjust their curriculum and method to adjust students' needs. However, in the public system, inclusive education is a new and compulsory concept. That is why teachers in inclusive public schools are often not ready and perceive themselves as not competent enough to teach inclusive classrooms, leading to a lower level of teacher efficacy.

In terms of education level, most teachers in this study were young, under 30 years of age, and had the latest bachelor education. These findings indicate that inclusive schools have followed national regulations from the government regarding the minimum requirements for teacher academic qualifications, namely a minimum of diploma and bachelor [35]. There are 5% of teachers with high school qualifications. Based on a short interview with one of the school principals, teachers who graduated from high school graduates are still employed because dealing with children with special needs requires patience and openness to new experiences. Schools prefer to hire high school graduates and then be given a variety of

inclusive teaching training, compared to accepting bachelor graduates with majors that are not suitable for education. This result supports Yada et al. [36], which states that training will have more effect on teacher efficacy than the level of education.

## 6. Conclusion and Limitation

Based on the research results and discussion, it can be concluded that there are factors that influence teacher efficacy, namely perceived school support, age, type of school, education level, and training experience. Meanwhile, gender and teaching experience do not affect teacher efficacy. There are several limitations in this study, namely the self-report method in data collection, which can then be added to direct observation so that the data can be more comprehensive. In addition, the sample selection method for future research can use random sampling so that more participants from various provinces in Indonesia are involved. This is useful for enriching the research data and obtaining an overview of variables from different regions in Indonesia, both urban and rural.

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## LIVED EXPERIENCES OF SENIOR HIGH SCHOOL TEACHERS IN HANDLING MAINSTREAM CLASSES: TEACHER DEVELOPMENT PLAN

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### ABSTRACT

This research determined the lived experiences of Senior High School Teachers handling Mainstream Classes at Babag National High School- Senior High School during the school year 2019-2020 as bases for a proposed teacher development plan. Babag National High School Senior High School Department implemented mainstream classes since the start of the K12 curriculum where teachers have less to no background in handling learners with special educational needs. The implementation of the class is in response to the Department's "Education for All" and observation of inclusions. The respondents were eight (8) Senior High School teachers handling mainstream classes. The study investigated the experiences of the teachers in their classes in terms of lesson planning, delivery of instruction, assessment of learning, and monitoring and coaching. Also, further investigated on challenges, difficulties and best practices of these teachers in handling their mainstream classes. The research employed quantitative-qualitative design where data were treated using Mean Deviation and Thematic Content Analysis. The findings show that teachers provided less independent and guided practice, they modify lessons, but they have difficulties in associating these tasks to their condition, they should explain content of test material first before students perform task, and they have no time for parent's conference for students' progress. Their challenges deal on teaching pedagogies and lack of time. Most respondents' best practices consist of task listing and personalized approach. Thus, teachers have varied lived experiences in handling mainstream class which are challenging for them. It is recommended to implement the proposed teacher development plan addressing areas of concerns in handling mainstream class.

**Keywords:** Lived Experiences, Mainstream Class, Senior High School

### 1. Introduction

The new trend of 21<sup>st</sup>-century education does not focus only on technology-integrated classes. It also focuses on giving access to quality education for all. This includes learners of all types.

The Department of Education Philippines issued a Memorandum No. 32, s. 2017 entitled "Gender-Responsive Basic Education Policy" stated the commitment in integrating the concept and rules on gender equality, gender sensitivity, non-discrimination, and human rights leading the way for inclusive education.

Inclusive Education as defined by the Committee on the Rights of Persons with Disabilities (UN 2016) means the fundamental right to education, a process in removing educational barriers, and promoting school reform on culture, policy, and practice to all students (as cited by Schuelka, 2018).

The need for a strong culture of inclusion is a challenge for most learning institutions. There are certain considerations to develop such a vision. Some suggested on whole school community involvement (McMaster, 2013), communicated committed across the school and into the community (Kugelmass, 2006), and changing the lens in terms of policies and practices in describing inclusive education (Maria-Luise Braunsteiner & Susan Mariano-Lapidus, 2014).

## **1.1 Call for Inclusivity in Senior High School**

Throughout the country, numerous special education centers cater to the basic education of learners with special needs. However, they focus mostly on the elementary and junior high school training. However, when the education platform of junior high school added with two more years leading for Senior High School training, the learners with special education needs were lightly considered based on the different academic and technological-vocational, and livelihood (TVL) tracks offered and based also on the teacher qualifications needed for Senior High School Faculty mainly focusing on content and enhancing skills of the learners ready for employment, higher education, entrepreneurship, and skills development.

On the first-year implementation of Senior High School, the school accepted four learners with special educational needs taking skill-related courses. By following the departments' mandate, Education for All, the teachers handle these learners even with limited backgrounds.

The previous scenario involves support from the Special Education Junior High school teachers. They are requested to assist Senior High School teachers in making instructional materials, addressing lesson content, and assessing learner's performance easily without hampering other learners.

Moreover, the school year 2018-2019, becomes a challenging task for senior high school teachers. Great numbers of varied learners with special educational needs are enrolled in different senior high school tracks. These are General Academic Strand (GAS), Humanities and Social Sciences (HUMSS), and Technological-Vocational and Livelihood (TVL) majoring in Cookery and Contact Center Servicing where less assistance from the Special Education teachers in the Junior High school because of migration of some teachers abroad. As a result, Senior High school teachers are on full track of these learners under a set-up of inclusion.

## **1.2 Objectives of the Study**

This study was conducted to determine the lived experiences of Senior High School Teachers handling Mainstream Classes for the school year 2019-2020. It sought to: 1.) identify the profile of the learners with special education needs and teachers handling mainstream class 2.) determine experiences of these teachers in handling mainstream classes in terms of lesson planning, delivery of instruction, assessment of learning, and monitoring and coaching 3.) describe challenges and difficulties encountered while handling these learners 4.) present best practices in handling mainstream class 5.) proposed teacher development plan.

## 2. Methods

The study used a mixed-method – qualitative and quantitative research design. The study conducted in Babag National High School, Senior High School Department, Babag 1, Lapu-Lapu City, Cebu Philippines. The study used a Purposive Sampling considering eight identified teachers handling mainstream classes. The instrument used a profile document for the profiles, a researcher-made survey questionnaire for teachers' experiences in identified indicators, an open-ended and structured interview questionnaire for challenges and difficulties, and classroom observation for best practices in handling mainstream classes. The study used Frequency distribution, percentage, standard deviation, and thematic content analysis as statistical tools.

### 2.1 Results and Discussion

#### 2.1.1 Learners Demographic Profile

The profile of learners with special educational needs was presented in two set of classes observing mainstream class – General Academic Strand (GAS) and Technological-Vocational and Livelihood (TVL) major in Contact Center Servicing

*Table 1: Learners Profile*

Classes/ Track	Age	Gender	Type of Learners with Special Educational Needs
General Academic Strand (GAS)	18	Female	Visually Impaired
	22	Male	Dwarfism
Contact Center Servicing	18	Male	Immobility

This implied that learners are mostly physically challenged learners that need much attention on their movements where teachers should consider their safety and pacing in producing learning outcomes. To illustrate, one of the teacher respondents observed that during examination her visually impaired student asked for approval in using a cellular phone to record her answers. Thus, teachers must consider familiar learning strategies of the learners so that they will feel comfortable while learning in class.

#### 2.1.2 Teachers Demographic Profile

The demographic profile of the public senior high school teachers handling mainstream classes includes gender, teaching position, years of experience, and subject handled.

##### 2.1.2.1 Gender

*Table 2: Respondents' Gender*

Gender	Frequency	Percent (%)
Male	3	37.50 %
Female	5	62.50 %

This result revealed that there were more female than male teachers handling mainstream classes. Further, this implies that there are more females hired by the Department of Education than males.

#### 2.1.2.2 Teaching Position

*Table 3: Respondents' Position*

Teaching Position	Frequency	Percent (%)
Master Teacher 1	3	37.50 %
Teacher III	5	62.50 %

The table showed that most teachers have teacher III positions. The teacher III position is the 3rd status given to qualified teachers in the Department of Education having at least Very Satisfactory Performance for the last three rating periods on her application of promotion plus 18 professional units in Education.

#### 2.1.2.3 Years of Experience

*Table 4: Respondents' Teaching Experience*

Years of Experience	Frequency	Percent (%)
10 years and above	3	37.50%
8 to 9 years	2	25%
6 to 7 years	1	12.50%
4 to 5 years	1	12.50%
2 to 3 years	1	12.50%
1 year and below	0	0

This revealed that most teachers with high years of teaching experienced were assigned to teach mainstream classes. This also implied that higher teaching experience provides confidence and trust to handle a diverse set of learners.

#### 2.1.2.4 Subject Handled

*Table 5: Respondents' Handled Subjects*

Subjects Handled	Frequency	Percent (%)
Core subjects	5	62.50%
Applied subjects	1	12.50%
Major subjects	2	25%

The study revealed that teachers are teaching core subjects in the Senior High School department. These core subjects covered mostly general subjects in English, Math, Science, and Social Studies. This implied that there is a need for different teachers in different academic disciplines.

#### 2.1.3 Teachers Experiences in handling mainstream class

The teachers' experience in handling mainstream classes covers experience in lesson planning, delivery of instruction, assessment of learning, and monitoring and coaching.

### **2.1.3.1 Lesson Planning**

*Table 6: Respondents' Experiences in handling mainstream class in terms of lesson planning*

Statements	Mean	SD	Interpretation
1. Before making my lesson plan, I check the background of my mainstream class from their abilities and learning capacities.	4.25	0.71	Very Highly Relatable
2. My learning objectives are specific, measurable, attainable, realistic and time-bounded for both types of students.	4.38	0.52	Very Highly Relatable
3. I list down learning materials that are safe and motivating for both types of students.	4.63	0.52	Very Highly Relatable
4. I write learning activities in my plan that caters diverse learners in mainstream class.	4.25	0.71	Very Highly Relatable
5. I provide in my plan both guided practice and independent practice for my learners with educational needs.	4.13	0.83	Highly Relatable
Overall	4.33	0.65	Very Highly Relatable

Table 6 showed that most teachers make sure that learning materials are safe and motivating for both learners. This implied that they are aware of the diverse learners. Then, they make sure they can address each students' concern. During the interview, one of the teachers explained that his visually impaired students used a laptop provided by the school. So, on his lesson plan, different learning material is prepared for that learner. He also separates materials for the rest of the class. He checked the materials before using them and gave them to the learner. This showed that teachers made an extra effort.

On the other hand, teachers who are having problems writing guided practice in their lesson plans. They have less to no training in handling mainstream class. One of the teachers raised a concern about how the school can help them with lesson planning in mainstream classes since they are used to regular classes. This implied that the school should train the teachers in handling mainstream class, specifically in writing their lesson plans. Possible concepts should cover management, approaches, and plan workflow for mainstream classes.

### **2.1.3.2 Delivery of Instruction**

*Table 7: Respondents' Experiences in handling mainstream class in terms of delivery of instruction*

Statements	Mean	SD	Interpretation
1. The pacing of my lesson is in accordance with my students' level, abilities and capacities.	4.25	0.71	Very Highly Relatable
2. I modify my instructions so that students with special needs can understand what I wanted them to do.	4.63	0.52	Very Highly Relatable
3. I am not having problems in the discussion of concepts even if I have students with special needs.	4.13	0.83	Highly Relatable
4. I provide equal opportunities for discussion and interaction for both type of students during group activities.	4.38	0.74	Very Highly Relatable
5. I undertake learning tasks associated with the child's condition without hindering other students.	4.00	0.76	Highly Relatable
Overall	4.28	0.71	Very Highly Relatable

Table 7 presented that teachers made modifications when they are in their classes. During the class observation, most teachers address the instructions in general and later approach the learner with special educational needs to have individualized instruction. In the focus group discussion, most teachers admitted that it delays the pacing of their classes, but they do not mind. One teacher admitted that she repeated the lesson to the learner with special educational needs while others are doing the learning tasks. She further explained that she does not care provided that no child is behind in learning the required competencies. This displayed that most teachers with fewer backgrounds in teaching mainstream classes showed efforts and compassion to all their learners with equal respect and understanding.

On the other hand, the problem of the teachers is associating the task to the learners' condition without losing track of others. It is a challenge for them to fit their lessons and activities to their level while teaching other learners. They give extra tasks to enrich lessons for other learners while they are doing individualized teaching to the learners with special educational needs. This implied that teachers need the technique addressing lesson discussion and activities vis-à-vis to learners' abilities in a mainstream class.

### **2.1.3.3 Assessment of Learning**

*Table 8: Respondents' Experiences in handling mainstream class in terms of assessment of learning*

Statements	Mean	SD	Interpretation
1. I check the kind of assessment that I give for both learners before I administer it.	4.25	0.71	Very Highly Relatable
2. I use a variety of assessment procedures, methods, and tools in checking learner's understanding of the lesson.	4.25	0.71	Very Highly Relatable
3. I make sure that the level of difficulty of the tasks given to the learners with special needs is appropriate and attainable for them without hindering other learners.	4.25	0.71	Very Highly Relatable
4. I explain the content of the assessment tool to my students through oral/dictation and written in order to address clear instructions to the type of learners I have.	4.63	0.52	Very Highly Relatable
5. After the assessment, I used the result for planning, enhancing or strengthening my lesson.	4.25	0.71	Very Highly Relatable
Overall	4.33	0.67	Very Highly Relatable

Table 8 revealed that teachers provided oral and written instructions for the assessment of the learners. This implied that teachers utilized visual and auditory techniques in evaluating learning. Based on the class observations, teachers used a buddy-buddy system. Top-performing learners paired with learners with educational needs to guide them in performing their class assessment. One of the teachers explained that during her class examinations, her visually impaired is given a recorded version of the examination test, and her buddy will write her answers. If the buddy is not available, the teacher allowed a learner to use a cellular phone in recording her answers. Another teacher also shared her experience while having physical activities like dramatization and games in her mainstream class. She explained that the buddy-buddy system is observed in-class activities and reminds group leaders to involve these learners with respect and understanding. This implied that teachers and learners have a systematic approach to help learners with educational needs.

### 2.1.3.4 Monitoring and Coaching

*Table 9: Respondents' Experiences in handling mainstream class in terms of monitoring and coaching*

Statements	Mean	SD	Interpretation
1. I monitor the attendance and check the physical atmosphere of my mainstream classroom if it is safe, clean, and motivating for learning.	5.00	0	Very Highly Relatable
2. I conducted remediation/enrichment program for low performing students including learners with special educational needs.	4.63	0.52	Very Highly Relatable
3. I use peer mentoring or coaching in my mainstream class for academic achievement.	4.50	1.07	Very Highly Relatable
4. I visit or talk to the parents of the learners with special educational needs for academic monitoring/follow up.	3.88	0.99	Highly Relatable
5. I ask other teachers handling the same mainstream class of mine on the ways they did to improve students' academic performance	4.25	0.71	Very Highly Relatable
Overall	4.45	0.66	Very Highly Relatable

Table 9 showed that the teachers have good management of learning. They are good in attendance monitoring and checking the learning environment of the class. During the class observation, most teachers assigned routine activities to some learners before class starts. This implied that teachers in mainstream classes are good managers of learning.

On the other hand, teachers have less time to do follow-ups and conferencing to parents of the learners with special educational needs. One teacher admitted that they have a lack of time to call for home visitations for these learners. Other teachers also explained that monitoring the buddy-buddy system helps them to monitor the progress of these learners. This, implied that the teachers need more time to do conferencing with learners and their parents. Thus, the school administrators should consider adjusting teaching loads in their teaching schedule by having fewer class loads to give enough time for monitoring and coaching for their mainstream classes.

### 2.1.4 Challenges and Difficulties

Approaches, techniques, and methods are weapons of the teachers to make class plans attainable. However, respondents handling mainstream class consider this as a challenge. When teachers asked about tailoring their teaching pedagogies, they said:

*There is difficulty to deliver instructions in some activities because of diverse learners which we have less background. It takes a lot of time to have various activities. Moreover, identifying appropriate techniques is indeed a challenge. (K1, K2, K5, K6, K7, K8)*

Hence, there is a need for inputs in tailoring lessons matching the conditions of their learners is an immediate concern not to hamper lesson objectives and time. Mainly, teachers do not have adequate experience and professional background in this area.

Another identified challenge in handling mainstream classes is the lack of time in assessment and monitoring and feedback. Teachers mostly prepare two assessment tools to address diverse learners in class.

*It takes time for us to assess the learners with special educational needs in the same manner as the other students in the class. Most of the time, we have a separate test for these learners considering their condition. In terms of their monitoring, we have a lot of things to consider aside from these classes. We hardly do feedback to inform their progress. (K2, K5, K8)*

### **2.1.5 Best Practices**

Based on the identified area of concern from lesson planning to monitor, the researcher identified three best practices – task listing, peer coaching and personalized teaching.

In task listing, teachers list down tasks for students to track their progress. In this manner, students become independent and goal-oriented since the teachers gave activities based on their abilities. During the interview, the teachers answered:

*I made a list of activities in my lesson that the learners with special educational needs could perform. There is a need to plan out in group activities (K1, K4, K6, K7, K8)*

Some teachers conduct a personalized approach to teaching. Still, they believe in the idea on one-on-one. Some do modification of task while others do hands-on. Teachers explained:

*We do modify activities that suit them because they have things to reconsider. Teachers give differentiated instructions to address each learners' concerns. If there is a need, we guide them personally (K3, K5, K6, K7, K8)*

Simply, it means that teachers still consider that personalizing lessons will help learners more though it takes time and effort. Further, teachers find ways to meet the target objectives.

### **2.1.6 Proposed Teacher Development Plan**

The proposed teacher development plan addressed the areas to consider in handling mainstream classes. The school conducted the training during the summer in-service training of the teachers. The training covers understanding the nature of the mainstream class, setting up a learning environment for mainstream class, techniques in handling learners with special educational needs, and writing activities in designing an instructional plan.

## **3. Conclusion**

Therefore, teachers lived experiences in handling mainstream classes are very challenging since teachers have little to no background in handling both types of learners inside a mainstream class. They understand that the experiences took a lot of time preparing lessons, delivery of instruction, assessment, monitoring, and feedback. Further, Senior High School Teachers are less equipped to have a senior high school mainstream class. The Department of Education should reconsider their hiring qualifications for Senior High School teachers considering this matter.

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# THE SUBURBIA STRATEGY: POSITIVE REINFORCEMENT TO IMPROVE THE LEARNING FOCUS OF SPECIAL NEEDS STUDENTS (MBK)

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## ABSTRACT

This Positive Reinforcement was implemented in a suburban school in Hulu Selangor to help improve the learning focus of Special Needs Students (MBK). The use of *traffic light* cards and token economy are aimed to elevate their speaking skills and self-confidence during the lessons in the classes. Prior to the programme, pupils lacked self-confidence and were not open to confide their problems in the lessons with the teachers. Moreover, pupils inclined to ask questions irrelevant to the topics concerned. This implied that pupils were unable to have full grasp on the lessons and thus to create possible problems for them to incorporate the knowledge taught in the classes into their lives. Through quantitative findings based on the pupils' classwork and qualitative measurement based on *non-partisan* observation, it is found that Positive Reinforcement was considered successful as intervention strategy. Pupils are also seemed to be less-dependent on their peers and plagiarism amongst them was positively reduced. In order to enrich the knowledge of best practices in school, it is suggested that the whole unit of schools comprise of MBK and mainstream pupils to incorporate acculturation of *traffic light* cards so that conducive environment is to be conceived for teaching and facilitation sessions.

**Keywords:** Positive Reinforcement, Teaching and Facilitation (PdPc), Traffic Light, Token Economy, Special Needs Students

## 1. Introduction

SK Serendah is a suburban school located in the district of Hulu Selangor. It comprises of mainstream pupils, the pre-schoolers and also pupils with learning disabilities or affectionately known as the Special Needs Students (MBK). With complex mixture of pupil population in the school, the Special Needs Students seemed to be intimidated by self-inferiority during social interactions with outsiders. This is supported by the stigma that MBK are difficult participants and mainstream pupils could not relate to them out of fear and apprehension (Shevlin and O'Moore, 2000). From this vein, it is evident that these MBK must be instilled with sturdier sense of self-confidence as study stated that they have psychological vulnerabilities in comparison to their mainstream counterparts and thus, confidence proved to be vital valve in rebuilding their emotional intelligence (Clareta et al., 2020) and ultimately to improve their social skills with the outsiders.

Positive Reinforcement has proven to be an effective approach to modify pupils' behaviours (Adamson et al., 2015; Watling and Schwartz, 2004; Cooper and Nye, 1994). In the context of Malaysia, there are several studies conducted to validate the efficiency of this approach. For example, Aziz and Yasin (2018) found that token economy as a form of Positive Reinforcement was able to improve concentration among MBK whereas Bakar and Zainal (2020) agreed that disruptive behaviour of ADHD pupil could be alleviated by using Positive Reinforcement. On top of that, Ali et al. (2014) were of opinion that all pupils especially the ones with disruptive behaviours generally respond well when Positive Reinforcement was applied during lessons in the classes.

Therefore, it is evident that Positive Reinforcement is a suitable approach to boost the confidence of the MBK in SK Serendah, Hulu Selangor.

## 2. Reflection on Past Lessons

This research is conducted by two researchers namely an MBK Teacher (Researcher 1) and also a mainstream Teacher (Researcher 2) in order to enrich the analysis of the research via both emic and etic point of views.

After conducting lessons in classes, Researcher 1 would often resort into doing exercises or quizzes. Subsequently, Researcher 1 would also be asking the pupils:

*"Do you get what I have taught you just now?"*  
*"Yes, sir."*

However, Researcher 1 found that the outcomes of the lessons did not complement the oral affirmation given by the MBK. The pupils claimed they understood what were taught by their teachers but the outcomes did not reflect an in-depth understanding of the lessons. Thus, pupils were inclined to copy their peers' work during the exercises or quizzes.

In this vein, researchers felt that there is a need for an intervention for these pupils in form of positive reinforcement so that they would not be left out from the lessons in the class. It would be a worrisome scenario if no intervention were implemented as it would engender more problems throughout the lessons.

## 3. Focus of The Research

The focus of the Positive Reinforcement is on the speaking skills. This is essential as speaking skills are values for pupils to build their self-confidence and this is often mirrored during the interaction of question-and-answer sessions with the teacher during lessons. If the pupils were not reactive in the class, it would be hard for the teacher to identify the pupils' incompetency. Besides that, the normalization of "copying culture" amongst the pupils would be rampant if they were still unwilling to be reactive towards their teachers. This could be seen during exercises and quizzes sessions. Researcher 1 found that pupils were more inclined to copy their peers' work in comparison to ask the teacher or their friends themselves. Thus, it is evident that Positive Reinforcement must be implemented so that these "downside symptoms" are to be reduced in order to ensure a higher quality lesson by the teacher per se.

## **4. Research Objectives**

### **4.1 General Objective**

The objective of this research is to improve the pupils' speaking skills and to boost their self-confidence. By doing this, it is aspired that pupils are able to participate in the higher quality lessons from the teacher.

### **4.2 Specific Objectives**

1. To assist pupils who dare to ask teachers in the classes during the lessons in order as means of encouragement for them to speak.
2. To reduce pupils' inferiority via Positive Reinforcement by asking simple phrases in order to boost their self-confidence.

## **5. Focus Group**

The focus group for this research comprises of 8 MBK pupils from PPKI Bayu. Researchers decided to implement Positive Reinforcement on these pupils so that their interests would be spurred positively towards the lessons. Through this, it is hoped that their speaking skills and self-confidence would be improved. This Positive Reinforcement was implemented within the span period of 5 weeks after the school reopened after Movement Control Order (MCO) 2.0.

## **6. Research Implementation**

### **6.1 Research Gap (Issues)**

The research gap is identified via observation and pupils' outcomes.

#### **6.1.1 Observation**

Researchers conducted pre and post observations on the pupils' understanding towards their lessons with the teacher. Prior to the Positive Reinforcement, pupils were seen to be less focused and unable to gauge the lesson conducted by the teacher. However after reinforcement was implemented, it was found that there was positive improvement amongst the pupils where pupils were more confident during their interaction with teachers.

#### **6.1.2 Pupils' Outcomes**

Researchers checked the pupils' workbooks twice that was before and after the lessons conducted. Prior to the Positive Reinforcement, researchers found that there were pupils who were nonchalant and simply completed the works for the sake of teachers' instructions per se.

## 6.2 Analysis on Research Gap

### 6.2.1 Analysis on Observation

Based on the observation conducted after the implementation of Positive Reinforcement, it was found that there were positive observable changes from their voices and body languages as well as the intonation of their interactions with the teachers within the 5 weeks span of the programme. The qualitative measurement can be summarized as per Table 1 and Table 2 below:

*Table 1: Pre-Positive Reinforcement Observation on Pupils*

<b>PRE- POSITIVE REINFORCEMENT OBSERVATION</b>	
<b>Date</b> :	2 <sup>nd</sup> of November 2020
<b>Place</b> :	PPKI Bayu
<b>Time</b> :	During school hours
<b>Remarks</b> :	Pupils are having low self-esteem and do not dare to ask the teachers directly. Apart from that, they are also passive throughout the lessons. Pupils also seemed mortified when teachers asked them and when they attempted to answer the questions posed, the voices were wavered and heads were cowered due to inferiority.

*Table 2: Post-Positive Reinforcement Observation on Pupils*

<b>POST- POSITIVE REINFORCEMENT OBSERVATION</b>	
<b>Date</b> :	1 <sup>st</sup> of April 2021
<b>Place</b> :	PPKI Bayu
<b>Time</b> :	During school hours
<b>Remarks</b> :	Pupils are more confident in comparison to pre-Positive Reinforcement days. They are more willing to ask the teachers if they were to encounter any problem during the lessons. Apart from that, they are also seemed to be less nervous when they are asked by the teachers. Comparatively, their voices becoming more audible and steady when they interact with teachers as opposed prior to Positive Reinforcement intervention programme.

1. Pupils were orally more confident to answer questions posed by the teacher. They answered with audible voice and did not cowered their faces when teacher asked them.
2. Pupils were able to identify and correct the errors in sentences that were purposely inserted by the teachers in order to test their understanding and remembrance.
3. The environments in the classes were more conducive and motivating in comparison to the conditions prior to the reinforcement.

### **6.2.2 Analysis on Pupils' Outcomes**

Based the analysis on the pupils' outcomes after the implementation of reinforcement, it is found that there are positive changes amongst the pupils. This is implied from the quantitative findings based on the number of pupils who demonstrated changes in dependency towards their peers and decreasing numbers in copying the peers' classwork as per Table 3 below.

*Table 3: Number of Pupils Demonstrating Positive Changes during Pre-Positive Reinforcement and Post-Positive Reinforcement.*

<b>Subjects</b>	<b>Number of Pupils</b>		<b>Remarks</b>
	<b>Pre-Positive Reinforcement</b>	<b>Post-Positive Reinforcement</b>	
Malay Language	1/8	6/8	Before the reinforcement was implemented, researchers found that only one out of eight pupils did the classwork without copying the peers. After the reinforcement was implemented, it is found that six pupils became independent and attempted to do their classwork on their own.
English Language	1/8	5/8	Before the reinforcement was implemented, researchers found that only one out of eight pupils did the classwork without copying the peers. After the reinforcement was implemented, it is found that five pupils became independent and attempted to do their classwork on their own.
Mathematics	1/8	6/8	Before the reinforcement was implemented, researchers found that only one out of eight pupils did the classwork without copying the peers. After the reinforcement was implemented, it is found that five pupils became independent and attempted to do their classwork on their own.
Science	1/8	6/8	Before the reinforcement was implemented, researchers found that only one out of eight pupils did the classwork without copying the peers. After the reinforcement was implemented, it is found that six pupils became independent and attempted to do their classwork on their own.

1. Pupils diligently did the work delegated by their teachers and more committed as compared prior to the reinforcement.
2. Pupils were able to participate in discussion with their peers and teachers with more improved confidence. Prior to this, pupils were shy to ask their peers or teachers whereby discussion was non-existent.
3. Plagiarism or copying peers' work amongst pupils were positively reduced.

### **6.3 Action Research**

Based on general survey, it was found that pupils were shy to ask the teacher or their peers in the classes during the lesson. This is because some of the pupils were not interested with the subject of the lesson, lack of self-confidence and afraid of teachers who were strict in the class. Therefore, researchers aim to use the findings of this research to assist own pupils during own lessons. In order to solve the problem, Positive Reinforcement is to be introduced to the pupils via usage of *Traffic Light* cards and also token economy:

1. First, researchers are to brief the teachers on how to use and incorporate *traffic light* cards in their lessons.
2. After that, researchers are to brief the pupils on how to use *traffic light* cards during the lessons and remind them that there would be rewards awaiting for them if they were willing to participate in the reinforcement programme.
3. Pupils could ask whatever related to the class lessons.
4. In order to encourage pupils to use the *traffic light* cards during the lessons, teacher would give them coloured stickers as Positive Reinforcement stimulus.
5. However, it should be noted that not all questions would be given the coloured stickers. Teacher would only give if pupils were to ask questions related to the lessons. If teachers were satisfied with the questions, then only the coloured stickers would be given to the pupils.
6. Rewards could be redeemed according to the numbers of coloured stickers collected by the pupils.
7. The more coloured stickers that were collected, the bigger rewards to be redeemed by pupils.
8. Researchers to prepare the Rewards Timetable with the names of pupils who joined this Positive Reinforcement programme in the class.
9. The green *traffic light* cards means that pupils understand the lesson conducted by teacher.
10. The red *traffic light* cards means that pupils do not understand the lesson conducted by teacher.
11. The yellow *traffic light* cards means that pupils do not understand or that pupils want teacher to repeat the parts in the lesson they do not understand.

### **6.4 Implementation of Positive Reinforcement**

This Positive Reinforcement was implemented within the span period of 5 weeks. When researchers started the reinforcement programme on March 2021 due to the Movement Control Order 2.0, researchers knew that it was not going to be a smooth-flowing programme as there were a lot of SOPs to be adhered in the midst of the pandemic. Therefore, researchers were tasked to think on the best practices suitable to cater to the needs of the pupils as well as to accommodate to the current health climates. After several discussions and deliberations, researchers and the teachers decided to implement this reinforcement programme on pupils from PPKI Bayu.

Researchers conducted the observations and analysed the pupils' workbooks as the lesson outcomes every week. Apart from that, researchers also briefly explained the concept and the impact of this Positive Reinforcement to the teachers and asked for their feedback to improve the execution of the programme.

Based on the observations, it is found that this reinforcement has successfully improve the pupils' self-confidence. Pupils were beginning to be more open to the teachers and dared to ask the teachers to voice out the problems they encountered during the lessons. On top of that, the quality of their lesson outcomes seemed to be improved after this reinforcement programme was implemented to the pupils as the pupils and teachers were overwhelmed with excitement during the lessons. In addition, teachers also were being transparent in sharing their constructive opinions as well as encouragement to researchers throughout the implementation of this programme.

## 6.5 Reflection on the Research

From this research, we found that the Positive Reinforcement programme has helped pupils to boost their self-confidence and their level of remembrance as well as the understanding on lessons conducted. Thus, the lessons became more fun and enjoyable in comparison to the ones prior to the programme.

Nevertheless, there were also some pupils who still struggling on how to use the *traffic light* due to their inconsistency of attendance to the school. On top of that, some of them were still very shy and hesitant to open up towards new approach introduced by researchers and teachers. Hence, they resorted into the easiest way out which was to commit plagiarism or copying the works of the peers.

We were also overwhelmed by the response and encouragement given by the teachers as we discussed on how to catapult the potential of this programme to cater to the needs of these pupils. Somehow we were inspired and aspire by the positive feedback of these teachers too. We believe that this Positive Reinforcement encapsulates myriads of potential serving as tool to improve the pupils' performance in the classes as well as to equip them with sense of self-confidence while interacting with their peers.

## 7.0 Suggestion for Future Research

There are a few suggestions for future research identified from this programme:

1. To gauge the effect of *traffic light* acculturation in the school where teachers are to implement this in all classes for pupils with special needs.
2. To gauge the effect on pupils' self-confidence if teachers were to use behavioural approach to break the ice (patting the head, show thumbs-up signal) in comparison to oral approach as per the conducted research.
3. To gauge the effect on pupils' interest when types of rewards are diversified
4. To gauge the success of Positive Reinforcement according to parameter of financial allocation to the school.

On whole based on this action research, we found that there were positive changes in terms of the teachers' teachings and also the pupils' learnings. We aim to incorporate this programme in all classes (Special Needs and mainstream classes) so that the environment of the lessons is to be conducive and encouraging for pupils to gain knowledge in the school.

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# LEARNING VOCABULARY WITH “BUNCEE ADD SMART” AMONG STUDENTS IN REMEDIATION PROGRAM

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## ABSTRACT

Buncee is a creation and presentation tool for students and educators to create interactive classroom content, allowing learners of all ages to visualize concepts and communicate creatively. The purpose of this experimental study is to examine the effect of using “Buncee Add Smart” in teaching language subjects. In language, on many occasions, the known vocab is used to add understanding to the new vocab among the students in a remediation program for language learning. These students experienced difficulties in learning new vocabulary and had low performances in academic subjects particularly language subjects. A total of 10 students will be participating in a pre-test and post-test with none-equivalent groups quasi-experimental study for learning vocabulary in Malay language. With a variety of graphics and media tools, students in the experimental group were able to develop their imaginations for improving their creativity while having fun. The “Buncee Add Smart” was described as an interactive, drag and drop interface which helps educators create amazing multimedia projects and presentations to increase interactivity and flip the classroom. With this amazing digital tool, it also can add all kinds of elements including animations, stickers, text, drawings, voice and even videos to share around their learning. Drawing from the results of this study, teachers could use “Buncee Add Smart” for creating new innovation with digital tools. The findings indicated that “Buncee Add Smart” could help pupils to learn vocabulary more easily and effectively while enjoying the Educators are able to differentiate the instruction of class's learning through diverse students' learning styles such as auditory, kinesthetic and visual.

**Keywords:** low performances, educational, learning styles, auditory, kinesthetic, visual

## 1. Introduction

A remedial program is an instructional program designed for students who have fallen behind? lagging behind their peers? in school performance and they have average intellectual abilities. Typically, under remedial program in Malaysia comprised of those who are struggling with one subject area like reading, writing or mathematics. Remedial programs are essential to be designed to provide students some individual attentions. They need to build their skills and their confidence so that they can live up to their potential. It also offers students special one-on-one attention that is much more in demand. Almost all the students today find it difficult to sit down and stay focused in class because the delivery of traditional lectures does not grasp the

attention of all learning types. In Malaysia's public schools today, there will be mainstream remedial programs into the class offerings and teachers typically need to learn special remediation skills and methods and smaller class sizes.

Remedial education works on the basis of addressing each learner's difficulties in small groups. As a qualified remedial teacher told us for this article: "Remedial education is definitely not more worksheets. It is the use of practical, hands-on where possible, auditory and visual stimuli." It would ensure that learners under your care are getting the attention they need and becoming better than doing nothing. According to Charles W. Elio, 'Books are the quietest and most constant of friends; they are the most accessible and wisest of counselors, and the most patient of teachers'.

From time to time people have wondered why reading is important. It is important to realize that struggling with vital reading skills is not a sign of low intelligence. For example, John Corcoran, who wrote *The Teacher Who Couldn't Read*,[1] is a very intelligent man. He graduated from High School and College, later he became a popular High School teacher and a successful businessman, all without being able to read. Remedial pupils actually are highly intelligent people who have struggled with reading. However, when they are properly taught with special educational tools, most of them can learn to read easily and quickly.

Learning new vocabulary is about listening and understanding as well as working out what is shown in attractive and colourful graphics. Through hearing, children are exposed to a wide range of words. This helps them build their own vocabulary and improve their understanding when they listen, which is essential as they start to read. It is important for them to understand the meaning of the vocabulary too. Even if pupils do not understand every word, they will hear new sounds, words and phrases which they can then try out, copying what they have heard. Irrespective of whether pupils are only just beginning to learn to read or whether they are fluent, teachers always play an important role in helping to keep them interested in learning new vocabulary. With full efforts, find out what special tools could interest and help them to learn well that will be engaging and fun and spend time with them together.

Vocabulary refers to the collection of words that a person knows and uses. Vocabulary development is the process of acquiring new words. Children start to know the vocabulary from preschool and first grade is often a strong indicator of their reading comprehension in later grades. That's why it's so important to focus on building vocabulary skills throughout reading instruction. There are many ways to improve and increase vocabulary skills. With "Buncee Add smart", building vocabulary skills is fun and interesting! It uses exciting, multimedia activities to teach standards-based reading & vocabulary lessons as part of a language arts curriculum.

## 2. Literature Reviews

### 2.1 Connectivism

Connectivism releases the learner from the cognitive practices of acquiring knowledge through experience, study, and receiving instruction. (Abik et al., 2012). [2] Connectivism allows students to incorporate electronic devices for the "off-site" storage of information, treating the role of memory differently than prior learning theories. With connectivism, technology is permitted to become part of the student's internal learning process. While older learning theories have their place in the communication of basic knowledge, instruction must embrace

connectivism to ensure that knowledge in the 21st century will be properly conveyed (Abik et al., 2012). [2]

Before technology appeared on the pedagogical landscape, the cognitivist method was delivery of instruction by a teacher-centered method. Students were receivers of the information. In the constructivist model, learners became dynamic members in the development of their learning while the teacher served as facilitator (Stavredes, 2011). [3] In the post-technology world, Siemens proposed “connectivism as a learning theory for the digital age” (Siemens, 2004, p.1). [4] In connectivism, knowledge is distributed across networks where connections and connectedness inform learning. Heavily grounded in technology, connectivism is a learning theory based on the acquisition of the knowledge focused on the future, not the past (Siemens, 2012). [5] [6]

Learning theory and internet technologies are some of the components of what is considered an online educational -experience. Although the teacher, student, and content generally remain the same, the transmutation of student–teacher–content pedagogical triangle of the cognitive theory to the student–teacher–network–content tetrahedron of the connectivist learning theory invites the network into the educational process (Fiore, 2017). [7] Whether a student is learning in an online program or distance education course, teaching and learning can be improved by the incorporation of connectivist learning theory.

Connectivists such as Siemens and Downes tend to be somewhat vague about the role of teachers or instructors, as the focus of connectivism is more on individual participants, networks and the flow of information and the new forms of knowledge that result. The main purpose of a teacher appears to be to provide the initial learning environment and context that brings learners together, and to help learners construct their own personal learning environments to enable them to connect to ‘successful’ networks, with the assumption that learning will automatically occur as a result, through exposure to the flow of information and the individual’s autonomous reflection on its meaning. There is no need for formal institutions to support this kind of learning, especially since such learning often depends heavily on social media readily available to all participants.

Different theories of learning reflect different positions on the nature of knowledge. With the possible exception of connectivism, there is some form of empirical evidence to support each of the theories of learning outlined here. However, while the theories suggest different ways in which all people learn, they do not automatically tell teachers or instructors how to teach. Indeed, theories of behaviourism, cognitivism and constructivism were all developed outside of education, in experimental labs, psychology , neuroscience, and psychotherapy respectively. Educators have had to work out how to move from the theoretical position to the practical one of applying these theories within an educational experience. In other words, they have had to develop teaching methods that build on such learning theories. The next section of the book examines a range of teaching methods that have been developed, their epistemological roots, and their implications for teaching in a digital age.

## 2.2 VARK Learning Styles

Every student is totally different. It is readily observable that different students have different learning styles, that some students retain information easily when it is presented to them via a format or method that may confound one of their classmates. To help educators develop strategies for reaching every student in their classroom effectively, educational scholars have

devised various typologies of different styles of learning. Below, read about VARK, a commonly cited schema for assessing students' learning preferences, and the four different learning styles that comprise it, and discover some strategies for engaging with each type of learner.

The acronym "VARK" is used to describe four modalities of student learning that were described in a 1992 study by Neil D. Fleming and Coleen E. Mills. [8] These different learning styles—visual, auditory, reading/writing and kinesthetic—were identified after thousands of hours of classroom observation. The authors also created an accompanying questionnaire for educators to give to students to help them identify and understand their own learning preferences.

### **2.2.1 Visual Learners**

Students who best internalize and synthesize information when it is presented to them in a graphic depiction of meaningful symbols are described as visual learners. They may respond to arrows, charts, diagrams and other visualizations of information hierarchy, but not necessarily to photographs or videos. [9] Because visual learners tend to be holistic learners who process information best when it is presented to them as a robust whole rather than piecemeal, they tend to see positive educational outcomes when they are presented with summarizing charts and diagrams rather than sequential slides of information. [10]

### **2.2.2 Auditory Learners**

Auditory (or aural) learners are most successful when they are given the opportunity to hear information presented to them vocally. Because students with this learning style may sometimes opt not to take notes during class in order to maintain their unbroken auditory attention, educators can erroneously conclude that they are less engaged than their classmates. However, these students may simply have decided that note-taking is a distraction and that their unbroken attention is a more valuable way for them to learn. [11] Auditory learning is a two-way street: Students who fall into this modality often find success in group activities where they are asked to discuss course materials vocally with their classmates, and they may benefit from reading their written work aloud to themselves to help them think it through. [9]

### **2.2.3 Reading/Writing Learners**

Students who work best in the reading/writing modality demonstrate a strong learning preference for the written word. This includes both written information presented in class in the form of handouts and PowerPoint slide presentations as well as the opportunity to synthesize course content in the completion of written assignments. [12] This modality also lends itself to conducting research online, as many information-rich sources on the internet are relatively text-heavy. [9] Reading/writing-oriented students should be encouraged to take copious notes during classroom lectures to help them both process information and have an easier time recalling it later.

### **2.2.4 Kinesthetic Learners**

Kinesthetic learners are hands-on, participatory learners who need to take a physically active role in the learning process in order to achieve their best educational outcomes. They are sometimes referred to as "tactile learners," but this can be a bit of a misnomer; rather than simply utilizing touch, kinesthetic learners tend to engage all of their senses equally in the

process of learning. [13] Because of their active nature, kinesthetic learners often have the most difficult time succeeding in conventional classroom settings. Some educators have found success encouraging kinesthetic learners to utilize flashcards for subjects like math and English to make rote memorization into an interactive experience. These students also often thrive in scientific subjects with lab components, as the skills-based, instructional training that occurs in these settings engages them in productive ways. [13]

### **2.2.5 Several Different Learning Styles**

Few things in life fall into easily delineated schema, and learning preferences are no exception. In fact, studies estimate that somewhere between 50 and 70 percent of the population have affinities to several different styles of learning. [14] These people are called “multimodal learners” and tend to succeed in classroom settings that engage them with multiple learning styles alternately or in concert with one another. Just because students can succeed with different learning styles does not necessarily mean that they should be engaged with more than one on most occasions. However, while today’s media-rich environment has made multimodal learning easier than ever before, recent studies recommend some caution and care when introducing multimedia instructional design into the classroom. Generally speaking, multimedia should be treated thoughtfully as a means to a specific educational goal rather than an end itself, and multimodal, interactive instruction should be reserved for more complex topics than for basic memorization and skill-building. [15]

## **2.4 Improving Visual Reading Strategies**

### **2.4.1 Buncee for Education**

Buncee for Education is a versatile platform where teachers and students create and share multimedia presentation boards by adding Buncees or slides. The site (iOS and Chrome app, too) offers simple, free-to-try tools for creating slideshows that can be embedded or shared via email, social media, QR code, or URL. The simple interface helps students create slideshows easily. Students start by naming the project and then work through the menus to add content to the slides in the form of drawings, animations, videos, emojis, stickers, and tons of other design features. There's an extensive image library as well as options to search for online images, music, and videos, though some content may be inappropriate or blocked by school or district filters. Just be sure to teach kids about giving proper credit for content they find online. Users can also get inspiration from the blog and make copies of boards contained in the gallery.

With so many choices, it's easy to come up with ideas for engaging presentations, but using effective design techniques will be paramount to the tool's effectiveness. An abundance of visual options could lead to poorly designed or cluttered presentations. When assigning projects to students, teachers should be clear about their expectations. Provide examples, modeling and scaffolding to help support students' creation. Encourage students to explore the gallery or use available templates as they develop their design skills. Within the tool, give students limits so that the visual resources enhance, rather than overpower, their projects.

Buncee is an incredible technology tool which is used in the classroom. Educators have utilized Buncee in all subjects such as Mathematics for students to explain a concept they are learning. They have also utilized creating a video to explain the concept they have been working on during class. Students have thoroughly enjoyed using Buncee in this way. As a teacher, this

makes it clear which students thoroughly understand the concept and which students would benefit from another lesson. Teachers may create vocabulary slides with vocabulary words. Their slides can have the word and definition. Additionally, it was able to select a background, sticker, and animation that supported the vocabulary word and definition. They become completely engrossed in the process. Students have worked collaboratively after reading a text. Students also have chances to create projects using Buncee. These projects have focused on the animal collections, spelling book, and port of entry projects just to name a few. The possibilities are truly endless with Buncee.

Create Buncees for online storytime by recording yourself reading a book and including supplemental clips and activities to enhance comprehension. Foreign language teachers can take advantage of the practically limitless content options to design or assign presentations where students video themselves speaking, practicing vocabulary, or reading aloud. In any subject area, give kids a chance to teach each other by using the comment feature to provide feedback, improve writing, or correct inaccuracies. There are some examples of “Buncee Add smart” as below for improving students' learning.

#### **PERKATAAN KVK (MALAY VERSION)**

<https://app.edu.buncee.com/buncee/ff397c4151c04f5d98eb830e42732185>

*Figure 1 : The example of “Buncee add smart” in teaching the new vocabulary*



*Figure 2 : The example of “Buncee add smart” in teaching the new sentence*



#### **2.4.2 Visual-spatial Skills**

Visual-spatial skills help individuals find their orientation in space through taking in information from the world around them and organizing that visual information to create an understanding of meaningful patterns. Visual-spatial skills allow us to perceive the visual information in the environment, to represent it internally, and integrate it with past experiences, to derive meaning

and understanding, and to perform manipulations and transformations on those perceptions. Deficits in visual-spatial skills can have a pervasive impact on a student's abilities. These skills are important in helping us think abstractly, visualize verbal information, and recognize how details are related to big picture ideas. Weaknesses in this area can impact basic skills such as letter formation, note taking, and simple math computation as well as more complex skill areas such as reading comprehension, math (e.g., estimation, geometry, trigonometry, calculus), and social skills.

### **2.4.3 Teaching Reading Strategies**

Teaching reading strategies usually starts with modeling through a read-aloud. Choose a text to share and be sure to pre-read that book and prepare for places that you will stop to model the mental images that you are creating. You may want to have a whiteboard or chart paper available to actually draw, or have the drawings prepared ahead of time, to show your students when explaining your mental images. You can also draw your mental images on post-it notes and place them on the actual page in the story that sparked the mental image. Again, these images can be drawn in real time with students or prepared ahead of time to share with the students as you get to that part in the story. Be sure to showcase all 5 senses when describing your mental picture.

When teaching readers to visualize, it is crucial to choose a text that will support this strategy. Be sure to choose a book that is full of descriptive language and details. Students will need ample time to practice this strategy with you in guided reading or strategy groups as well as with their independent books. In all settings, students will need simple visuals to help them remember to use this strategy often. For example, a bookmark highlighting the strategy will help remind students to visualize while independent reading, or while reading in small groups.

Likewise, a colorful classroom poster to refer to is also a friendly reminder to keep creating mental images while reading. Create a bulletin board set where you begin to highlight each reading strategy as you introduce them to your students. Students can refer to the bulletin board all year long! Create on-going anchor charts of the mental images that you are creating during read-aloud modeling. These mental images, along with any written descriptions that you include with them will serve as great examples for students when creating their own mental images.

Visualizing is an important reading strategy that good readers use to help create mental images or movies in their minds to represent the ideas that they read in the text. Visualization requires students to weave together their own background knowledge, text evidence, and creativity to make an image in their mind's eye to match the story or informational article that they are reading. The images that they make help them to understand what they are reading at a deeper level. Visualizing is my favorite reading strategy to teach since it is not only fun for students but truly helps them to dig deeper into what they are reading. It is highly engaging for students and its interactive nature helps readers of all levels, including struggling readers, connect with the text. In fact, I have watched struggling readers blossom as readers when they put this reading strategy into action. As we teach students to make mental pictures and visualize as they read, we must provide students with opportunities to practice pulling their own background knowledge and gathering important language from the text to help create their own creative mental image of the books that they are reading to understand the text at a deeper level.

### **3. Objectives of Study**

The specific objectives of the study were to:

1. Identify the effectiveness of the “Buncee Add Smart” method in language subjects among remedial pupils.
2. Identify the effectiveness scores of remedial pupils in the pre-test and post-test before and after using the “Buncee Add Smart” method.

### **4. Hypothesis**

H<sub>0</sub>: There is no significant difference between the test scores of group A remedial pupils and group B remedial pupils based on the “Buncee Add Smart” method and the traditional method.

H<sub>1</sub>: There is a significant difference between the test scores of group A remedial pupils and group B remedial pupils based on the “Buncee Add Smart” method and the traditional method.

H<sub>0</sub>: There is no significant difference between pre-test and post-test of remedial pupils in Malay language subject.

H<sub>2</sub>: There is a significant difference between pre-test and post-test of remedial pupils in Malay language subject.

### **5. Research of Methodology**

This study includes a quantitative study and it can be classified into quasi-experimental research. The research design uses a pre-test and post-test with none-equivalent groups which involve a group of students who belong to the experimental class and another class as the control class. According to Kothari [16], the principle of an experimental study is that if two identical groups are taken, one of which is given special treatment and the other is no. In this study, the special treatment given is the “Buncee Add Smart” in teaching language subjects.

The researchers organized pre-test in both classes for learning new vocabulary in language subjects before the two classes were given treatments. Afterwards, the researcher gave the “Buncee Add Smart” to class A as the experimental class and a traditional method was provided to class B as the control class. After organizing the pre-test for the two classes, the researchers administered the post-test to both to see the students’ achievement after the treatments were provided.

The main purpose of this study was to investigate and identify the effectiveness of using “Buncee Add Smart” in teaching language subjects on learning new vocabulary among remedial pupils. The Malay language subject was chosen to assess the effect on remedial pupils by using “Buncee Add Smart” because it is fundamental to all subjects in elementary schools.

Conducting a pilot test is to confirm the reliability, validity, and internal consistency of the test questions, followed by field testing methods, which was used to identify the effectiveness of “Buncee Add Smart”. Data analysis involved a quantitative research approach using a paired t-test to find the difference in scores between the pre-test and post-test. Analysis of variance (ANOVA) was used to analyse and find the relationships between improvements in scores and variables.

10 participants were randomly selected from all the remedial pupils. The ability of this group of remedial pupils was measured three times within a period of six months from July 2020 to January 2021 to collect data of their performance in one of the primary schools. They were coming from different classes and had a variety of learning disabilities. Class A consisted of 5 remedial pupils [4(80%) girls and 1(20%) boys] who were diagnosed with reading and writing disabilities. Class B consisted of 5 remedial pupils [3(60%) girls and 2(40%) boys] who were also diagnosed with reading and writing disabilities. Class A was provided with the “Buncee Add Smart” method. However, class B was taught by the traditional method. The pupils of class B were conducted by using the flashcards for learning the new vocabulary.

There is one set of instruments prepared for checking how much vocabulary has been acquired by the students. There are only pictures and words for choosing the correct answers. The score of the instrument is 20 marks by counting how many correct answers. The higher marks get means the more vocabulary has been learned within six months.

## 6. Data Analysis & Findings

This study aimed to reveal whether the use of the “Buncee Add smart” method is more effective than that of the traditional method to learn new vocabulary in relation to students' performance. The T-test was used to assess whether there is any difference between students' performance taught by using the “Buncee Add smart” method. The study was conducted during a period of six months from July 2020 to January 2021 for remedial pupils.

The data was collected through pre-test and post-test by using T-test. In this research, the measurements are repeated three times in order to identify the difference in their performance. The tests were given to the remedial pupils before and after the treatments. The paired t-test was carried out to assess whether a significant difference exists between pre-test and post-test for repeated measurements. The data was collected from pre-test and post-test in the Malay language subject.

Table 1: The scores of effectiveness of the “Buncee Add Smart” method after three months

GROUP	PRE-TEST THE MALAY LANGUAGE SUBJECT	POST-TEST THE MALAY LANGUAGE SUBJECT
A	2	15
A	4	18
A	3	15
A	5	19
A	3	16

*Table 2: The scores of the traditional method after three months*

GROUP	PRE-TEST THE MALAY LANGUAGE SUBJECT	POST-TEST THE MALAY LANGUAGE SUBJECT
B	2	7
B	3	8
B	4	7
B	2	6
B	3	9

*Table 3 : The mean value for Group A and Group B.*

Group Statistics	CLASS	N	Mean	Std. Deviation	Std. Error Mean
SCORES FOR 2 GROUPS	GROUP A	5	16.6	1.81659	0.8124
	GROUP B	5	7.4	1.14018	0.5099

*Table 4 : The Independent-samples T-test between Group A and Group B.*

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
SCORES FOR 2 GROUPS	Equal variances assumed	9.592	8	0	9.2	0.95917	6.98816	11.41184	
	Equal variances not assumed		2.753	0.136	9.592	6.728	0	9.2	0.95917

The t-test results are significant ( $t = 9.592$ ,  $df = 8$ ,  $P < 0.05$ ). There is a difference between remedial pupils in group A and group B who were taught by the “Buncee Add Smart” method and the traditional method. The mean difference value of 9.2 shows that in the population from which sample is drawn, the group A remedial pupils in teaching the “Buncee Add smart” method (mean score=16.6) were more effective than group B remedial pupils in teaching the traditional method (mean score= 7.4).

*Table 5 : The Paired-samples statistics between pre-test and post-test.*

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TRADITIONAL	3.4	5	1.14018	0.5099
	BUNCEE ADD SMART	16.6	5	1.81659	0.8124

*Table 5 : The Paired-samples correlations between pre-test and post-test.*

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	TRADITIONAL & BUNCEE ADD SMART	5	0.941	0.017

Table 5 : The Paired-samples T-test between pre-test and post-test.

							t	df	Sig. (2-tailed)
Pair 1	TRADITIONAL - BUNCEE ADD SMART	-13.2	0.83666	0.37417	-14.23885	-12.16115	-35.278	4	0

The paired-samples T-test table showed that the research result is significant ( $t = -35.278$ ,  $df = 4$ ,  $p < 0.05$ ). The null hypothesis is rejected and there is a difference in the result of remedial pupils’ average score in the pre-test and post-test for Malay language subject. The mean score value is higher after applying the “Buncee Add smart” method which is 16.6 compared to the traditional method with only 3.4 (based on table 5). This showed the result of remedial pupils’ average score being able to increase with the “Buncee Add smart” method.

## 7. Discussion

The first set of findings to address the Research Question 1 revealed that there is a significant difference between the test scores of group A remedial pupils and group B remedial pupils based on the “Buncee Add Smart” method and the traditional method. The “Buncee Add smart” method was more effective than that to enhance students’ learning for Malay language subject. It would be proved that visual learners tend to be holistic learners who process information best when it is presented to them as a robust whole rather than piecemeal, they tend to see positive educational outcomes when they are presented with summarizing charts and diagrams rather than sequential slides of information. [10]

The indicator of this was the mean score of students who were taught by using the “Buncee Add smart” method was higher than that of those who were treated by using the traditional method. By applying the traditional method, remedial pupils find it difficult to sit down and stay focused in class and most of them have to give more attention by using interactive digital tools such as “Buncee Add smart” method. In addition, the delivery of traditional methods does not grasp the attention of all learning types. In fact, studies estimate that somewhere between 50 and 70 percent of the population have affinities to several different styles of learning. [14] These people are called “multimodal learners” and tend to succeed in classroom settings that engage them with multiple learning styles alternately or in concert with one another. Educators also find it hard to differentiate the instruction of the class’s learning through diverse students’ learning styles such as auditory, kinesthetic and visual.

The second set of findings to address Research question 2 indicated that there is a significant difference between pre-test and post-test of remedial pupils in Malay language subject. The “Buncee Add smart” method has prepared all the learning tools which were suitable for remedial pupils. 5 of remedial pupils were indicated with the higher, mean score after the post-test. Visualizing is an important reading strategy that good readers use to help create mental images or movies in their minds to represent the ideas that they read in the text. Visualization requires students to weave together their own background knowledge, text evidence, and creativity to make an image in their mind's eye to match the story or informational article that they are reading. The images that they make help them to understand what they are reading at a deeper level. Visualizing is my favorite reading strategy to teach since it is not only fun for students but truly helps them to dig deeper into what they are reading. It is highly engaging for students and its interactive nature helps readers of all levels, including struggling readers, connect with the text. “Buncee add smart” method is fun and interesting to improve students’ imagination and the graphics have attracted the visual learners. This method also can take advantage of remedial pupils to speak, practice or read aloud vocabulary with repetition. They were able to apply self-learning at home without teachers' guidance.

Every student has a handphone, an ipad or a computer in order to follow the generation of artificial intelligence. Connectivism allows students to incorporate electronic devices for the “off-site” storage of information, treating the role of memory differently than prior learning theories. Before technology appeared on the pedagogical landscape, the cognitivist method was delivery of instruction by a teacher-centered method. Students were receivers of the information. Traditional methods were no longer an effective method to improve students’ performance. In the constructivist model, learners became dynamic members in the development of their learning while the teacher served as facilitator. [3] In the post-technology world, Siemens proposed “connectivism as a learning theory for the digital age”. [4] Students have the potential to play an important role in interacting with the digital world.

Nevertheless, a noteworthy observation from the post-test assessment is that the poor performance by the children in the pre-test assessment significantly improved after the interventions and especially after practice and training by using the “Buncee Add Smart” method. Although the pupil's performance in the post-test improved immediately after applying the “Buncee Add Smart” method, the results reveal that the pupil's new vocabulary knowledge and word reading improved significantly. This means the remedial pupils improved their knowledge of letters and words even in the extremely short time. According to [17], children who performed poorly even after training and practice might have needed more time and repetition to learn letter-sound correspondences, which is the most essential skill in learning to read. Children's individual differences in reading performance depends on the child's memory for sounds and the rate at which he or she can retrieve the sounds from short-term memory.

## 8. Conclusion

The “Buncee Add smart” method can enhance students' learning new vocabulary skills because it contains a process of monitoring the results of the interpretation. This technique also can encourage students to learn, listen, and attain a good understanding of texts being read. The study showed that the “Buncee Add smart” method has a relatively high impact in improving remedial students' achievement, especially in reading and listening skills. As discussed at the beginning, digital tools have the potential to produce active learning. The “Buncee Add smart” method was a new innovation to release the boredom and tiredness of remedial students. In an effort to strengthen the teaching of basic reading and writing skills, teachers have to create more creative and interactive materials through the “Buncee Add smart” method. Therefore, strong effects of the remedial teachers could increase the excellence of remedial pupils in learning new vocabulary skills.

Furthermore, there was significant improvement in the mean scores (with regard to pre-test and post-test scores) among remedial pupils. Learning how to read is also complicated by limited access to reading materials, and large classes. The results point strongly to the need for the government to ease the burden on teachers by finding the best ways to make teaching and learning easy for both children and teachers, who are at times overwhelmed by having to teach so many children. From the study results, the “Buncee Add smart” method seems to be one of the best ways. The “Buncee Add smart” method can be used as a tool for supplementing the acute shortage of reading materials in primary schools. Students do not have interesting material to read for them to automatise their skills to become functional for reading acquisition. The “Buncee Add smart” method will provide teachers with additional assistance that will help children to learn new vocabulary as well. In the future, “Buncee Add smart” method will be able to be used in other subjects such as mathematics and sciences which need more interactive teaching tools to improve students' learning in advance.

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# IPGKPT DESIGN AND TECHNOLOGY (RBT) TEACHER TRAINEES' KNOWLEDGE TO HANDLE SPECIAL NEEDS STUDENTS IN INCLUSIVE EDUCATION

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## ABSTRACT

The importance for teachers in inclusive classrooms to have knowledge and skills in the management of student behavior has been reported in several studies. An effective teacher in an inclusive classroom is a teacher with high self-efficacy in handling students who have behavioral issues in their classroom. The pre-service teacher training of the Institute of Teacher Education Malaysia (IPGM) emphasizes on behavior management through several courses offered and enrichment activities outside of the lecture rooms. In this regard, several courses such as EDUP3023 Child Development, EDUP3043 Classroom Management and Behavior and also RBTS3132 Inclusive Education have been offered to expose trainee teachers to the knowledge in handling students with special needs for IPGM students who are not majors in special education. This concept paper on a descriptive quantitative study to be conducted to see the level of knowledge of trainee teachers, especially RBT major in one of the Institute of Teacher Education, Technical Education Campus (IPGKPT) on handling special needs students in inclusive education in schools. The methodology that will be used in this study involve questionnaires of a total 63 respondents of IPGKPT Semester 6 students who have studied the all three courses. The knowledge of RBT trainee teachers in handling MBK is anticipated to be in a high range as these three subjects involve many hands-on activities that require more control from the teachers during teaching and learning sessions.

**Keywords:** Inclusive education, special needs students, trainee teachers, hands-on activity

## 1. Introduction

The Inclusive Education Program (PPI) highlighted by the Ministry of Education Malaysia (MOE) in the Malaysian Education Development Plan (PPPM) 2013-2015 is an initiative carried out to celebrate Students with Special Needs (MBK) to learn together with typical students in the classroom and also in the same school (Amin & Yasin, 2016). In other words, all students without any segregation and exclusion are able to enjoy the same facilities and syllabus without having to take into account background, skin color, races, economic status and ability either physically or mentally. The implementation of PPI which is implemented in almost all schools around the world aims to provide opportunities for MBK to be active

academically and socially in school to form their identity so that they can contribute to the community (Norliah & Hanafi, 2016). Its implementation is also to comply with the zero rejects policy where special needs children to be involved to learn alongside normal students and teachers need to accept their presence without discrimination.

Pupils with Special Needs (MBK) are children with learning difficulties. Smart children or gifted children who have much higher abilities and intelligence than other children are also considered as children with special needs (Sari, 2017). In general, MBK is different from a typical child and requires different attention and care than a normal/typical child. Such differences can be classified in terms of mental characteristics, sensory ability, communication ability, behavioral and emotional as well as physical characteristics. According to the United Nations Children's Fund (UNICEF) Malaysia (2016), an estimated 440,000 children in the country are children with disabilities and tend to experience various barriers depending on factors such as type of disability, age, location, gender and ethnicity. Referring to the aspect of education in Malaysia, children who tend to have learning difficulties due to different mental characteristics such as Dyslexia, Autism, Attention Deficit Hyperactive Disorder (ADHD) and slow learners while in terms of physical consists of cerebral palsy, vision problems, hearing problems as well as speech problems.

Based on that, the National Transformation 2050 (TN50) has set the aspect of 'being a student' which is to be a student who is not only academically excellent but also covers the personality, physical and health as well as the positive nature of the students themselves to create a highly skilled generation to fill national needs (Nor & Rashed, 2018). One of the subjects provided by KPM for students is Design and Technology (RBT) and is the only subject that involves many psychomotor domains, physical movement or hands-on practical work. Boon & Ahmad (2012) stated that the safety aspects of the workshop that have to do with physical, mental, environmental and workplace health should be kept free from danger so that accidents that caused injuries can be avoided during the teaching and learning process. Thus, teachers need to be efficient in conducting teaching that is appropriate to the level of ability of MBK to determine the success of the teaching process implemented (Zulkifli & Mohamed, 2019). In other words, teachers need to strengthen their knowledge in handling MBK in inclusive classrooms especially for RBT subjects.

Overall, this study will revolve around the knowledge of trainee teachers on the handling of MBK in teaching and learning inclusive education for RBT subjects.

## **1.1 Purpose of the Study**

The purpose of this study is to obtain information on the level of knowledge of RBT trainee teachers of IPGKPT in handling special needs students in inclusive education involving RBT subjects.

## **1.2 Objectives of the Study**

The objectives of this study are to identify the level of knowledge of RBT trainee teachers of IPGKPT in handling special needs students in inclusive education involving RBT subjects.

The research questions to be answered through this study are:

1. What is the level of knowledge of RBT trainee teachers of IPGKPT in handling special needs students in inclusive education involving RBT subjects?

## 2. Literature Review

### 2.1 Knowledge of Teachers in Handling MBK

Special needs students (MBK) need more attention while learning than typical students and this has coincided with previous studies where some aspects need to be taken into account and modified according to the needs and characteristics of students (Ghafar & Jahaya , 2006). Teachers should play an important role in planning and providing a learning environment that is able to provide an effective experience (Noriati, Ying & Sharifah, 2017) and then be able to handle MBK well.

According to a study conducted by Chao, et, al. (2017) entitled 'Improving Teachers' Self-Efficacy in Applying Teaching and Learning Strategies and Classroom Management to Students with Special Education Needs in Hong Kong' emphasized that effectiveness in handling MBK will have a significant impact on the effectiveness of inclusive education implementation. This is measured through training courses given by teachers. Some of the aspects taken into account in this study are in terms of learning strategies, classroom management and teachers' knowledge and confidence. The questionnaire distributed to 347 teachers, including school administrators, however, had some shortcomings where the effectiveness of teachers in conducting inclusive classes did not includes in handling MBK behavior.

In addition, Zulkifli & Mohamed (2019) in their study have highlighted the level of knowledge of special education teachers in handling MBK behavior is more effective with the use of reinforcement. According to them, reinforcement is able to shape the personality of students as well as maintain focus on the learning process. Both positive and negative reinforcement should be practiced by teachers in handling MBK, especially during the teaching and learning process. However, the researchers were unable to provide examples of reinforcement used by teachers in class as a result because the instruments used were limited to questionnaires without involving observation forms. According to Cheong, Abdullah & Nee (2018), observation is the process of critically examining a situation or event to observe student behavior based on aspects that have been identified.

In the meantime, Mohan & Abd Majid (2020), have expanded the context of MBK management by conducting a study on teachers' knowledge of MBK disruptive behavior. The findings of his quantitative study using the questionnaire outline some important things that need to be taken into account in managing MBK behavior. Among the aspects that are considered important are in terms of management techniques, student characteristics, classroom atmosphere and teachers' knowledge of MBK. All these aspects play a role in handling MBK. However, this study did not expand further on examples of disruptive behaviors and the frequency of MBKs' behaving in such way during the learning process.

In summary, the main findings from past studies have been the starting point to formulate a conceptual framework for this study to be conducted. An assessment of the suitability and probability of easily obtaining data on the independent variables in the study was also taken into account. Among the items included in the independent variables in terms of knowledge of handling MBK are from the aspects of (1) student characteristics (2) lesson plans, (3) materials or equipment, and (4) reinforcement has been determined after examining the former studies.

## 2.2 Inclusive Education Program (PPI)

Inclusive education conducted in Malaysia by involving special needs students to study together with mainstream students is one of the government's efforts in creating a non-discriminatory education system. This implementation needs to be implemented and managed well and requires monitoring from time to time.

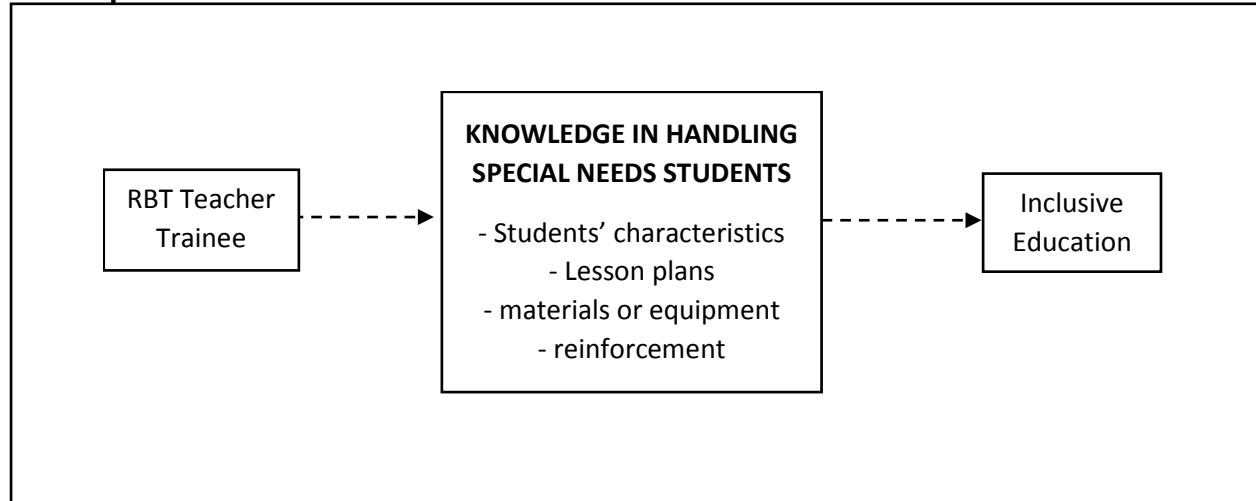
Ahmad (2014) in his study highlighted that the implementation of this PPI is only able to achieve its objectives when mainstream teachers who are directly involved with the program are given adequate in-service courses. This is to avoid the occurrence of constraints such as infrastructure, teaching resources and lack of teacher training (Gathumbi et. Al., 2015) that can cause PPI could not be implemented comprehensively. Both of these studies discuss the management as well as implementation of PPIs by teachers and administrators whether at a satisfactory level or not. Accordingly, several items from the two studies have been analyzed to be applied in future studies that is on inclusive implementation.

In addition, Amin & Yasin (2016) also highlighted some things that need to be taken into account for the success of PPI. One of the aspects emphasized is the knowledge of mainstream administrators and teachers. This is because, teachers who do not have a special education background should be given training or courses before they are involved with the program. Bouck (2004) in the study of Ahmad (2014) also discusses the involvement of MBK in vocational programs only in a small percentage of 0.5% only. The findings were obtained through a questionnaire conducted on teachers. The inclusive implementation of this low -level skill area has aroused a desire to conduct a study by linking this inclusive education with the Technology Design specialization, which is a branch of vocational programs for primary schools.

Overall, the findings of previous studies have provided enlightenment for this study to continue especially in terms of conceptual framework of the study. The lack of research in handling special needs students in the inclusive education involving skills or vocational programs has been the impetus to continue this study as a hope that awareness on the involvement of MBK in the field of skills and vocational learning is not impossible and can be realized.

## 3. Methodology

### Conceptual Framework



From the literature review, a conceptual framework has been constructed and there are four components that will be linked to the knowledge of RBT trainee teachers in IPGKPT on the handling of MBK in inclusive classrooms. All these components are found to be important to measure their level of knowledge in handling students with special needs in the classroom and to determine whether the three subjects provided by IPGM related to students with special needs are able to assist trainee teachers in receiving and providing learning appropriately to the needs of students with special needs. Therefore, the dependent variable of this study is the knowledge in handling special needs students meanwhile the independent variables are students (1) student characteristics (2) lesson plans, (3) materials or equipment, and (4) reinforcement.

The characteristics of students with special needs need to be known by every teacher before learning process can be carried out properly. If the teacher does not have a solid knowledge of the student's background, the teacher's ability to build emotional and social relationships and gain trust from the student will be limited. A good teacher-student relationship will create a conducive environment for students to learn better. Teachers' knowledge of student characteristics includes students' level of ability, communication ability, reading ability and student emotional management. The ability of teachers to identify the level of ability of students based on background information and characteristics of students encountered will help teachers to pursue more effectively and confidently in inclusive education classes especially for teachers who are not from special education fields.

In the meantime, a good lesson planning will determine the success of a learning process. Teachers' knowledge in organizing effective activities for students with special needs is important to ensure that learning objectives can be achieved. For students with special needs, the learning outcomes set by teachers must be appropriate to the level of ability and capability of students with special needs. Teachers of special needs students are supposed to diversify teaching methods and techniques and be creative in order to attract students' interest in learning (Norfadhilah, 2014). The success of teachers in attracting students and maintaining their interest throughout the learning process will prevent students from disruptive behavior and allow the teaching process to run smoothly. Teachers who are successful in planning effective classes will increase the level of confidence of teachers to deal with students with special needs in inclusive education classes.

Effective teaching and learning occur by using a variety of resources available either outside or inside the classroom itself. Exciting lessons using variety of tools and materials will help students to focus on the teacher's teaching. Good knowledge can help increase teachers' confidence to innovate in teaching (Abdul Rahman, 2016). The knowledge and experience that teachers have will help them to improve the lesson as well as enhance the modification and adaptation process of those materials. RBT subjects practiced in schools that involve a variety of sharp equipment such as needles throughout the learning initiate a high level of knowledge among teachers to ensure that the equipment is suitable and safe to use. The ability of teachers to adapt learning equipment and materials for students to learn, especially students with special needs whose level of ability is less than typical students will ensure that the goal of inclusive education is achieved well.

In order to develop students' good behavior, the element of reinforcement is a component that is often practiced by teachers in the classroom. Positive or negative reinforcement will ensure that only desired behaviors from the student are accepted in the classroom. According to Lamport et, al. (2012), effective reinforcement help teachers implement better teaching as desired while being able to improve the academic success of students especially for students with special needs who have emotional and social disorders. Disruptive and unwanted student behavior can affect the smoothness of the lesson as teachers have to resolve the unwanted behavior that arise while they are teaching. Teacher's knowledge in using appropriate reinforcement to shape student behavior

especially for students with special needs will create a healthy classroom environment. This will indirectly increase the effectiveness of the implementation of inclusive education in schools.

## 4. Discussion

The knowledge of RBT trainee teachers in handling students with special needs in inclusive education will be measured based on four independent variables, namely knowledge of student characteristics, lesson plans, materials or equipment, and reinforcement. Based on courses related to inclusive education provided by IPGM, information on whether the IPKPT teacher trainees in major knowledge in handling special needs students in the inclusive class will be known.

However, the knowledge gained from the three courses provided to RBT trainee teachers is still at a discontented level for them to give the best performance when involved with inclusive education. Additional and practical courses that involve students directly handling students with special needs should be multiplied to provide a meaningful experience for the trainee teacher. Courses and training that are diverse in aspects of student management, classroom management and teaching knowledge will ensure the better future of inclusive education in this country when involving teachers who are not from the main path of special education.

## 5. Conclusion

This study is expected to inform about the teacher trainees' level of knowledge in handling students with special needs in the inclusive classroom. As these trainees have undergone three courses about inclusive education and special needs children, it would be interesting to see how these trainees perceive their level of knowledge in regard to special needs children and inclusive education.

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# HOW PARENTS OF CHILDREN WITH VISUAL IMPAIRMENT AND MULTIPLE DISABILITIES SUPPORT EACH OTHER DURING THIS TIME OF THE PANDEMIC IN THE PHILIPPINES

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## ABSTRACT

The global response to Coronavirus Disease 2019 (COVID-19) has changed daily life in many ways for many people. In the Philippines, schools remain closed and stay-at-home orders went into effect nationwide. The struggles faced by parents of children with visual impairment with or without multiple disabilities have amplified. Supporting the bond between parents or caregivers of these children is as important as ever. This discussion aims to answer the question about how parents of children with visual impairment with or without multiple disabilities from different parts of the Philippines, support each other as they learn to adapt and meet their children's needs as well as maintain their own mental health and relationships. We discussed the methods on how this support group, managed and run by parents themselves, build parent advocacy skills and self-efficacy skills as they cope during these times of the pandemic. We shared what activities were carried out despite the challenges this lockdown has brought and how these activities still allow families to regularly engage with each other and become present supporters of their children's development as they help them thrive and learn during this pandemic. We discussed the value of support groups and identify recommendations for support group design based on the experiences and feedback of the parents from the Philippines. Qualitative methods was used to examine the experiences of members of 1 parent-run support group. 30 parents were interviewed about the benefits and limitations of participation in support group. Information was collected by observing support group meetings, activities, and reviewing group documents. Interview, observation, and document data was analyzed to identify emerging themes. Results of the study indicated that the effects of belonging to a parent-led parent support group were substantial. Through these groups, parents gain increased skills, an increased sense of power and a sense of belonging. Participants are able to connect with each other and provide support and skills to deal with the day-to-day issues of raising a child with disabilities.

**Keywords:** parents of children with disabilities, children with multiple disabilities visual impairment (MDVI), support groups, empowerment, COVID-19

## 1. Introduction

Children with MDVI, are children who are blind and have additional disabilities. They may have physical challenges, speech and language problems, learning issues, and behavior problems. During the pandemic, these children are home all day without intervention and support. Many of them lose their routine, and they get bored and irritable. Parents struggle to keep up with the school modules sent home by the teachers and they are at a loss of how to teach their children.

There are no health services. Parents start to experience a constant fear of their own health, loss of a loved one, loss of finances, and also loss of relationships. Families members feel very isolated and many may be experiencing mental health problems. The struggles of raising a child with MDVI is very real, but this time, it is amplified.

In this paper, I discussed how Perkins International is supporting parents of children with multiple disabilities and visual impairment during this time of the pandemic in the Philippines. We will also discuss how parents are supporting each other. The activities that we are doing together to support families will be discussed as well as the outcomes of some of these activities. I shared with you some recommendations that was put to advice parents who want to start their own parent group or for those who want to support other parent groups. These recommendations came from our own experiences working together.

Perkins International's long-term partner in the Philippines, PAVIC is the one who made our work come to life. PAVIC stands for Parent Advocates for Visually Impaired Children. They are a group of 20 very active members, who reach out and recruit other parents of children with visual impairment. Now they have up to 800 members all around the country. As partners, our mission is very simple, it is to help parents become better parents for all children with visual impairment and for them to do whatever it takes to accomplish that. Qualitative methods was used to examine the experiences of members of 1 parent-run support group. 30 parents were interviewed about the benefits and limitations of participation in support group. Information was collected by observing support group meetings, activities, and reviewing group documents. Interview, observation, and document data was analyzed to identify emerging themes.

### **1.1 What Activities are Happening within the Parent Support Group During this Pandemic?**

First, we have weekly support group sessions, where parents of children from different age group, log on every Fridays to meet each other, share parenting tips, ask questions, share happy moments as well as heart breaks. These parents are cheerleaders for each other during the best times as well as the toughest moments of raising a child with disabilities.

Second, parents build each other's self-confidence and self-efficacy skills by transferring their knowledge to others parents. They deliver free training in braille, or abacus and other topics to other parents.

Third, parents reach out to other professionals to help support them in topics related to their child, like occupational therapy, or topics for themselves, like how to practice mindfulness and have strong mental health. We also create webinars for parents as well as obtain low cost or no cost telehealth consultation for children.

Four, Parents nurture each other by celebrating holidays together with dancing contests, children's talent shows and many fun games.

Fifth, the parents also organize fitness activities for children and their families where they can exercise together as a community even if it is done online.

Sixth, these parents are hosting their national parent congress online. It's an amazing gathering of parents from all over the country and even internationally to feel the power and voices of parents as they brainstorm together with their local government on how they can

continue to make changes to improve the quality of education and services for all children with visual impairment. It is a powerful event.

Aside from those mentioned above, parents are creating yoga classes online for blind children, they have very active online chat groups, international virtual team running relay, online fitness training with volunteer personal coaches, joined obstacle course races and outdoor experiences like mountain climbing and hiking. These are all amazing experiences for the whole family despite this time when life could be really tough and discouraging.

## **1.2 What is the Outcome of these Activities?**

There are many beautiful stories and outcome from these activities. Three outcomes are highlighted here.

First outcome, parents learn that it's never too early nor too late to teach their child. From the parent support group, parents feel more confident that they can teach their child academic skills as well as daily living skills.

Second outcome, because the children are home, and the parents learn to enjoy this moment with them, the children participate in functional and meaningful activities at home, with their parents, grandparents, siblings and cousins.

Third outcome, parents believe in their child's power. They get to know their child better and appreciate them. When parents believe that their child can learn, they are naturally empowered to advocate for their child's inclusion in the community and get the support they know is right for them.

## **1.3 What did Parents Say about the Parent Support Group that is Valuable for them?**

Parents also reported that the support group is valuable to them because...

- they are given the opportunity to give back to their community by sharing parenting tips and their stories to others.
- they are constantly reminded, that despite their busy life, they need to find time to devote to their child with disabilities.
- their children get to join activities with other children.
- they also get to receive consultation from professionals like physical therapists, occupational therapists, special educators, pediatricians, etc.
- One common thing that many parents shared is that listening to other parents' stories make them feel stronger and not alone.

## **1.4 What Recommendations and Suggestions are there to help form and Maintain Parent Support Groups?**

As many of us know, getting people together is easy but keeping them together is not. Below are some recommendations that we have put together that can help create and maintain parent support groups.

1. Have a clear mission and purpose. A parent support group need to create their own mission and purpose for being together. This mission must be shared by all members of the group. It should be written out clearly, and often discussed as a group.
2. Build up from what works. Instead of planning huge things that require having to gather much resources from elsewhere, make an inventory of what you have. Use your resources and build up from there. Start from a place strength and available resource. Use internal resources instead of hiring someone else. For example, if Daddy Leo is a nutritionist in a local clinic. You can invite him to share his knowledge about proper nutrition for other families, instead of hiring someone from outside.
3. Stay in the “solution” frame. Parents often come exhausted, and they have difficulties with their kids’ and sometimes, conversations can be very heavy. The facilitators of parent groups need to know how to balance a time of when parents can share their burdens, but also to keep the group in a positive mindset. Always bring the group into thinking of solutions, alternate approaches or way of thinking together.
4. Understanding that parents are busy people. find a regular time for meetings that works for parents, perhaps after dinner, or when they put the children to bed.
5. Be very inclusive. Parents come from different walks of lives, different financial status, different educational background, male, female, etc.... As a leader, you need to make it loud and very clear, and be very inviting. Frequently reach out to parents to let them know how they BELONG to this group. That this group is for them and it's got a seat with their name on it. Check in with parents as their situations always change. Clearly describe who this group is for and clearly point it out that this group is for them.
6. Build your network. You need to collaborate with your child’s teachers, school leaders, government leaders, health professionals, community health workers, neighbors, co-parents, relatives, family friends, church friends and everyone who can support you and your child. Go ahead and let them know your child, educate the community about your child and reach out to others openly as much as you think is best for you and your family.

## 2. Conclusion

It is an honour for us at Perkins International to be able to support and work together with these parents during the pandemic. Supporting parents of children with multiple disabilities and visual impairment has never been more vital than during this time of the pandemic when no appropriate support are being provide to the children and their families during this lockdown. The challenges that these families face day to day in raising a child with severe disabilities are amplified during this time. Many children are showing signs of regression and parents are showing signs of mental and emotional stress. This paper is able to show that when parents are supported, their confidence to engage with their children improves, thus giving children the opportunity to be an active participant in functional and meaningful activities at home. Parents get to know their children’s abilities more and form a strong belief that their child can learn. When parents are empowered, they learn to advocate for what their children need to reach their fullest potential.

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## ADDRESSING THE NEEDS FOR TEACHERS' PROFESSIONAL DEVELOPMENT AMIDST THE COVID-19 PANDEMIC

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### ABSTRACT

Learners with disabilities are among the most impacted group of children if not the most vulnerable compared to their peers of the same age. They are exposed to the risk of being left behind in society, employment as well as their participation in education. Shortages of trained teachers and school personnel in implementing the concept of Inclusive Education in many countries have led to the increase challenges and delay especially in preparing learners with disabilities to be accepted and participate in the real world. Envisioning and responding towards achieving United Nation Sustainable Development Goals (SDGs) specifically SDG No.4 “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”, SEAMEO 7 Priority Areas No. 2 “Addressing Barriers to Inclusion” and the previous statements and declaration regarding Inclusive Education, SEAMEO SEN has always aligned its roles to be at the forefront of Disability-Inclusive education advocacies, teachers’ competencies development, quality content creations and community awareness. Responding to these commitments, targeted researches were carried out to understand, learn and provide recommendations addressing to the needs of learners with disabilities. Training needs analysis and impactful training courses, workshops, seminars and conferences were also held in directing and harnessing teachers’ potential. This paper explicates SEAMEO SEN responses in promoting and enhancing the quality of special educational needs practices among its member countries including its responses during the COVID-19 pandemic situation. This paper further explores the programmes and activities conducted by SEAMEO SEN and how the centre adapts to respond to the current challenges.

**Keywords:** teacher training, COVID-19, SEAMEO SEN, quality education

### 1. Introduction

Learners with disabilities generally refer to individuals who have difficulties acquiring skills which may lead them to challenges and hinder participation in the real world after school. Even without any crisis, learners with disabilities were considered a marginalized and stigmatized group, among the most challenging group of learners across the educational settings (UNICEF, 2020). In most traditional learning settings, learners with disabilities will be supported by a group of certified and trained teachers together with the support of teaching materials and learning aids. These learners being in the category of learners which required among the highest learning support from teachers, they are facing the risk of being left out in education. Learners with disability is a recognized individual under the United Nation Convention on the Right of Persons with Disabilities (UNCRPD) which was entered into force in 2008. This agreement sets that each participating countries need to make sure that every disabled persons have the same rights as any other citizen including in education (United Nation, 2021).

Teaching is a physically and mentally challenging occupation, as teachers need to balance their work in school and commitment. Being a teacher for learners with disabilities, teachers always face a great challenge to find ways to deliver educational support to their learners, each with a particular set of disabilities and needs. Many if not all learners with disabilities, needed hands-on materials and in-person interaction to get them engaged in any learning process. Additionally, education for learners with disabilities tends to be sensory and hands-on which requires teachers to be competent.

United Nation in its agenda for the 2030 Sustainable Development Goals (SDG) has outlined a global blueprint encompasses 17 action agendas targeted for the people of the world and the planet. Among the 17 action agendas is SDG No. 4 focuses to Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. A sub-category of the agenda is SDG No. 4.5 also highlighted that by 2030, equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations must be addressed by its member countries (United Nation, 2021).

The Southeast Asian Ministers of Education Organization (SEAMEO) in aligning all its regional centres and networks has put forward the SEAMEO 7 Priority Areas with seven specific actions on education, science and culture. On a specific note, SEAMEO has stated in its Priority Areas No. 2 “Addressing Barriers to Inclusion” on the importance of closing the educational gaps for learners with disabilities.

## 1.1 SEAMEO SEN As A Regional Organization

Under the umbrella and the administration of The Southeast Asian Ministers of Education Organization (SEAMEO), SEAMEO Regional Centre for Special Educational Needs (SEAMEO SEN) is a centre that has been established to be a regional centre of excellence in the area of the education for learners with disabilities. Understanding more about SEAMEO:

SEAMEO is a regional intergovernmental organization established in 1965 among governments of Southeast Asian countries to promote regional cooperation in education, science and culture in the region. As an organization that has continued to nurture human capacities and explored the peoples' fullest potential, the SEAMEO maintains its work and aspirations for development with peoples of the region to make lives better in quality and equity in education, preventive health education, culture and tradition, information and communication technology, languages, poverty alleviation and agriculture and natural resources. The organisation's highest policy-making body is the SEAMEO Council, which comprises the 11 Southeast Asian education ministers. The SEAMEO Secretariat is located in Bangkok, Thailand (SEAMEO Secretariat, 2020).

SEAMEO SEN is a centre that expressed its commitment to improve the lives of learners with disabilities by increasing the quality teaching and learning for Special Education in the Southeast Asia region. The centre main role is to enhance the quality of special educational needs practices within the SEAMEO Member Countries through targeted training courses, seminars, workshop and conferences to special education and inclusive teachers. The centre also conducted research in the areas of learning and supporting learners with visual disability, hearing disability, speech disability, physical disability, learning difficulties and multiple disabilities (SEAMEO SEN, 2021).

The training concept applied by SEAMEO SEN is based on best practices theme. Given the focus area of special educational needs and a broad range of expertise, skills, experience, exposure and nature of the teachers and students, best practice concept fits the current scenario and educational agenda. The participants of these best practice courses will act as multipliers which will share and disseminate the course content among their peer

teachers of learners with disabilities at a school, district or national level. SEAMEO SEN's Training and Consultation Division and Research and Innovation Division consists of a head of division and Programme Associates who design and coordinate training programmes and researches based on the centre's Strategic Plan with a thematic content of the courses conducted.

## **1.2 Best Practices Theme**

Best practice theme is seen to be one of the effective ways in implementing teaching and learning especially for children. The same may also applies to learners with disabilities where in most learning situation, they needed extra attention from a teacher. In the case of a teacher, applying a specific best practice in classes can in a way motivate them as well as ensure maximum engagement with their learners.

A best practice may assist teachers in developing strategies and resources especially for learners with disabilities, enhance teachers' competency in catering for learners' diversity, presenting teachers the effective measures and strategies to accommodate learners with disabilities and optimizing the pedagogical support system approach for learners with disabilities (Public Schools of North Carolina, Department of Public Instruction: Elementary Division: 2006).

## **1.3 Implementation of Inclusive and Special Education**

In the context of Malaysian education system, there are three types of Special Education programmes conducted by the Ministry of Education (MOE) Malaysia. Learners with disabilities with of high functionality will be placed in an inclusive program together with their typical mainstream learners and will learn the Primary School Standard Curriculum (KSSR) and the Secondary School Standard Curriculum (KSSM) (Surat Pekeliling Ikhtisas, 2016). The Special Education Integration Program (PPKI) is provided by MOE Malaysia in helping learners with disabilities who face cognitive and behavioural challenges in learning. PPKI adopts a learning integration model where learning take place within the same school compound of a mainstream school. Although learners with disabilities are placed in specific classes, this model allows a semi -inclusive system to be implemented i.e. sharing of common areas such as canteens and fields, which allows interaction between typical mainstream students and learners with disabilities to take place. Apart from the inclusive and PPKI programme, Primary Special Education School, Secondary Special Education School and Vocational Special Education School are also provided for specific learning programmes and to cater to learners with disabilities specific needs including learners with hearing and visual impairment.

As for the remaining 10 SEAMEO Member Countries, special education programmes are implemented in either fully inclusive; a mix of inclusive and integration model; or a combination of inclusive, integration model and special education schools. Non-Governmental Organizations (NGO) also contributed in some countries in supporting programmes especially in catering to children with low functioning abilities and early childhood care education services.

## 2. SEAMEO SEN Programme and Activities

Since its operation in May 2013, SEAMEO SEN has conducted training programmes and researches based on its 1<sup>st</sup> Five-Year Development Plan starting from Fiscal Year (FY) 2013/2014 to Fiscal Year (FY) 2017/2018 and 2<sup>nd</sup> Five-Year Development Plan from Fiscal Year (FY) 2018/2019 to Fiscal Year (FY) 2022/2023. A fiscal year runs from July to Jun completing 12 months period. Each development plan is proposed for the period of five years with yearly review and approved amendments during its Governing Board Meeting. These programmes and activities were planned and proposed through a series of discussion and workshop between SEAMEO SEN personnel, representative of education officer from Ministries of Education and universities lecturers with the anticipation of issues and scenario in special education for the next five years. The programmes and activities that were conducted for the period of five years (FY 2016/2017 to FY 2020/21) together with number of participants are extracted from the Working Papers of SEAMEO SEN Governing Board Meeting as well as documents from the Training and Consultation Division and Research and Innovation Division and further listed in table 1.

### 2.1 Collaborative Efforts

In keeping the programmes and activities up-to-date, most of the activities will focus on best practices and involve subject matter experts. SEAMEO SEN also works collaboratively with local and international agencies and the Ministries of Education of the 11 SEAMEO Member Countries to conduct programmes and activities relating to the enhancing the capacities of special education teachers in delivering educational services and optimizing the potential of their learners with disabilities. Researches were conducted in collaboration with partners i.e. universities, international organization in ensuring that the research includes elements of innovation, current issues as well as presenting high impact. Emstad. A. B and Sandvik L. V. (2020) highlighted that collaborative partnerships sometimes may have an individual purpose but usually consist of common goals that cannot be reached by either party independently, therefore a collaborative effort is made.

*Table 1: SEAMEO SEN programmes and activities (FY 2016/2017 to FY 2020/2021)*

<b>Fiscal Year</b>	<b>Training Programmes</b>	<b>Research Programmes</b>
FY 2016/2017	<ol style="list-style-type: none"> <li>1. Best Practices in Teaching and Learning: Research in Special Education Needs</li> <li>2. Unified English Braille (UEB) Untuk Guru-Guru Sabah Parent Support Training Net: Pilot Project-Planning Phase (PST Net)</li> <li>3. Professional Development for SEN Education Managers on Current Trends in Special Education</li> <li>4. Non-Visual Dekstop Access (NVDA Workshop) Group 1</li> <li>5. Non-Visual Dekstop Access (NVDA Workshop) Group 2</li> <li>6. Unified English Braille (UEB) for Malaysian Teachers (Sabah)</li> <li>7. Hala Tuju Pintar Cerdas Dan Berbakat di Malaysia</li> <li>8. Unified English Braille (UEB) for Malaysian Teachers (Sarawak)</li> <li>9. 'Sign to Speak' Workshop</li> <li>10. Amendments Workshop on Bahasa Malaysia Braille</li> </ol>	<ol style="list-style-type: none"> <li>1. The Effect of Kod Tangan Bahasa Malaysia and Bahasa Isyarat Malaysia on Student Achievement Among Deaf Children</li> <li>2. The Implementation of Bahasa Isyarat Malaysia and Kod Tangan Bahasa Malaysia Teaching Tool into Android and iPad/iPhone Application</li> <li>3. Parental Mediation on Children's Television Viewing in the Homes of Blind or Low Vision Children in Malaysia</li> </ol>
FY 2017/2018	<ol style="list-style-type: none"> <li>1. Introduction to Special Education for Pupils Management Assistant in Malaysia (PPM)</li> <li>2. Best Practices in Teaching and Learning: Storytelling for Special Needs Children</li> <li>3. Technical and Vocational Education Training for SEN Teachers: Urban Agriculture for SEN Children</li> <li>4. Identification and Accommodating Children with Gifted and Talented course for BRAC teachers of Bangladesh</li> <li>5. Best Practices in Teaching and Learning: Social And Motor Skills for Special Education Needs</li> <li>6. Job Coach for Students with Special Education Needs</li> <li>7. Leadership and Professionalism Course for Senior Special Education Teachers</li> <li>8. Art Therapy for Special Education: Cohort 1</li> <li>9. Workshop on Malaysia Braille Code Amendments</li> <li>10. Special Education Courses for Indonesian Special Education Teachers</li> <li>11. Art Therapy for Special Education: Cohort 2</li> <li>12. Holistic Training Workshop on Inclusive &amp; Train of Trainer Course</li> <li>13. Art Therapy for Special Education: Cohort 3</li> </ol>	<ol style="list-style-type: none"> <li>1. 2<sup>nd</sup> International Conference On Special Education (ICSE) 2017, Sarawak, Malaysia</li> <li>2. 1<sup>st</sup> International Seminar Workshop in Special Education "The Changing of Landscape of Special Education"</li> <li>3. The 2018 Chang Pha and 8th ICSAR Joint International Conference UKM-SEAMEO SEN-DAEGU University</li> <li>4. The Use of BrailleTax to Increase the Mastery of Braille Code Writing Concept using Slate and Stylus</li> <li>5. The Effect of Kod Tangan Bahasa Malaysia and Bahasa Isyarat Malaysia on Student Achievement Among Deaf Children (continuation)</li> <li>6. The Implementation of Bahasa Isyarat Malaysia and Kod Tangan Bahasa Malaysia Teaching Tool into Android and iPad/iPhone Application (continue)</li> <li>7. Seminar on Best Practices in Special Education</li> <li>8. Parental Mediation on Children's Television Viewing in the Homes of Blind or Low Vision Children in Malaysia (continuation)</li> </ol>

FY 2018/2019	<ol style="list-style-type: none"> <li>1. Special Education Training for Myanmar Teachers: Visual Impairment and Hearing Impairment</li> <li>2. Best Practices in Teaching and Learning in Special Education: Post-School Career Transition Programme for Individual with Special Needs</li> <li>3. Technical and Vocational Education Training for SEN Teachers: Urban Agriculture for SEN Children (Vietnam Teachers)</li> <li>4. Therapy for Special Education Needs: Cohort 1</li> <li>5. Best Practices in Teaching and Learning: Inclusive Education</li> <li>6. Best Practices in Teaching and Learning: Sexuality Education for Children with Special Needs</li> <li>7. In-Service Training for Teachers and Parents of Children with Autism</li> <li>8. Training of Teacher Trainer: Short Course Programme for 20 Special Needs Educators</li> <li>9. Occupational Therapy Training for Trainer</li> <li>10. Emergency Response Plan and First Aid Training for Children with Special Needs</li> </ol>	<ol style="list-style-type: none"> <li>1. The Use of BrailleTax to Increase the Mastery of Braille Code Writing Concept using Slate and Stylus. (continuation)</li> <li>2. The Effect of Kod Tangan Bahasa Malaysia and Bahasa Isyarat Malaysia on Student Achievement Among Deaf Children (continuation)</li> <li>3. The Implementation of Bahasa Isyarat Malaysia and Kod Tangan Bahasa Malaysia Teaching Tool into Android and iPad/iPhone Application (continuation)</li> <li>4. Design, Development and Testing of Vi-Per Games for Autism Diagnostic Tools</li> <li>5. Teacher Awareness Level On The Diversity Of Learners In The Classroom</li> <li>6. Career Transition Programme and the Readiness of Special Education Teachers on its Implementation</li> <li>7. International Conference on Special Education in Southeast Asia Region 2019 (ICSAR) UKM-SEAMEO SEN</li> </ol>
FY 2019/2020	<ol style="list-style-type: none"> <li>1. Best Practices in Teaching and Learning: Teaching Children with Down Syndrome</li> <li>2. Special Education Training (Visual Impairment, Hearing Impairment, Autism): Lao PDR</li> <li>3. Best Practices in Teaching and Learning: Occupational Therapy for Special Educational Needs</li> <li>4. Best Practices in Teaching and Learning: Inclusive Education for Teachers</li> <li>5. Best Practices in Teaching and Learning: Inclusive Education for Teachers (Malaysia)</li> <li>6. Best Practices in Teaching and Learning: Deafblind Education for Special Teachers</li> <li>7. Best Practices in Teaching and Learning: Human Sexuality Education for Students with Special Educational Needs</li> <li>8. <b>[Online]</b> Kesedaran Epilepsi Dalam Kalangan Guru</li> </ol>	<ol style="list-style-type: none"> <li>1. Advocating Proper Nutrition in Special Education Schools for Children with ADHD and Down Syndrome in Southeast Asia</li> <li>2. Teacher Awareness Level On The Diversity Of Learners In The Classroom (continuation)</li> <li>3. The Implementation of Zero Reject Policy and its Implications Towards Special Needs Children</li> <li>4. 3<sup>rd</sup> International Conference on Special Education (2019) Surabaya, Indonesia</li> <li>5. Seminar on Special Education</li> <li>6. Seminar Pendidikan Khas: Ke Arah Melestarikan Pendidikan Bagi MBK Deafblind”</li> </ol>
FY 2020/2021	<ol style="list-style-type: none"> <li>1. <b>[Online Webinar]</b> Kelangsungan Pendidikan Khas dalam Norma Baharu</li> <li>2. <b>[Online Webinar]</b> New Normal for Special Education</li> <li>3. <b>[Online Webinar]</b> Closing the Educational Gaps for Persons with Disabilities</li> <li>4. Behavior Modification for Children with SEN</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>[Online Data Collection]</b> Advocating Proper Nutrition in Special Education Schools for Children with ADHD and Down Syndrome in Southeast Asia (continuation)</li> <li>2. <b>[Online Data Collection]</b> The Implementation of Zero Reject Policy and its Implications Towards</li> </ol>

	<p>5. [Online Webinar] Pendekatan Pengajaran dan Pembelajaran bagi Murid Berkeperluan Khas (MBK) Dalam Norma Baharu</p> <p>6. Emergency Response Plan and First Aid Training for Children with Special Educational Needs</p> <p>7. Inclusive Education for Administrators</p> <p>8. [Online] Behavior Modification for Children with Special Educational Needs</p> <p>9. [Online] Screening and Early Intervention for Children with Special Needs</p> <p>10. [Online] Stress Management for SEN Educators</p> <p>11. [Online] Best Practices Teaching and Learning: Speech Therapy for Special Educational Needs</p> <p>12. [Online] Best Practices Teaching and Learning: Inclusive Education for Teachers</p> <p>13. [Online] Speech Therapy for Special Educational Needs Children</p> <p>14. [Online] Best Practices Teaching and Learning: Sign Language for Inclusive Teachers</p> <p>15. [Online] Best Practices Teaching and Learning: Epilepsy Awareness Among School Teachers</p> <p>16. [Online] Best Practices Teaching and Learning: Sexuality Education for Children with Special Educational Needs</p> <p>17. [Online] Regional In-Service Training "Curricula Adaptation for Disadvantaged Individuals" (TVET Trainers)</p> <p>18. <b>Special Project:</b> UNESCO GPE SEAMEO "SPED Online Teacher Training Module Development</p>	<p>Special Needs Children (continuation)</p> <p>3. [Online Data Collection] Healthy School Canteen Best Practices Reference Book</p> <p>4. [Online Data Collection] Learning Mathematics for Students with Special Needs</p> <p>5. [Online Workshop] Regional Workshop on "Enhancing Inclusive and Equitable Quality Education in Southeast Asia through Innovative Educational Leadership and Management</p> <p>6. [Online] Academic Writing for Research (Special Education and Inclusive)</p>
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Source: SEAMEO SEN Governing Board Meeting Working Papers, SEAMEO SEN Training and Consultation Division, SEAMEO SEN Research and Innovation Division

Table 2: SEAMEO SEN Participants (2016 to 2021)

Year	No. of Participants
2016	224
2017	741
2018	420
2019	353
2020	302
2021 (up to May)	240

Source: SEAMEO SEN Training and Consultation Division, SEAMEO SEN Research and Innovation Division

No. of activities using online approach in FY 2020/2021: **14 training courses, 6 research projects**

Yearly average participants trained (2016 to 2020): **408 participants**

## 2.2 Teaching and Learning Challenges During Covid-19 Pandemic

It is estimated 2.6 billion people around the world are in some kind of lockdown (E. V. Hoof, 2020) placing 1.6 billion learners in 190 countries or 94% of the world's student population affected by the closure of schools and educational institutions during the peak of the pandemic outbreak. As of August 2020, it is estimated at least a remaining of 1 billion learners are still confined at home as more than 100 countries still enforcing school closures (R. Amelan, 2020).

The present outbreak of COVID-19 pandemic, impacting most countries throughout the world has left these learners with disabilities severely affected if not vulnerable, compared to their typical peers of the same age. Learners with disabilities are among those most dependent heavily on face-to-face services including health, education and protection, which in most affected countries, these services may have been suspended as part of physical distancing and lockdown measures.

In most traditional learning settings, learners with disabilities will be supported by a group of certified and trained teachers together with the support of teaching materials and learning aids. Modernization of education has opened up a new paradigm in the delivery of education to learners remotely, anywhere and anytime from in-person learning to online learning, using information and communication technology (Evans et. Al., 2020). Starting from 2020 onwards, SEAMEO SEN has ventured into 22 online courses, programmes and projects to respond to the pandemic.

Teacher education has also impacted significantly due to the pandemic. Traditional face-to-face session has either been prohibited or impose a significant risk of spreading the coronavirus. The call for shift from traditional face-to-face learning towards online course delivery in teacher education has gained increased momentum in recent years (Karchmer-Klein & Pytash, 2020). Despite the significant success, teachers learning condition factors such as poor connectivity, rural location and availability of devices need to be taken into considerations (Garbe A., et. al., 2020). In these scenarios, teachers may not be able to participate effectively in distance online learning.

In most face-to-face programmes, numbers of participation may be limited to its locality or even to the extent of funding provided taking into considerations of attendee's meals, travelling and accommodation (Baczek, M. et.al., 2021). Whereas in online learning model, greater number of participations is possible including extensive reach beyond physical borders. In the first 5 months of 2021 alone, SEAMEO SEN has recorded attendance of 240 (59%) participant compared to the average of 408 participants recorded yearly. If connectivity is available, the online course shall benefit its targeted audience.

## 3. Conclusion

In responding to the United Nation SDG No.4 "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all", SEAMEO 7 Priority Areas No. 2 "Addressing Barriers to Inclusion" and other statements and declaration promoting the education for individual with disabilities, SEAMEO SEN has always strategize its programmes and activities to address to teachers skills improvements as well as equipping them with best practices in promoting quality education for learners with disabilities.

As impact due to COVID-19 pandemic outbreaks and control measures, schools, colleges, universities and training centres around the globe are struggling to plan for blended and online courses for teachers' professional development. SEAMEO SEN has taken a big leap in converting most of its traditional courses as well as moving all its training and

research programmes activities to be available online starting 2020 onwards. As presented in Table 1, 14 training programmes and 6 research projects has implemented via online approach. In providing these services, there are significant challenges that need to be addressed especially in ensuring stable connectivity, availability of hardware, maintaining active participation and delivering hands-on skills. Despite these challenges, through this new move from face-to-face to online learning, the centres manage to cover a bigger reach and participation of teachers in its courses. As improvement to the existing online model, the centre may need to experiment and source for supporting methods to allow more flexibility in delivering its courses to ensure teacher's greater understanding.

A further study is recommended to be carried out to analyze the factors that hinders teacher's active participation and understanding in an online course. Having a learning target is one of the important factors that ensured learners remained motivated (Schunk, 2012). Goal setting means establishing an objective to serve as an individual's aim of action. The study could also provide suggestion in introducing supporting learning methods in addressing the matters.

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# INCLUSIVE EDUCATION IN MALAYSIA'S PRIMARY SCHOOLS: THE TEACHERS VIEW

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## ABSTRACT

Malaysia, like many countries in the world, is recognising inclusive education and has pledged a commitment in the 2013-2025 Malaysia Education Blueprint. However, the journey of providing a quality and inclusive education for all is complex, leading to inconsistency in practice. The Malaysia context with its diverse ethnicity, language, culture, religion besides the education and school systems have implications for the promotion and implementation of inclusive education. This study explores and highlights teachers' relevant yet overlooked perspectives on inclusion and inclusive education in the period of educational system reformation. By focusing on teachers' perspectives, the research aims to provide a better understanding of the promotion of inclusive education in Malaysia's primary schools. This interpretative, exploratory, qualitative study employed multiple methods to obtain rich and in-depth data. Participants are purposely sampled from five national primary schools: three schools with the Special Education Integration Programme (SEIP) and two schools without SEIP. They were 76 participants; 25 teachers were interviewed individually and 51 participated in eight focus-group interviews. Ten classroom observations were conducted prior to the individual interviews. The data were analysed thematically by the inductive approach, using NVivo software. Theories of inclusive education were adopted to analyse teachers' responses. The results show that teachers view inclusive education as a challenging concept to implement. Such views are influenced by multiple factors, such as miscommunication between departments, sociocultural attitudes to disability, educational systems, inefficient utilisation of resources, insufficient facilities, and teachers' lack of knowledge and skills about special education and pupils with special educational needs (SEN). The findings will be of value to those responsible for planning and developing the policy and programmes regarding inclusive education, special education, and specifically educational systems in moving towards inclusive systems and schools.

**Keywords:** Inclusion, Inclusive education

## 1. Introduction

Malaysia highlights its commitment to quality and inclusive education through the 'Malaysia Education Blueprint 2013-2025' (MOE, 2013b). The Ministry of Education Malaysia (MOE) targets that "75% of students with special needs enrolled in inclusive programmes by 2025" (MOE, 2013b p. 4-17). This journey to improve the education system began during the early stage of post-colonialism. To enable the transformation of the educational system, the

government has put forward effort, energy, and initiatives towards its aspirations of an economically advanced inclusive society (EPU, 2015) in the 21<sup>st</sup> century. The educational systems, policies, laws as well as the various context of Malaysia as a multi-ethnic, multicultural and multi-lingual nation, however, bring challenges. In addition, the successful promotion of inclusive education also requires a significant role of the teachers, the practitioners.

Therefore, this study investigates in-service teachers' views about inclusive education to better understand their perceptions and so inform the strategies that can bring about the transformation.

## 2. Malaysia's Context

As a result of colonisation, Malaysia has become a multi-ethnic, multicultural and multilingual country. Since then, the country's education system has responded to building ethnic unity, identity, equal opportunity, lifelong education, quality culture and international competitiveness. The MOE emphasises that the system focuses on developing pupils holistically, with a strong sense of national identity (MOE, 2013b). Through the Malaysia Education Blueprint 2013–2025 (MOE, 2013b), the MOE outlines 11 shifts for the educational system transformation to enable it to keep abreast of rising international standards. These actions involve system and student aspirations with clear performance benchmarks to assess reformation progress. There are five system aspirations: access, quality, equity, unity, and efficiency. The student aspirations are knowledge, bilingual proficiency, thinking skills, ethics and spirituality, leadership skills and national identity (MOE, 2012).

### 2.1 Malaysia Primary School System

Malaysia provides preschool, primary, secondary, post-secondary, special education, religious teaching, private and technical education (MOE, 2012). Education is accessible from free multilingual public schools, private schools or through home schooling. The elements of access involve obtaining education at school and remaining to achieve a minimum level of schooling (MOE, 2013b). The Education Act 1996 stipulates the adoption of the standard national curriculum by all schools, including pre- and private schools, specifying the knowledge, skills and values to be acquired by pupils by the end of their schooling (MOE, 2011). Pupils sat the Primary School Achievement Test (Ujian Penilaian Sekolah Rendah, UPSR) at the end of Year 6 since 1988 until the recent abolishment in April 2021.

There are 20 schooling options at primary and secondary levels (MOE, 2012). The availability of choices is due to the school development during the British colonialism with the 'divide and rule policy' which has resulted in Malay, English, Chinese, Tamil and religious Madrasah types of school (Othman et al., 2011). The dualism system is influenced by the political, economic, sociocultural, and religious factors. The national education system was proposed in the 1950s to develop unity among ethnicities, hence the framing of National Education Philosophy (NEP) (Ibrahim, 2007). Therefore, the Chinese and Tamil vernacular schools were preserved and maintained mother tongue and cultural schooling, providing that they used the national curriculum (Othman et al., 2011). Currently, there are three main types of schools: National schools (Sekolah Kebangsaan, SK) and National-type schools (Sekolah Jenis Kebangsaan): either Chinese (SJKC) or Tamil (SJKT) (MOE, 2012). Each is defined by their medium of instruction. Malay is the primary language of instruction at SK, while Chinese is used at SJKC and Tamil at SJKT. These three types of schools jointly

account for almost 99% of total primary enrolments. There are also a variety of niche school choices, including religious and special education schools, private schools, international schools, and independent Chinese schools. Consequently, these have resulted in complex education system that has implications for a quality education and inclusive society (Salleh & Woollard, 2019).

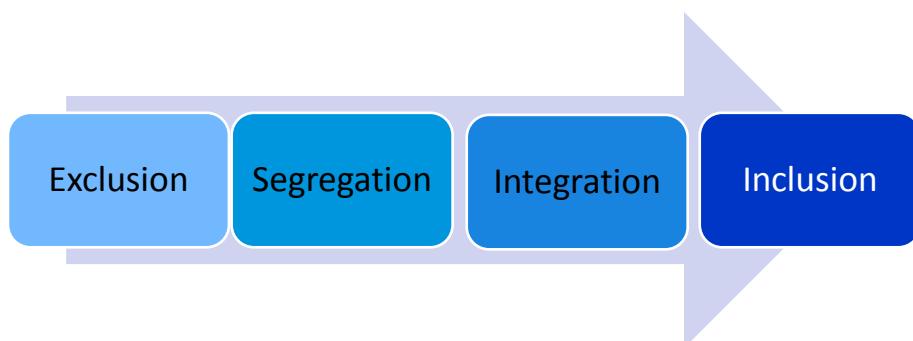
## 2.2 Education and Nation Building

The government continuous effort and initiatives in the face of pressing demands from various interest groups to promote nation building via education is undeniable. However, after more than half a century, the government still struggles to promote nation building and enhance national unity via a unified education system (Khader, 2012). Programmes such as the 'Vision School' (Sekolah Wawasan) and RIMUP have been implemented. Vision School is a concept school, introduced in 1995, to cultivate racial unity through integrated schools of all three types – SK, SJKC and SJKT together (MCM, 2018) whereby the three share the facilities yet maintain separate administrative bodies and teachers. The 2006 Student Integration Plan for Unity (Rancangan Integrasi Murid Untuk Perpaduan, RIMUP) was a reintroduction of a similar programme halted in 1985 (MOE, 2012). Nevertheless, the programmes successiveness to promote inclusiveness and to foster interaction and understanding among pupils of the various schools is questionable.

## 3. Inclusive Education

The concept of inclusive education is related to the field of special education and disability (Salleh & Woollard, 2019). This concept is continuously debated which resulted in the evolution of the concept of inclusion (Opertti et al., 2009). Literature reviews highlight the significance of the historical context (M. Ainscow, 2000; Armstrong et al., 2011; Clough & Corbett, 2000; Gibson, 2015) to its theoretical and empirical transformation (Opertti et al., 2014). Figure 1 shows the development of the concept although a non-linear process (Rosmalily & Woollard, 2019; Salleh & Woollard, 2019).

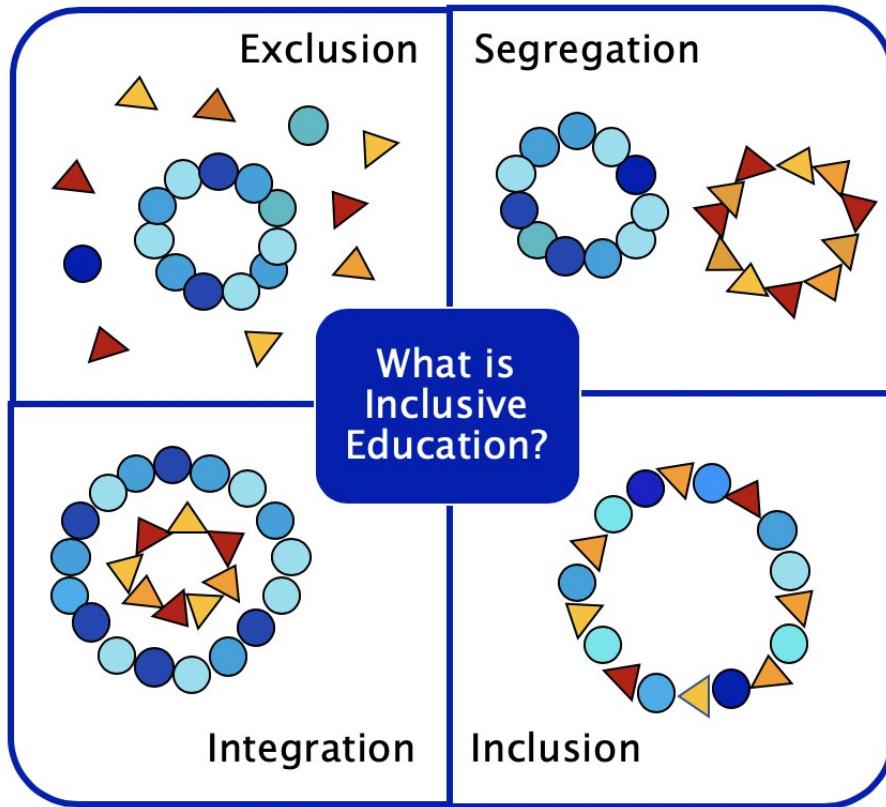
*Figure 1: The development of inclusive education*



Source: (Rosmalily & Woollard, 2019; Salleh & Woollard, 2019)

Figure 2 is a visual representation of our understanding of the terminology

*Figure 2: What is inclusive education?*



Source: (Rosmalily, 2018)

The blue hue colours represent typical learners, while the yellow hues represent the people with SEN. The different shapes and shades denote that everyone is unique. **Exclusion**, as seen in the diagram, is the denial of access to the mainstream. Messiou (2006) highlights that other pupils could also be at risk or vulnerable to exclusion and marginalisation, not only the pupils with SEN. **Segregation** emphasises on SEN, focuses on deficits, and is supported by the medical model of disability (Clough & Corbett, 2000; Winter & O'Raw, 2010). **Integration** is the placement of pupils with SEN in existing mainstream education/schools, providing that they fulfil the necessary requirements (Farrell et al., 2004) is based on assimilation model (Winter & O'Raw, 2010). **Inclusion** however, means all pupils must be supported and facilitated to prosper (Farrell, 2000). Inclusion is not just about placement but full participation of pupils (Jorgensen & Lambert, 2012) to experience all aspects of school life and obtain the quality education to fulfil their potential. Inclusion therefore, involves educational equity and equality (Allan, 2000), for all pupils irrespective of difference (Rosmalily & Woppard, 2019; Salleh & Woppard, 2019). From this wider perspective, transforming the educational system (Allan, 2000) and emphasising on inclusive practice (Ainscow, 2014; Farrell, 2000) are vital for inclusive education.

The recent Incheon Declaration for 'Education 2030: Towards inclusive and equitable quality' reaffirms the commitment to make the necessary changes in worldwide policies (UNESCO, 2015). This certainly requires inclusive values being demonstrated by all stakeholders. The process is certainly demanding, requiring changing ways of thinking (Ainscow, 2005), roles of organisational cultures and leadership (Ainscow & Sandill, 2010;

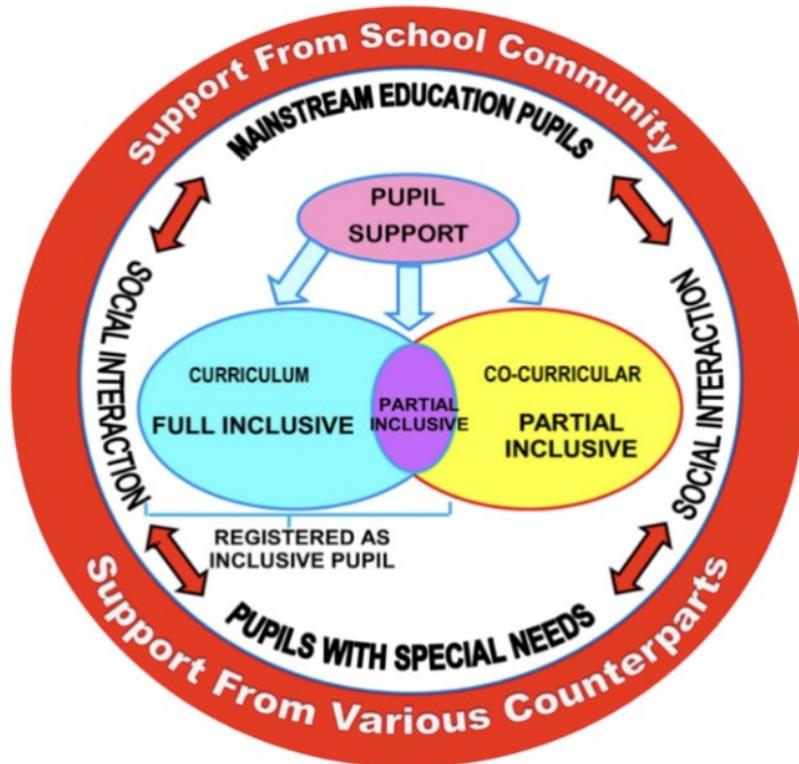
Booth & Ainscow, 2011); requiring inclusive values in policy formulation (Booth & Ainscow, 2002; UNESCO, 2015); implementing practices at all levels (Ryan, 2011); and accepting the core pedagogical of transformability to enhance learning capacity of pupils of the co-agency and everybody (Hart & Drummond, 2014).

### 3.1 Inclusive Education in Malaysia

Inclusive education was introduced in the Education Act 1996 as an extension of educational provision for children with special needs (Jelas & Mohd Ali, 2014). It is a continuation of the opportunity for pupils with educational needs to be educated alongside mainstream pupils, apart from the provision of special education. However, the amended Education Act 1996 (1998) did not explicitly identify the inclusion of children with disabilities.

Inclusive education is defined by the Ministry as ‘mainstream schools that integrate one to five pupils with special needs into mainstream classes’ (MOE, 2013b, p. 4-17). There are two approaches taken by the inclusive education programme involving pupils with SEN in SEIPs (MOE, 2016): the first is ‘full inclusion’, whereby pupils with SEN learn full time with mainstream pupils in all subjects, either based on the national curriculum or its modified version, with or without support services. The second is ‘partial inclusion’, in which pupils with SEN learn certain academic subjects or are involved in co-academic or co-curricular activities alongside mainstream pupils, also referred to as a ‘pull-out’ programme. Participation in co-academic and co-curricular activities is based on the pupils’ potential, talent, and ability. There are criteria for pupils’ selection, their placement, and eligibility to sit a national examination, as summarised in Figure 3.

Figure 3: The concept of inclusive education in Malaysia



Source: (translated (MOE, 2013a, p. 4))

Jelas and Mohd Ali (2014) argue that the inclusion of pupils with SEN is consistent with the 1980s integration model. This practice is based on an exclusionary process grounded in the legitimised paradigm of an ‘ideal’ concept of inclusive education (Jelas & Mohd Ali, 2014). The notion of inclusive education also focuses on pupils with SEN which is a narrow definition as described by (Booth & Ainscow, 2002). It is not a total inclusion without conditions as stated in the national report of Malaysia (MOE, 2004).

The current development of inclusive education could be observed in the government’s vision: “75% of students with special needs enrolled in inclusive programmes by 2025” as highlighted in the Blueprint (MOE, 2013b).

## 4. Methodology

This interpretative qualitative research employs multiple methods to obtain rich and in-depth data. The methods are 60-minute semi-structured individual interviews and 90-minutes focus group interviews. There are also 10 overt non-participant classroom observations before the individual interviews that help the interviewer understand the context and inform some of the questions. The analysis of the individual interviews and focus group interviews is integrated to serve the dual purpose of exploring the phenomenon of interest and completing or confirming the data of group perspectives and individual views. Interviews were conducted in Malay language (the national language) to avoid language barriers and recorded with participants’ consent.

### 4.1 Data Collection

Data were collected from five national primary schools. There were three schools with the Special Education Integration Programme (SEIP) for learning difficulties and two non-SEIP schools. Purposive sampling is adopted to recruit the participants. There were teachers, senior assistants, mainstream, and special education teachers (at SEIP schools only) involved in the study. Table 1. shows the participant distribution.

Table 1: Participant Distribution

Schools		Number of Participants	
SEIP	Non-SEIP	Individual Interviews	Focus Group Interviews
1		11	13 (2 groups)
2		0	7 (1 group)
3		2	5 (1 group)
	4	6	13 (2 groups)
	5	6	13 (2 groups)

Source: (Rosmalily & Woollard, 2019)

### 4.2 Data Analysis

Data are thematically analysed via inductive approach using the Computer Assisted Qualitative Data Analysis (CAQDAS) NVivo 11 through the lens of interpretivist and constructivist approaches. The eclectic coding involves a constant splitting and lumping process of the coded text to re-assess and crystallise the codes, categories, and themes. Analysis was carried out in Malay language by a native Malay speaker. Only the themes, nodes and excerpts are translated to English.

## 5. Findings and Discussion

Participants viewed inclusive education as a challenging concept to be implemented. Their responses are based on the understanding of the Malaysia practice which reflected a narrow concept. The excerpts presented are the translated version, without changes in the meaning and nuance of the original. The illustrated excerpts are cited from individual interviews (II) and focus groups (FG) 'a' and 'b'. The 'S' denotes school and '\*' indicates special education teacher. All names and schools are anonymised.

### 5.1 Mixed Views on the Vision and Inclusive Education

Participant conveyed mixed reaction and were sceptical about the Vision because of their insights into its discrepancy from reality. The significant negative viewpoint about the government's vision on inclusive education:

*I don't care about policy, development plan or whatever. Once heard, forget it. Pupils' performance is important. With school programmes and pupils, no time for other interests. Too much work.*  
(II, S4, Nia)

This perception exposed teachers valuing on academic performance. Participants believed that policies that do not focus on academic results is insignificant. Nia's detachment was due to teachers' heavy workload and other school priorities. Similarly,

*Government must inform teachers, ensure their understanding. But I don't see any effort to inform and support them. Only a few days ago since 2014, a JPN officer briefed the headteachers. Still, unclear. And, for non-SEIP schools, why should we bother. Our main concern is the remedy for pupils who've issues with LINUS skills.*  
(II, S5, Rafi, Headteacher)

Another viewpoint:

*Some of MOE's criteria: pupils, eligible to be included if they're able to learn, behave and manage themselves... have minimum problems, high-function pupils. We could familiarise them for inclusive education.*  
(II, S1, Tuah, Senior Assistant)

Tuah pointed out the differing policies on the inclusion of pupils with SEN. The chance to realise the Vision was, therefore, slender. The statements also implied issues concerning teachers' understanding about inclusive education and, more importantly, what the government, represented by staff from the higher level, such as from the Ministry and State Education Department (JPN), told the administrators (see earlier Rufqa's extract) and hence the teachers.

Another common negative view was that the Vision was impossible and unrealistic for Malaysia, as a developing country.

*75% is too high; difficult. Malaysia hasn't reached the level of developed country – too demanding.*  
(II, S5, Nur)

Concern was expressed at Malaysia's capacity in many areas, including technology, expertise, facilities, and educational system.

However, there are also positive reactions about the Vision. One view was that the Vision portrayed the government's effort and seriousness in implementing inclusive education:

*It's a good effort, should be maintained. So, pupils with SEN could undergo realistic learning experiences, enjoy a fair share of the educational rights.*  
(II, S1, Sofea)

Mainstream education was mentioned to provide a naturalistic learning experience. Sofea's expression of educational rights to mainstream inclusion, however, was only to the rights of pupils with SEN getting similar resources, curricula and activities. This 'realistic' reference is questionable and having access to the 'mainstream' does not guarantee an inclusive education for pupils. Although she believed that teachers play an important role in supporting pupils to achieve, her thoughts about inclusive education were settled when she mentioned that it was better to segregate pupils with SEN to boost their confidence.

Another perception involved the integration of pupils with SEN, and was considered to be a development of inclusive education:

*SEN pupils are in the mainstream environment. The SEIP programme is opened in most schools.*  
(II, S1, Yaqeen, Headteacher)

Yaqeen revealed that the SEIP itself was an inclusive education. There were issues with teachers' understanding. First, of government policy and the definition of inclusive education because, as stated in the Blueprint, SEIP is not an inclusive education programme, secondly, there was a narrow view that associates pupils with SEN with their placement. Also, the placement of SEIP at mainstream schools does not warrant that pupils' inclusion achieves success.

One participant supported the Vision thus:

*I support (the Vision). There're pupils with SEN who can be academically upgraded, join the mainstream.*  
(II, S1, Ziqri)

Still, there was an issue with conceptual understanding of inclusive education, that of involving only pupils with SEN learning in mainstream classrooms. Clearly, Ziqri referred to those pupils who can do well academically. Also, his word 'join' signals and emphasises the separate educational systems, with differing requirements for enrolment: 'those who want to join the mainstream need to have a certain level of IQ, otherwise they will receive special education'.

## 5.2 The Influencing Factors

Participants view was influenced by the influencing factors which were identified into categories: government, school, teacher and Malaysian ethos.

### 5.2.1 The Government

Participants voiced issues about policy.

*Similar, but different terms. Because the authorities always change.  
Complicated education system, many policies. Teachers, as implementers,  
must execute.  
(II, S4, Mia)*

This statement demonstrated the requirement to adhere to policy, as a practitioner. However, it is confusing, and teachers may lose direction and take unclear actions. In this case Mia referred to MOE's programmes, specifically LINUS and a prior programme called 3M.

There is discrepancy in education system. As Ziqri put it, the segregation does not promote equality but contributes to the communication barriers within society in daily life:

*Weird to talk about inclusive. There're vernacular schools, unnecessary! I don't see equality. Everybody should enrol in SK, to promote the national language in daily life. I tried to communicate with a Chinese, but he couldn't understand, unable to converse in Malay language, which is... So, inclusive education is good.  
(II, S1, Ziqri)*

Obviously, Ziqri was unable to speak Mandarin, and neither could he converse in English. It was considered strange for a Malaysian to be unable to speak the national language.

However, vernacular schools are increasing, seen as due to political interest. Reja said:

*Talking about inclusive, obviously we don't achieve the objective. Separated system: SK, SJKT and SJKC: very challenging for inclusive. How? The policy – develop more SJKs.  
(II, S5, Reja)*

Unanimously, participants viewed that the education system places great emphasis on academic achievement. It was felt that Malaysia practised segregation for special education provision:

*Zania: I want to emphasise our common practice. In mainstream schools, special education classes are segregated, isolated within the same premises. They never mixed up. Today, new category of mainstream schools emerged like Cluster schools – differs from the non-Cluster or suburb schools.  
(FGa, S4)*

Participants also pointed out mainstream schools' segregation was due to the branding practice involved in recognising academic achievement, such as the Cluster school, which was believed to be given to more prestigious and of higher quality than other schools those that were not chosen, or schools in suburban areas. Therefore, having pupils with SEN at such schools would lower the academic results and tarnish their reputation, consequently, the award could be withdrawn. They highlighted this practice (and provision of SEIP – special education within mainstream school) as common and contradicting the notion of inclusive education. From their view, this implied challenges for an inclusive education system

### 5.2.2 The School

Participant raised concerns over facilities, resources and funds that were required for an inclusive classroom. View about different quality between schools could be observed:

*The SK and SJKC are... Well, the school building, the high-rise and handsome SJKC buildings. SK is government's school, but it's of low-quality, different from SJKC.*  
(II, S4, Mia)

Mia compared her school with the neighbouring SJKC, saying that the locality affected facilities and, despite similar government funds, the SJKCs were better off.

Another common concern was a teacher shortage in SEIP and mainstream. Yaqeen said:

*There should be assistants and support from special education teachers when SEN pupils join the mainstream. But, no. So, everything befalls mainstream teachers.*  
(II, S1, Yaqeen, Headteacher)

There was consensus that teachers hold many responsibilities and roles that could be carried out by other staff. Generally, participants expressed frustration that the education system and workload prevented them from being more effective and inclusive. When probed whether a teacher would be able to cater for all pupils, regardless of difference, Rosie asserted:

*The education system emphasises academic achievement. Teachers are pressured with many things. Different teacher at different class from morning until noon. Indeed, you must tackle all pupils, but with time limitation, additional works and other responsibilities, how can we concentrate on pupils with SEN? A teacher holds tasks for pupils' affair, co-curriculum and curriculum.*  
(II, S4, Rosie)

According to Rosie, it was challenging for teachers because they are responsible for administrative matters, pupils' affairs and co-curricular activities, which takes them away from their core task – teaching.

### 5.2.2 The Teachers

Common responses concerned teachers' capability. SEIP teacher-participants doubted mainstream teachers' capabilities to teach pupils with SEN, and most mainstream teacher-participants admitted that teaching pupils with SEN was beyond their capabilities, competencies and unquestionably their knowledge and skills. In general, all mainstream teacher-participants admitted inexperience with pupils with SEN and emphasised the difference between theory and practice, and that they were not prepared to include pupils with SEN into mainstream classrooms:

*Cuifen: If such, what happens to the mainstream teachers? Do you think teachers are free, trained to teach these inclusive pupils? No. Can you give us LADAP? Can you teach, train us to teach them?*  
(FGa, S1)

The point was made after considering conditional inclusion of pupils with SEN. Still, issues with the workload, pre-service training and need for PD to enhance teachers' inclusive practice was implied. However, a cynical view might be that Cuifen, above, was expressing doubts about mainstream teachers' competencies.

Another example:

*Teacher's skill is important. Not everybody has knowledge and skill to cater to diverse pupils.*  
(FGb, S1)

On this, Adam said that many teachers lacked insight into inclusive education:

*What's needed is the root, the teachers themselves – teachers don't know the Vision. Why? Because we don't know the concept and have no exposure.*  
(II, S1, Adam)

Clearly, it was seen that teachers were prominent figures in the successful promotion of inclusive education. While everyone highlighted issues in government and school, some laid importance on competency as the main challenge to implementing inclusive education.

A lack of knowledge on strategies, implementation and the benefits were observed in interviews:

*Inclusive education means moving towards examination, where... er, pupils are better prepared to sit for UPSR.*  
(II, S1, Selvi)

Selvi was from a SEIP school and had over 10 years' experience yet was still unaware of inclusive education.

Another point related to teachers are their beliefs, values, and attitudes. Positive values and beliefs were demonstrated in relation to pupils' diversity of gender, socioeconomic background, religion, ethnicity, and other identifiable differences, apart from learning disabilities. Special needs and SEN were perceived and described in terms of the medical model. Pupils with SEN must meet certain criteria to be included in the mainstream, as summarised below:

*Abu: \* But, for special education pupils, if given a thousand chances, they still can't, because of their cognitive abilities.*  
(FGb, S3)

Also, many participants expressed that their voices were unheard and that both teachers and pupils suffered the effect:

*Anusha: MOE doesn't call teachers when drafting new policy; there's no survey. After the implementation, then only they asked whether it burdens the teachers.*  
(FGa, S5)

As presented earlier, there was a lack of communication and interaction between teachers about inclusive education, even at SEIP schools, and no opportunity for special education teachers to share information, possibly because of its perceived insignificance and other school priorities

### 5.2.2 Malaysian Ethos

The mentality of Malaysian parents, societies and teachers was coded. This includes the mindset of segregating pupils based on ethnicity, academic excellence, and ability. Most participants believed that Malaysians are comfortable with those of a similar language, religion and culture, thus a segregation mentality challenges the implementation of inclusive education. To illustrate:

*Anusha: It's difficult to implement the programme. Malaysians aren't easy.*

*Kafei: They (SJKC teachers and pupils) don't understand our cultures.*

*Zara: Not respecting other cultures.*

*Kafei: Like us the Chinese (at this school), we too, have problems to mix with those from the real Chinese schools (SJKC). Their culture and thinking are different.*

*Anusha: You send me to SJKTs, I wouldn't survive. They would kick me out.  
(FGa, S5)*

The Chinese (Kafei) and Indian (Anusha) participants above expressed discomfort with vernacular schools because they were not used to their norms and their communities' mentality, different from those of ordinary National schools. They revealed that Chinese parents had run an investigation into sending children to National schools, which had never happened in the past. According to them, their preferences for school type were obvious, although the National-school facilities had improved

As disabilities became a constraint, it would be difficult for pupils with SEN to assimilate into mainstream education unless they could function cognitively. It was perceived to be difficult to include pupils with severe and multiple disabilities, who are mentally retarded, as they described them:

*Qawi: \* Most SEIP pupils with SEN have multiple disabilities. The mentally retarded pupils have severe brain damage. That's a constraint.*

*(FGb, S1)*

## 6. Conclusion and Recommendation

Teachers view inclusive education as a challenging concept and practice. The data analysis identified that the views are influenced by the perception of shortcomings in the government's policies and schools' practices. The difficulty to implement inclusive education is mainly associated with SEN according to the teachers. They believe that inclusiveness for pupils with SEN is best provided from the perspective of the medical model of disability. The study suggests that teachers themselves represent a challenge to the implementation of inclusive education, due to their lack of understanding, knowledge, and skills, as well as their overall values. There is evidence that teachers, under the pressure on them to raise standards, may be adopting a restricted view of special education. Raising standard by increasing the academic excellence is believed by them to constitute the educational transformation for the twenty-first century.

The complex educational system and the Malaysian ethos of segregation of ethnicities, academic achievement and disabilities serve to intensify the challenges to the successful promotion of inclusive education in Malaysia's primary schools. All the issues identified that relate to the government, schools, and teachers are interconnected. Thus,

only by changing the political scenario can inclusive education be successfully promoted in primary schools, whether SEIP and non-SEIP.

It is suggested that the definition of inclusive education stated in the Blueprint need to be reviewed. The school system must be re-examined to suit the situation and vision of an enhanced knowledge economy via integrated and holistic education. Schools should not widen the gaps and barriers among pupils of different background, ethnics, religion, languages, and abilities. Conclusively, listening and responding to teachers' views are vital to ensure the successful promotion of inclusive education. Since teachers are practitioners who understand their pupils and the school context, their views provide useful insights into and key messages for both practice and research, whether in SEIP or non-SEIP schools.

This study was carried out before the pandemic COVID-19. Presumably a study is needed to explore teachers' views on inclusive education during or after the new normal due to the pandemic. Teachers' practice and strategies of online teaching and learning are vital in ensuring no education loss and education inequalities of all pupils regardless of abilities.

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# GOING BEYOND THE PERSONAL: PERCEPTIONS OF PARENTS OF INDIVIDUALS WITH AUTISM ABOUT EXPRESSIVE ARTS THERAPY

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## ABSTRACT

According to Enriquez (1994), the Father of Filipino Psychology, the need to contextualize psychology and its practice is of importance in order to genuinely meet the needs of the people it serves. Through the indigenized framework wrought from years of practice of expressive arts in the Philippines with the core value of "Kapwa" or a shared inner reality as a guiding principle, Being a collectivist people, Filipinos with disability find difficulty connecting to the web of relationships they have specifically the family. The study aimed to obtain the parent's or the caregiver's perceptions as to how the expressive arts have affected the person with autism and how it has also affected the dynamics of the family. The study found that other than creating motivation and a greater selfesteem in the student, it has also improved communication within the family. Expressive arts had created an avenue for understanding the family member with disability and create more empathy towards them. It has also brought about a sense of hopefulness in the family members regarding the future of these individuals. Thus, expressive arts had bridged the gap that the disability had created and has an integrative function for the individual, his/her family and the society.

## 1. Introduction

Being a lifelong, and immensely debilitating neurodevelopmental disorder, autism's impact covers not only the child themselves, but extends to the parents and the family of the child (HB 6934, 2018). Given that this condition is irreversible, the family's burden starts off early when the child is diagnosed up until the adulthood. The burden of care coupled with the psychological impact of the disability will be carried on by the family. From the shock of the diagnosis, the grieving process, and going through the different interventions up to planning for the child's future, parents and family members need to put in all the effort to see to it that the child has been cared for and secured (Paguio, 2021). Although the child's condition poses as a burden, Foronda (1999) found that parents of children with ASD viewed their children as gifts of God, source of luck, source of pride, a challenge, and a part of their identity. Paguio (2021) further found that parents saw their child as a blessing and a catalyst for their personal development.

One of the symptoms that parents need to address is the issue of social functioning of the child. Children with autism typically manifest impairment in language and social communication (APA, 2013). If unmanaged, this inability may lead to outburst and temper tantrums especially in cases where the child has a severe type of autism. One of the interventions, therapist and teachers turn to to help with this concern are the expressive arts.

According to Barnuevo (2018), In the Filipino context, involvement in artistic ventures are commonly devalued. He links this to poverty, the country's history and the attitude the general public has towards the arts. He continued by saying that Filipinos think of return of investment when engaging in any activity, and that the arts do not offer adequate financial returns. The view that art is merely for entertainment leads to viewing artistic activities as non-essential and a waste of money. This translates to the expressive arts and the therapeutic value it offers. This research looked into the perspectives of parents who engaged their children in expressive arts activities and aimed to serve as evidence against those who fail to see the value of the expressive arts as a vital tool in intervening for children with autism.

According to Schweizer, C., Knorth, E. & Screen, M. (2014) who looked into what art therapy interventions worked for children with autism, art therapy provides a flexible and safe space that may help the child develop a better self- image and improved communication skills. Other than communication, the sensory experiences from the expressive arts may have effects on the child's attention, self-regulation, and social functioning. This was supported by Lum, S.Y. (2017) who mentioned that the expressive arts helped children develop better coping skills improving the social and psychological wellbeing.

## **1.1 Objectives**

The study aimed to:

1. Describe the perception of parents on the expressive arts process and how it has affected their children.
2. Determine the parents' perception on how their children's involvement in the expressive arts affected the children's involvement in the families activities.

## **2. Methodology**

This is a case series qualitative study of 3 cases of children/adolescent/adult with autism. Data collection was done through open ended questionnaires, informal interviews and observations for at least a 3 month period. Thematic analysis was done from the interview transcripts, field notes and questionnaire responses. This was conducted in a private therapy center in Metro Manila, Philippines.

The expressive arts session start with a mindfulness exercise that helps the child to relax and transition into the activity. This is composed of guided imagery and breath work assisting the child to focus on their breath. This is followed by the art making process where the child is allowed to pursue any expressive art activity they wish. To help in this decision, the facilitator asked them to choose between two activities they prefer. The child may opt to be assisted in the art making process. All through out, the child's permission will be obtained for any assistance that they may need. Once the art making is done, processing was done through the use of pictures of emotions and asked how the child felt. A mindfulness exercise will be done to signify that the activity is over.

### 3. Results

#### 3.1 The Participants

L

L is an 18 year old male diagnosed with autism at 3 years old. He goes to a public special education school in a self-contained classroom for 15 years and has been going to the expressive arts program for 3-4 years for management of fixation with dolls on a once a week basis. He also sees an Occupational therapist weekly. He was described to have had tantrums, fixations, hyperactivity and, poor social skills and considered non-verbal.

L's family is composed of four members: his parents and his older sister. His father is the VP for finance in a private university in Manila. He is an accountant by profession and holds a master's and doctorate degree. His mother is a stay at home mom who used to work as a finance officer. His sister is a college student and diagnosed with Asperger's syndrome with comorbid major depression.

M

M is a 21 year old male with autism. He was diagnosed at the age of 3 years old. M is currently enrolled in a private learning center and is in a self-contained classroom. He has been attending the expressive arts program for 3 years with the researcher on a once a week basis. He is also enrolled in aqua therapy once a week. He was described to be quiet, serious, wants to be left alone, with auditory sensory issues, rigid and non verbal. He was also diagnosed with seizure disorder and maintained on anti-convulsants.

M belongs to a five-member nuclear family. His father is an engineer who works as an Overseas Foreign worker (OFW). His mother is an employee in a government-owned company. His elder brother is a successful owner of a start up business, and his youngest sister is a high school student.

E

E is a 10 year old girl diagnosed with autism at the age of one. She was also diagnosed with neurofibromatosis last year. She currently attends an inclusive class in a private school. She has been attending the expressive arts program for 2 years with the researcher on a once a week basis for communication and attention issues. She sees a speech therapist, an occupational therapist and has been in an ABA program. She is described to be hyperactive, rigid, was non verbal until the age of 7 years and had self injurious behaviors and throws tantrums.

Her mother is a single parent and works as a medical doctor. They live with her aunt and a nanny who has been taking care of E since 2013.

### 3.2 Themes

There were two major themes identified from the interviews, questionnaires and observations. The first theme was Benefits of the expressive arts. This had three sub themes, namely: physical and behavioral, psychological, and interpersonal. The second theme was expressive arts experience, which had three subthemes; materials, structure and relationship.

#### 3.2.1 Benefits of the Expressive Arts

This theme pertained to the positive effects of the child's involvement in the expressive arts program as perceived by the parents. These revolved around the changes and developments the child manifested which the parents observed. The subtheme of physical and behavioral referred to observed relaxation of the child, improvement in the child's skills in art and a general improvement in the child's behaviors.

The student with autism tended to be more relaxed and calm when engaged in expressive arts activities. When participants began with their expressive arts sessions, two parents reported their children manifested anxiety but on the 4th session showed calm demeanor when in the session and even after. E's parent mentioned,

“Doing art has also helped her to use her excess energy and to occupy her...She is more cooperative and relaxed when you ask for her input.”

M's mother added that the relaxation was observed to last even up to the next session. She mentioned,

“M became more calmer than before as he always paints at home...I have observed during the sessions that my son is restless and at times, agitated when he comes to the sessions. After his aquatherapy, he passes by crying children and is disturbed by the noise. By the time he sits for his art sessions, he calms a bit and calms down more when he is engaged in the activity. I also noticed he has less seizures compared to before he started doing art.”

The participant's engagement in the expressive arts activities eventually lead to an improvement in their skills. The participants were reported to be more adept in using the materials and the process of creating art e.g. use of paints, markers, choosing colors to be used, pencil and brush grip. E's mother shared,

“E has improved her drawing skills. The lines, figures and her use of colors are more defined and specific.”

An improvement in the child's behaviors were also noted. The participants were reported and observed to manifest a decrease in disruptive behaviors such as tantrums, restlessness and aggression. The parents of L and M noted that after several expressive arts sessions,

“He has shown discipline and manifested less tantrums like hair pulling and hitting.”

"His hyperactivity was lessened when he did painting...He became more disciplined than before. He used to break all the frames in our house but now, he has stopped and even developed a liking of art pieces"

As for the benefits of the expressive arts on the interpersonal aspect of the child's development, these pertained to the child's ability to participate in the activities of the family and relate with others. The researcher had also observed improvements in the way they communicate, mostly non-verbal through holding touching, pointing and eye contact. The children were noticed to be more participative in the activities of the family and engages with them more. M's mother shared,

"He used to not participate in activities of the family so we usually do not bring him along. Now, when his brother hosts art exhibits, he goes with us, behaves appropriately and seem to appreciate the art. He looks at the art and seem to enjoy it.

The psychological benefits of the expressive arts were manifested by increased interest in the expressive arts activities, improved focus, improved self-efficacy and created a sense of hope among the parents.

The participants, in their experience of the expressive arts, developed an interest in engaging in it more. A desire for involvement and continuation of the activities was noted. According Csiksentmihalyi (2008), engagement and the desire for continuation are manifestations of motivation and flow. M's mother shared an experience they had with M that made them realize that he was interested in the arts.

"One time, when we went to a bookstore to buy some canvas for painting, we noticed that he was holding some of the canvas and handing it to us...After his aqua therapy sessions, he would rush to the third floor for his sessions... At home, he would continue to draw and color by himself when he feels like it which is everyday!...Before, M was not interested in art. He just prefers to watch his teacher do all the work but now, he likes painting so much that he engages without being urged to do so."

Most of the participants were very inattentive and distractable at the beginning of the sessions. The participants were noted to have more ability to concentrate on one activity based on the interview and observations. Attention to tasks has increased and even transferred to other activities and contexts. E's mom noticed that she has become more focused, a concern they almost gave up on.

"E before would dabble into so many things all at once but now, we noticed that she has become more focused."

Self-efficacy is defined as the child's belief that they can perform the expressive arts activities even after the sessions. The participants were noted to have initiative when engaging in expressive arts. Although not expressed verbally, no anxiety responses were noted when doing expressive arts activities. M's mom shared her observations,

"We also noticed M to be able to choose the colors he prefers for his art work. He also chooses the subject he wants to paint on his own...He paints on his own during his free time. He picks up art materials without being told to do so."

Because the parents saw that their child is developing and engaging in the arts, it created in them a sense of hope for their child's development and future. This describes the parents perception that the expressive arts has the potential to help them see a silver lining in their situation and see a better future for their children and their family. L's mother shared,

"If L continues his involvement in art, it may help I'm become more independent and his art may become a source of livelihood for him in the future."

### **3.2.2 Expressive Arts Process**

This theme describes the parents perception of how the process of the expressive arts activities helped their child develop and reap the benefits of this therapeutic modality.

The first subtheme is the materials used in the sessions. For the parents, the use of art materials facilitated expression of the person and evoked emotions accessed through the use of the different art media. L's mother shared,

"L enjoys using the art materials especially the paint brush, different acrylic paints and canvas. Judging from his cheerful reaction, he is happy knowing that he can create a picture using the paint brush and color."

Structure refers to the flow of activities and rules during the sessions that affords the person with autism the opportunity to explore him/herself through art with a feeling of safety. E's mother described,

"E has learned to follow instructions better and rarely shows tantrums in during class."

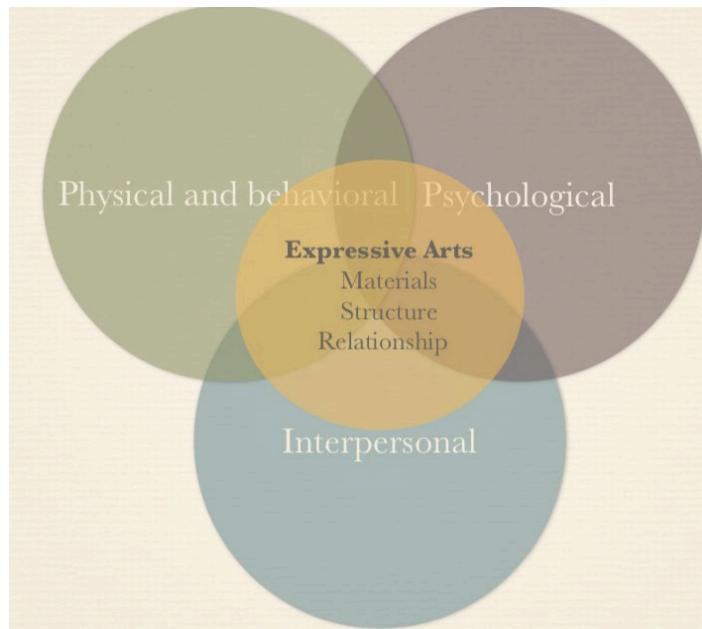
Lastly, the relationship pertains to the trusting relationship the teacher has established. Through an accepting and consistent approach, this creates a feeling of safety among the students when they engage in the expressive arts. L's parents described this as,

"L has gotten used to the teacher. He seems to feel accepted by the teacher through constant reminders of acceptance especially during meditation. He shows this by his calm and sometimes excited demeanor during the sessions."

As a summary, parents view the elements of the expressive art therapy as a vital intervention and perceives it as beneficial to the child's well being. This is illustrated in the figure below.

**Figure 1**

*Framework of Expressive arts as an intervention for individuals with autism*



*Note: This figure 1 shows the benefits of the expressive arts as an intervention for individuals with autism and the beneficial elements of the expressive arts process.*

#### **4. Conclusion**

This paper concludes that parents of children with autism engaged in expressive arts activities see the benefits of the activities on their child's development, learning, and well-being. They see that the elements such as the materials, structure and the trusting and accepting relationship afforded by the expressive arts make the expressive arts a vital tool in intervening for individuals with autism. The parents also noted that the expressive arts also help the individual to express and engage with the external world more meaningfully, helping the child to feel more included in their environment.

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# THE INNOVATION OF MUSIC NOTATION INTO COLOUR CODING AND NUMBERS

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## ABSTRACT

This study aims to see the extent to which the effectiveness of the use of musical notation that uses Colour Codes and Numbers to replace standard musical notation among Special Education students with Learning Disabilities. This is because the pupils are unable to remember alphabetic codes (C, D, E, F, G, A, B,C'), are confused to read standard musical notation, and are unable to play musical instruments according to song notes. In this study, a total of 17 Special Education students with Learning Disabilities were selected as the study sample. The measurement tool of the study involved the use of observation checklists and interviews. As a result of the study, these students can recognize, understand, and can play songs with notes that have been innovated. Indirectly, students' skills in playing percussion instruments such as angklung and bells can be improved. Next, these students can make music performances with confidence. This method will be disseminated to Pre-School and mainstream students at Sekolah Kebangsaan Bukit Beruntung.

**Keywords:** Music Notation, Numbering & Colour code, Special Education with Learning Disabilities

## 1. Introduction

Music Education focuses on efforts to explore and develop the talents and potential of students so that they can keep practicing the learnt skills and then produce students who are confident, skilled, competent and positive in life. The learning and facilitation process (PdPc) of music education emphasizes more in the singing skills, playing percussion instruments, and playing recorders. This process gives priority to the activities to meet all the requirements of the curriculum provided based on the abilities and creativity of students. Music Education Teaching Modules were prepared based on the Music Education Curriculum Standards to help the teachers to conduct teaching in effective manner. However, to meet the needs of individuals, teaching and learning in the Special Education Program for the Integration of Learning Disabilities is flexibly designed in accordance with the Education (Special Education) Regulations 2013, 8. (1) (c) which states; .... A teacher can make modifications to: i. teaching

and learning methods or techniques ii. time allotted for each activity iii arrangement of activities, and iv teaching aids ..... any modifications made under paragraph (1) (c) shall be following the Special Education Curriculum.

The learning and teaching process that takes place in the classroom is a determinant key of the future success of the country. Education is also the foundation for the formation of a united nation-state. Through education, individuals have the opportunity to improve their quality of life, become successful members of society, and actively contribute to the development of the country (Ministry of Education Malaysia [MOE], 2012a). This effort is to produce a Malaysian citizens who are knowledgeable, skilled, virtuous, responsible, and able to achieve personal well-being and contribute to the harmony and prosperity of the family and country to every section of society.

Students with special needs are known to be different from normal students in terms of mental, sensory, communication, social behavior, or physical (Jamila, 2005). This difference results in a modified form of education being given to these pupils so that they able to develop their abilities. Appropriate teaching and learning methods play an important role in improving thinking skills, formation of positive behaviors, giving self -confidence as well as improving the academic achievement of students with learning difficulties (Hussein et al., 2020). Appropriate teaching aids (BBM) are required by Pupils with Special Needs (MBK), especially in helping them understand certain concepts. The construction of accurate teaching aids and the correct way to use them is expected to improve the achievement of MBK in mastering a subject skill (Siti Fatimah & Mustafa, 2018). Therefore, special education teachers need to be creative and innovative in producing methods and teaching aids to improve the skills to be taught and attract students to be actively involved in PdPc activities carried out.

The innovation of color code and number notation was based on the opinion of Johami Abdullah, 1993 who stated that Lowell Manson a music education figure who was once called the “Father of Music Education” in America thought that all students could sing and had the right to learn music.

## 1.1 Problem Statement

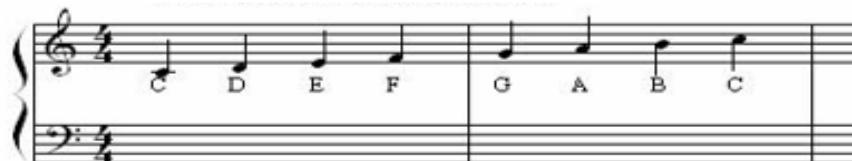
Teachers who teach MBK often face a various problems in the conducted PdPc such as lack of concentration and low self -confidence. Some of the MBKs do not master basic skills such as communication, problem solving, behavioral skills, group work, academic foundation, interpersonal, computer, time management, self-management, insecurity, following instructions, personality management and social integration (Zainudin et al., 2009).

The results of a preliminary survey by teachers during PdPc found that low and medium functioning students had a few problems to play the recorder as contained in DSKP year 5 revised 2017 Learning Standard 4.2.1 fingering and playing Note G, Note A, Note B, Note C ', Note D '. In DSKP year 6 Learning Standards 3.2.2. Blow the recorder according to note E and Note F. The students are confused and faced difficulties to remember the alphabetic codes (C, D, E, F, G, A, B.). Besides that, reading standard musical notation causing them to be unable to play musical instruments and perform accordingly.

## 1.2 Form of Innovation

The Colour and Number Code method (1, 2,3,4,5,6,7,1') has been implemented in order to attract the student's attention and the innovated musical notation is easier to understand. As a result, the students' skills in playing percussion instruments can be improved tremendously and these students can perform music with confidence.

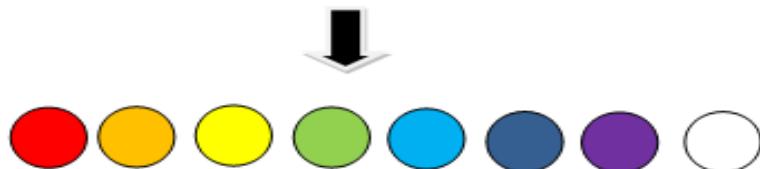
*Figure 1 shows the process of innovation of standard musical notation from the notation of letters C, D, E, F, G, A, B, C' to colour codes and numbers*



Standard Musical Notation



Notation of letters C, D, E, F, G, A,B,C'

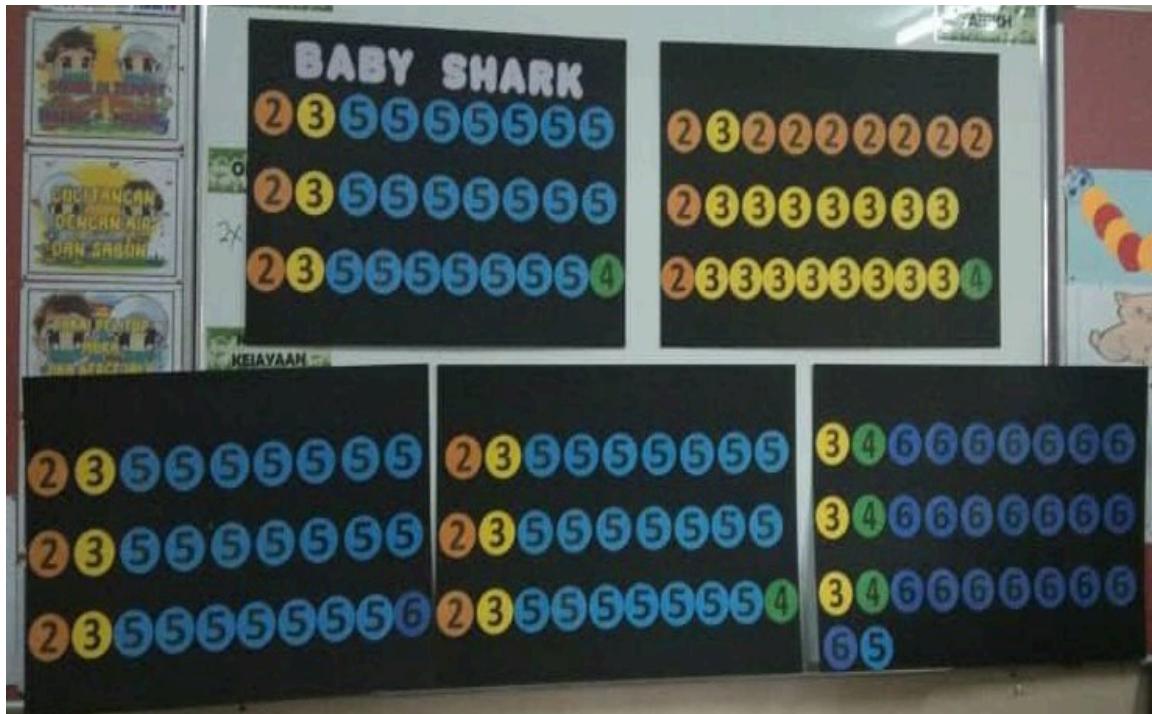


Colour codes



Colour codes and numbers

*Figure 2 Innovated musical notation to colour and number codes*



### 1.3 Target Groups

This standard musical notation innovation project to colour and number codes has been implemented to overcome the problems faced by students of the Special Education Integration Program (PPKI) at SK Bukit Beruntung 2 in mastering the skills of playing percussion instruments such as *Angklung* and bell. The researcher conducted a study to observe the effectiveness of the innovation produced by involving a total of 10 students of PPKI Standard 4 Terampil and 7 students of PPKI Standard 5 Terampil.

### 1.4 Research Objectives

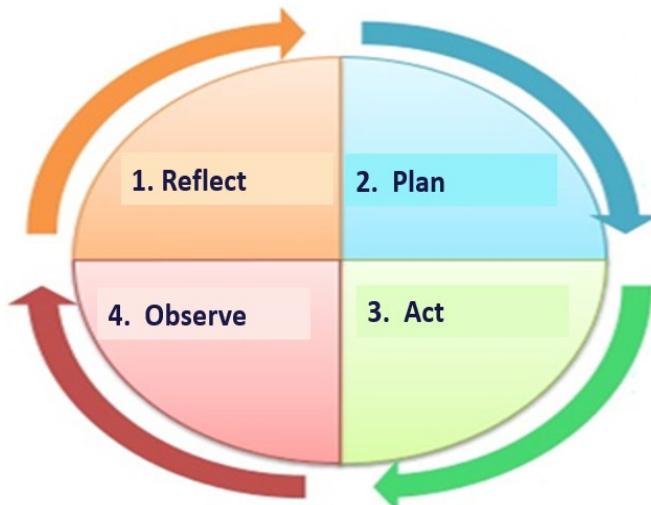
The purpose of this study was to improve percussion instrument playing skills using musical notation innovations using Colour and Number Codes. In particular, this study has the following objectives:

- 1.4.1 To improve students' comprehension of reading musical notation
- 1.4.2 To enhance the fine motor skills, eye and hand coordination of students.
- 1.4.3 Students can play musical instruments
- 1.4.4 Students can perform correctly and confidently.

## 2. Methodology

Researchers practiced the constructed model from Kemmis & McTaggart (1988) in order to conduct this study.

Figure 3 Kemmis & McTaggart Model (1988)



### 2.1 Reflect

The process of action research begins with the process of implementing individual reflections in the classroom while the researcher is teaching Music Education. The reflection done by the researcher includes an assessment in terms of strengths and weaknesses of the tasks performed together with suggestion of ways to overcome the weaknesses and strengths of the problems that occurred. Researchers also tried to list any problems seen during the learning and facilitation process (PdPc) by using several instruments to identify the focus of problems faced by students. Therefore, researchers have used observations and interviews to gather all relevant information. Researchers manage to detect the main problem faced by students after doing the analysis those students unable to play the recorder and replace the instruments to *Angklung* and bells. On top of that, students also cannot understand and read musical notation according to the provided syllabus. Therefore, students find it difficult to follow PdPc theoretically and are unable to focus during the lessons.

After having a discussion with Music Education subject teachers, it was found that PPKI students could not recognize, understand and read standard music notation. As a result, they are unable to play musical instruments well. Meanwhile, discussions with Mathematics and Art Education subject teachers stated that low-functioning students could recognize colours and the students with moderate functioning can recognize colours and recognize numbers very well.

Figure 4 PPKI Students unable to recognize the music notations



## 2.2 Plan

Researchers have devised several measures that can help improve students' skills of playing musical instruments and reading musical notation. Researchers have made observations using checklists to ensure the effectiveness of musical notation innovation.

Based on the checklist of observations conducted:-

- Unable to understand and read standard musical notation.
- Can recognize the colours red, orange, yellow, green, light blue, dark blue, purple and white.
- Can recognize and pronounce numbers 1,2,3,4,5,6,7.
- Students can shake musical instruments such as *Angklung* and bells.
- Students were unable to perform the fingering techniques and play the recorder accordingly

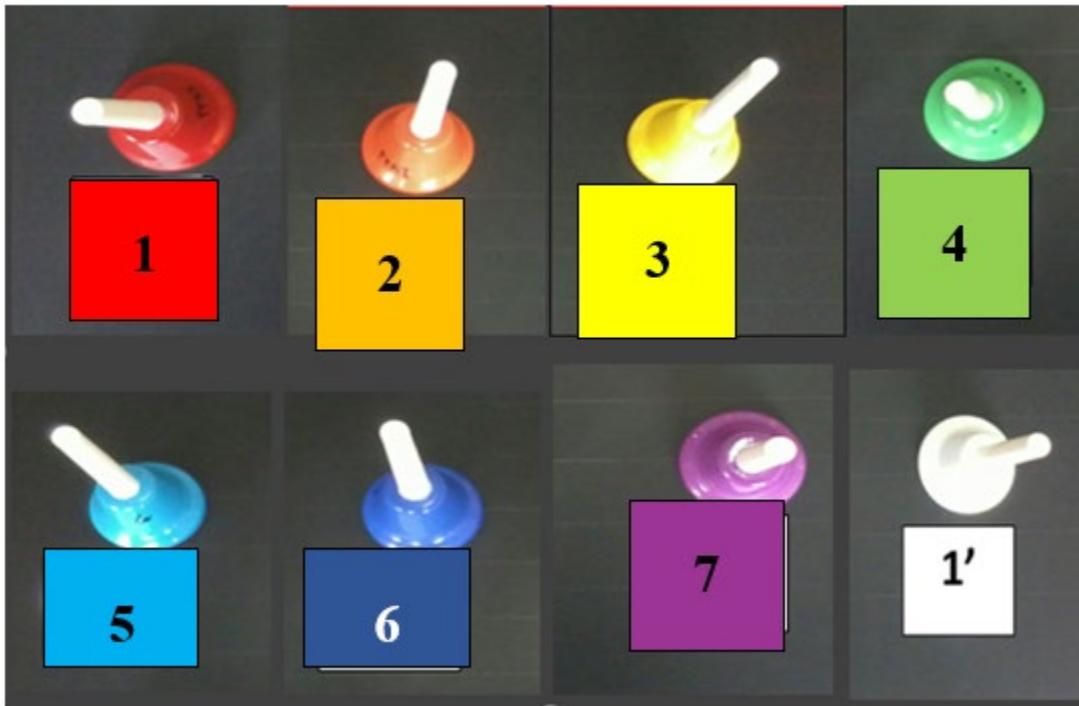
## 2.3 Act

For this step, researchers have applied the teaching of Music Education, especially reading and understanding musical notation as well as performing using *Angklung* and bells. Researchers prepared musical notation based on colour and number and planned several activities that suits to the level and ability of students in order to help them master the basic skills of music, especially in reading song notes.

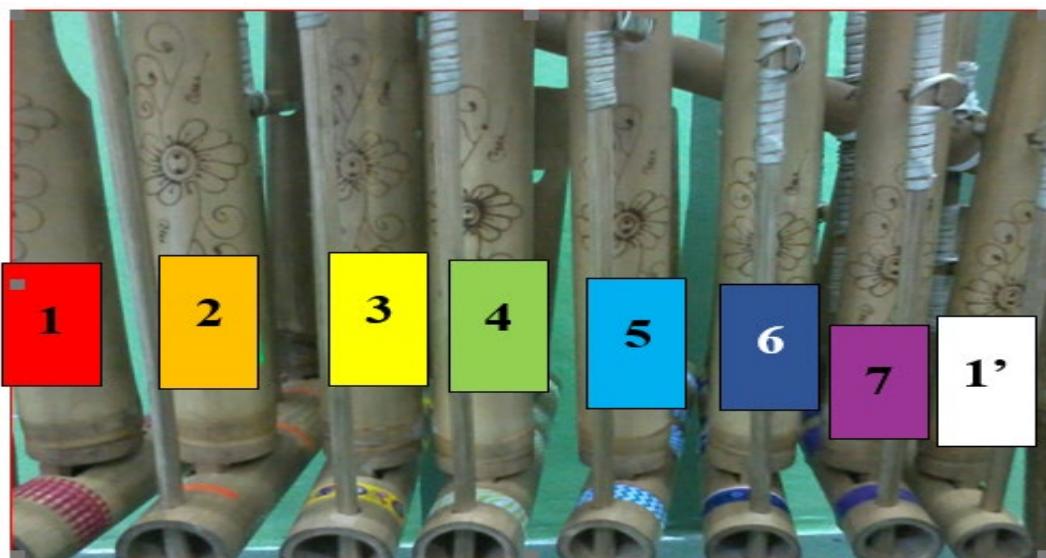
The following are the teaching implementation steps that have been carried out by researchers:

1. Introduce students to colours and numbers.
2. Introduce angklung musical instruments and bells along with musical notation.

*Figure 5 the bell instrument has been labelled with colour and number notation*



*Figure 6 Angklung has been labelled with colour and number notation*



## 2.4 Observe

At this stage, the researcher are required to re-observe whether the methods used are successful or not in improving and enhancing the skills. The researcher has observed each activity that runs throughout the PdPc accordingly by using observational instruments such as checklists and video recordings to collect data.

## 3. Findings

### 3.1 Observation

Based on the observation conducted after the study, the researcher found that the targeted students can recognize and understand the musical notation that has been innovated to color code and numbers and can even perform the song 'Baby Shark' and 'Rasa Sayang'.

### 3.2 Interview

The table below shows a summary of the findings from the interviews.

*Table 1: Results of the interview findings of the study sample after the project was carried out.*

Interview Questions	Yes	No
1. Can you understand and recognize the notation that has been innovated to the colour and number code?	17	0
2. If given the opportunity are you confident to make a musical performance using bell and angklung instruments?	17	0

Based on above Table 1, it has been proven that this study successfully achieved the objective since the targeted students can recognize, understand and read musical notation that has been innovated and can make musical performances by using bell and angklung instruments well.

## 4. Results

Special Education students found that the innovated notation are easier to read, understand and remember musical notation through the colour codes and numbers they have learned. Therefore, they can perform songs using bell and angklung instruments well.

*Figure 7 Students can read and understand the notation of songs that have been innovated with confident, happy and excited.*



The researcher recorded the performance of PPKI students in video playing musical instruments such as *Angklung* and bell well based on the musical notation that has been innovated to colour code and number. In addition, the coordination between the mind, eyes and hands of students can also be improved and more focused when reading the musical notation.

## 5. Conclusions

This study gave a great impact in terms of improving the skills of playing musical instruments, self-confidence, high motivation and fun to play music collaboratively with friends. Initiatively, the researcher thinks that this study should be extended to Pre-School and mainstream students. However, this study requires further improvement and refinement from time to time so special education students can perform at the school and district level somewhere in future.

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## AN INDEX ON DISASTER PREPAREDNESS AMONG SPECIAL EDUCATION LEARNERS OF GENERAL MAXIMINO HIZON ELEMENTARY SCHOOL IN THE TIME OF COVID-19

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### ABSTRACT

Disaster Risk Reduction is one of the most important deliberations globally. It is deemed important that everyone adheres to the Philippine government mandates in its Republic Act 10121- Philippine Disaster Risk Reduction and Management Act of 2010. The ongoing COVID-19 pandemic has confirmed the close link between health and disaster risk reduction (UNDRR, 2021). With the aim to achieve the substantial reduction of disaster risk and losses in lives, our school designed an Index on Disaster Preparedness that geared toward empowering the 4 Pillars of Disaster Risk Reduction with better understanding among our most vulnerable learners and their families. This descriptive research features the Index designed on Disaster Preparedness among Special Education learners of General Maximino Hizon Elementary School in the time of Covid-19 is a program initiative inspired by the School Disaster Risk Reduction Management and was designed explicitly for the learners with disabilities and their families. Eighty-seven (87) learners with disabilities and their families attended a webinar that highlights and enhance the integration of disaster risk reduction on building resiliency, stewardship, and empathy towards a safe, adaptive, disaster-ready families and communities; manage health and related risks including for disease outbreaks, which is a key example of a multi-sectoral approach to disaster risk management.

**Keywords:** Disaster Risk Reduction, Special Education, Learners with Disabilities, Parents of Learners with Disabilities

## 1. Introduction

The Philippines' geographical location is prone to multiple hazards. The government adheres to adopt the universal norms, principles and standards and expressed the country's commitment to overcome human sufferings due to recurring disasters. With its Republic Act No. 10121 also known as the Philippine Disaster Risk Reduction and Management Act of 2010 (PDRRM Act of 2020) promulgated to prescribe the manner, procedures and guidelines for the implementation of the Philippine Disaster Risk Reduction And Management (PDRRM) Act of 2010, to facilitate compliance and achieve the objectives such as adopting a disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in lessening the socioeconomic and environmental impacts of disasters including climate change, and promote the involvement and participation of all sectors and all stakeholders concerned, at all levels, especially the local community. Its objective in developing, promoting and implementing a comprehensive National Disaster Risk Reduction and Management Plan (NDRRMP) that aims to strengthen the capacity of the national government and the local government units (LGUs), together with partner stakeholders, to build the disaster resilience of communities, and - to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks, and enhancing disaster preparedness and response capabilities at all levels. Ensuring that disaster risk reduction and climate change measures are gender responsive, sensitive to indigenous knowledge systems and cultures, and respectful of human rights.

The implementation of Disaster Risk Reduction and Management (DRRM) in basic education is guided by Department of Education's (DepEd) three major outcomes—Access, Quality and Governance. Among the first important steps in the management of disaster is identifying the risk and vulnerabilities of communities. In any given circumstance, disasters will deprive children of their right to a continuous quality, basic education in a safe environment. Such disasters, and at this time, a global pandemic threatens the lives of the children, their families and education personnel.

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) adopted in 2006 was the first significant human rights instrument aimed at protecting and promoting the fundamental rights of persons with disabilities (UNCRPD, 2006). The convention builds and elaborates on rights already set out in the World Programme of Action Concerning Disabled Persons of 1982, and the 1993 Standard Rules for the Equalization of Opportunities for Persons with Disabilities, among other United Nations (UN) human rights instruments (OHCHR, 2010). According to the World Health Organization (WHO, 2007), about 10 % or 200 million of the world's children have a form of disability. These children often require additional educational and physical support and spend much of their school day under the direct supervision of a special educator (UNICEF, 2007).

Research in disaster risk reduction play a vital role to aid practitioners who often needs to do needs assessments, monitoring and evaluation as part of their projects, addressing the needs that has the biggest impact and lastly to answer the question, to what extent did we do what we said we were going to do. In answering these questions, we will be able to aid agencies to improve the way they implement disaster risk reduction programs. Studies on disasters have expanded enormously globally, which calls for frequent synthesis of the research trends and topics, issues, challenges, and strategies and innovations in dealing with disasters.

Amidst global pandemic, schools manage to hold classes through blended distance learning. The Department of Education (2020) in its DepEd Order 12, series of 2020 or the Adoption of Basic Education Learning Continuity Plan (BE-LCP) for School Year 2020-2021 mandated the continuity of learning through a package of education interventions that will respond to the basic education challenges brought about by Covid-19.

Since the announcement of President Rodrigo Roa Duterte in March 2020, placing the entire National Capital Region on Enhanced Community Quarantine All school improvement plans, and its projects pushed through as we shift its objectives, implementation and learners' participation remotely as guided by the BE-LCP. General Maximino Hizon Elementary School has been very active in the disaster preparedness pursuits even when the school was still on face-to-face classes. Now that schools were put on halt which started first week of March 2020, the researchers shifted the focus of disseminating information about disaster risk reduction, shared with families and communities at the comfort of their homes.

This paper aims the following research objectives:

1. to systematically address issues on Disaster Risk Reduction involving learners with disabilities on disaster preparedness, involving their families and communities. When schools were closed and learning continues at home, it is paramount to continue disaster preparedness and educating them incessantly at home.
2. to achieve the substantial reduction of disaster risk and losses in lives, our school designed an Index on Disaster Preparedness that geared toward empowering the Four (4) Pillars of Disaster Risk Reduction with better understanding among our most vulnerable learners and their families.
3. to aid agencies to improve the way they implement disaster risk reduction programs.

The study aims to answer the following research questions:

1. What are the current issues that involves learners with disabilities that we should focus on in the discussion of disaster risk reduction in the time of Covid-19 pandemic?
2. What is the role of information dissemination on disaster risk reduction among learners with disabilities and their families?
3. What assistance can General Maximino Hizon Elementary School provide to learners with disabilities and their families in providing information dissemination on disaster risk reduction in the time of Covid-19 pandemic?

## 2. Disaster Risk Reduction at GMHES

General Maximino Hizon Elementary School (GMHES) is a public school in Tondo, Manila that caters for both regular learners and those with special educational needs. Marginalization can be experienced by any student regardless of labels attached to them (Messiou, 2012). The Schools Disaster Risk Reduction Committee ensures that learners with disabilities were the highest concern in disaster preparedness being an inclusive school. Listening to the children's and young people's voices in itself is a manifestation of being inclusive (Messiou, 2006). Both teachers and learners participate in the evaluation after each earthquake and fire drills are conducted. Children with disabilities are often excluded from disaster risk reduction (DRR) initiatives and, as a result, can experience amplified physical, psychological, and educational vulnerabilities. Research on children with disabilities during disasters is lacking, and their potential value in helping shape inclusive policies in DRR planning has been largely overlooked by both researchers and policymakers.

Children are often excluded from disaster risk reduction (DRR) activities, yet they are one of the most vulnerable groups to disasters. As a result, they experience physical, psychological and educational vulnerabilities. There is lack of research on children's participation in DRR and their potential value in strengthening community resilience has been largely overlooked (Muzuenda-Mudayanh, 2016). While disasters cannot be avoided, the risks faced by children and those with disabilities can be prevented or lessened. Very little research in the Philippines has addressed children with disabilities' vulnerabilities and capacities during times of disaster. Children with disabilities are the least looked upon and listened-to members of society. Hence the need to explore the vulnerabilities of these children with disabilities when disasters strike and hear from them and their families themselves how they can be helped that their needs are met and prepared.

Though there is a long history behind children's rights in international agreements, there is a gap between the rhetoric of the agreements and reality of authorities' provisions for children are particularly vulnerable to the impacts of natural disasters (Mitchell & Borchard 2014). In developing countries, the largest population consists of children who are facing 'daily risks related to persistent poverty, street crime and violence, poor health, no or low-quality housing, and inadequate and ineffective schools and are continually affected by natural disasters.

Reports globally on what has been done and that can be utilized to enhance the participation of children in disasters is that children with illiterate parents can convey messages about DRR. They can also recognize disasters alongside social and economic threats (Mitchell et al. 2008). Though they can convey disaster messages and recognize disasters, they are usually not given the chance to do so. Given the resources, encouragement, and the opportunity to participate, there is also a need to determine the manner in which children can build community resilience in their areas. Needless to say, neither the children with disabilities nor their families were not given the chance to reiterate how vulnerable their situation is should a disaster hit their community.

### 3. Research Method

This paper aims to systematically address issues on Disaster Risk Reduction involving learners with disabilities on disaster preparedness. The focus on how and by whom the research has been conducted to formulate future strategies for strengthening research capacity amid school closures and the implementation of the BE-LCP in structuring this project on disaster preparedness of learners with special educational needs of GMHES.

This descriptive research involves data collection focuses on the particular aspect of behavior as objective as possible and observes the richness and complexity of the behavior of the participants in the study. The researchers obtained data through survey questions, analyzed the participants with a deeper understanding of the complexities involved in disaster preparedness among the learners with disabilities and their families.

The Schools Disaster Risk Reduction committee conducted a webinar on disaster management to families of learners with disabilities, teachers and administrators. The resource speaker was the Schools Division Disaster Risk Reduction Coordinator. The webinar was well attended with 87 parents and guardians across all classes from special education. The webinar lasted for 2 hours, and information were systematically disseminated to parents and learners with disabilities (hearing, visual, intellectual disability and autism spectrum). The survey form was sent through google form after the webinar conducted to the parents.

The researchers conducted a survey (IDI). The gathered data from the interview with the targeted participants was then transcribed and translated by the researchers. Among the answers given by the said respondents, the researchers have evaluated their prior knowledge about the said topic. The transcription was then analyzed and showed results.

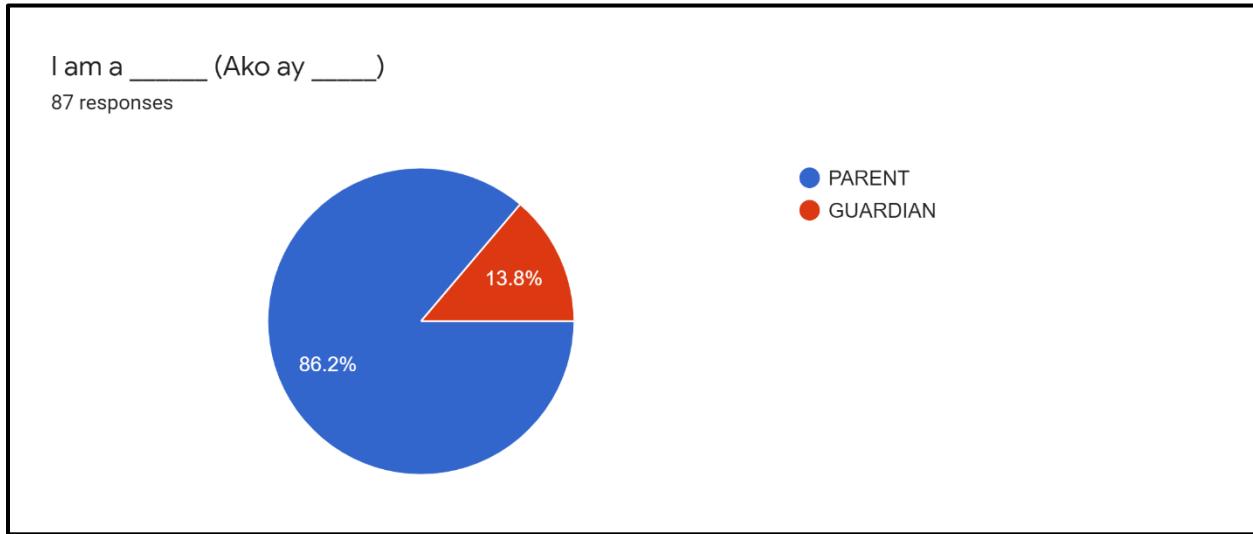
### 4. Results and Discussion

Since the 1970s, the Philippines has updated the legal foundations for disaster risk reduction and management, focusing on response-centric interventions as well as disaster prevention, preparedness, and mitigation activities. Since 2003, local risk governance legislation has been supplemented to allow the use of local calamity funds for disaster preparedness and mitigation. However, these were considered insufficient to support change at the local level. This acknowledgement led to the enactment of the Philippine Disaster Risk Reduction and Management Act of 2010 (or Republic Act 10121), as the country's foremost legal instrument and guiding policy framework driving DRRM momentum across various governance levels.

With the participation of stakeholders, including civil society and the private sector, a national disaster response plan was developed and adopted for various hazards and disaster scenarios. The NDRRMC Operation Center was created to monitor, evaluate, and coordinate disaster response operations. Pre-Disaster Risk Assessment – Actions Programs and Protocols (PDRA-APP) and capacity building for emergency preparedness, Incident Command System (ICS), Search and Rescue, and PDNA are all activities of the OCD. OCD, in collaboration with other government counterparts such as DILG and the Philippine Public Safety College (PPSC), has continued to provide DRM support to LGUs. Some LGUs have also already established their own local operations center.

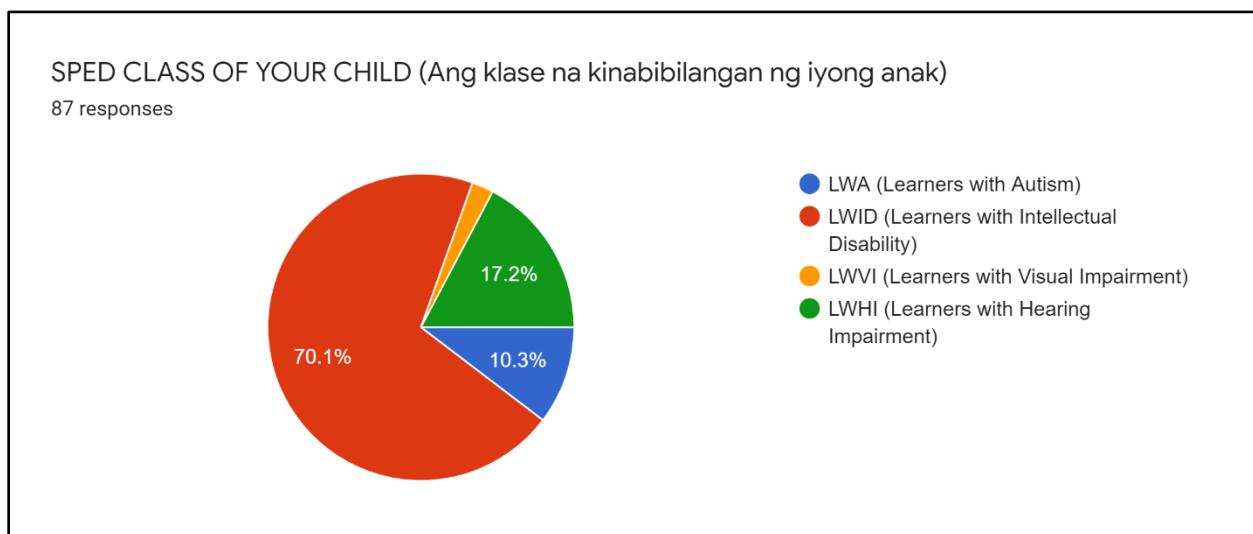
The following figures show the responses of the parents in the survey conducted after the webinar on Disaster Risk Reduction was organized.

Figure 1



The figure above shows that among 87 attendees of the webinar on Disaster Preparedness for Learners with Special Educational Needs, 75 participants are parents (86.2%), while 12 participants are guardians (13.8%).

Figure 2

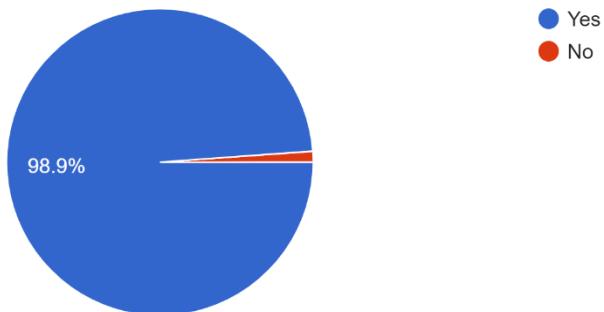


The figure above shows the attendees of the webinar, the distribution of the classes which their learners are enrolled.

Figure 3

I understand this webinar on Disaster Risk Reduction (Naintindihan ko ang webinar na ito ng Disaster Risk Reduction).

87 responses

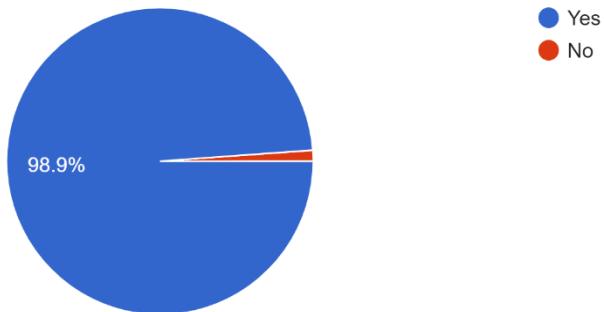


The figure above shows that among 87 attendees of the webinar on Disaster Preparedness for Learners with Special Educational Needs, 86 participants (98.9%), expressed their understanding of the webinar while 1 participant (1.1%) think otherwise.

Figure 4

This webinar will help me and my child with disability towards meaningful DISASTER RISK REDUCTION. (Makakatulong ang webinar na ito s...ng sa makabuluhang DISASTER RISK REDUCTION).

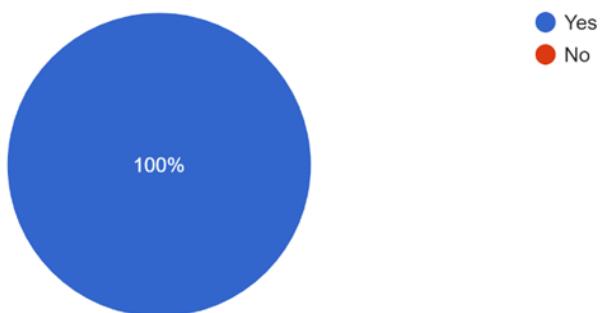
87 responses



The figure above shows that among 87 attendees, 86 participants (98.9%), expressed that the webinar will help them toward meaningful disaster risk reduction while 1 participant (1.1%) think otherwise.

Figure 5

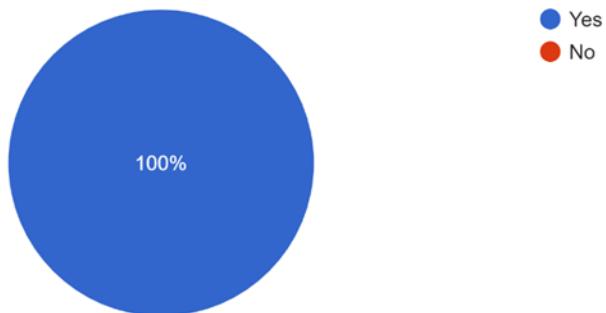
I can do the HAZARD MAPPING in our home to ensure safety in disasters. (Maisasagawa ko ang HAZARD MAPPING sa aming tahanan upang masiguro na ligtas ang aming pamilya sa sakuna)  
87 responses



The figure above shows that among 87 attendees, all participants believe that they can do the Hazard Mapping at home to ensure safety in disasters.

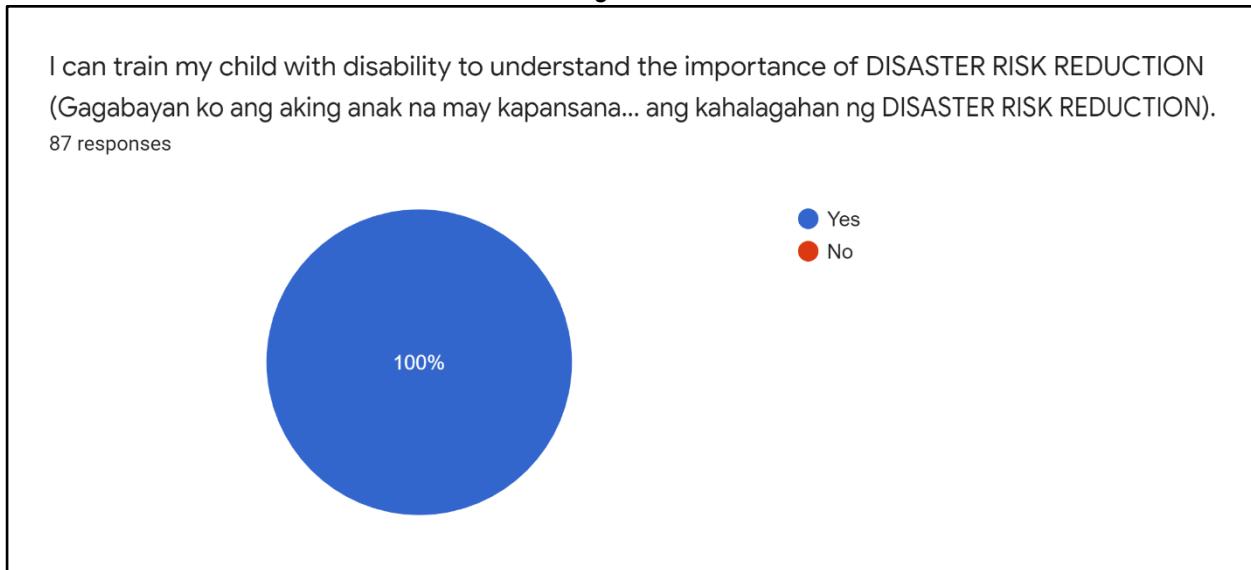
Figure 6

I can train my child with disability to understand the importance of DISASTER RISK REDUCTION (Gagabayán ko ang aking anak na may kapansana... ang kahalagahan ng DISASTER RISK REDUCTION).  
87 responses



The figure above shows that all 87 attendees (100%), believe that they can do the Hazard Mapping at home to ensure safety in disasters.

Figure 7



The figure above shows that all 87 attendees (100%), believe that they can train their child at home to ensure safety in disasters.

## 5. Conclusion

The limited research focused on children with disabilities during disasters highlights a pressing need for further study to assess and understand effective pathways for ensuring active participation of children with disabilities, both at school and in the community (Mihaylov et al. 2004).

This study has carefully looked in the experiences of the learners and their families. While it is fairly concluded that, as there is no field research specific to the experiences of children with disabilities in response to disaster has been undertaken, we at General Maximino Hizon Elementary School are yet to establish how we can well equip disaster preparedness among learners with disabilities and their families, in our school, within the schools and across the country. Children with disabilities have been overlooked in DRR initiatives and may also have difficulties obtaining access to resources in the face of disasters, thus making them potentially vulnerable when facing natural and other hazards.

There may also be a lack of commitment by decision-makers to accept the views on how learners with disabilities and their families a failure in has been representing them in disaster preparations. In most developing countries, communities do not believe in children's rights but rather that children should follow what the elders say and, in our case, how the community will perceive their situation and vulnerability and helping them in the most compassionate way the community can should there be an unfortunate event or disaster.

Disaster risk is also a complex issue involving the physical environment, and the social, cultural, political and economic spheres of the society. This complexity is the major obstacle to effective children's participation in DRR. A holistic approach can be applied for effective DRR, but that option has failed to influence policy makers in most developing countries.

In conclusion, the Disaster Risk Reduction Management in General Maximino Hizon need to establish, strengthen and plan more programs and advocacies involving learners with special needs and their families. Furthermore, now that we are in the time of pandemic, our responses should be tailor made for mitigation and disaster risk reduction at home and in communities.

## 6. Recommendations

The School Disaster Risk Reduction Committee is committed in establishing a strong impact on disaster preparedness by not stopping in information dissemination to ensure a positive response among its teaching force, staff, learners, their families, their communities, and all stakeholders.

As a recommendation, the infographics will take a big leap as we kick-off the cycle of this research: access of families of SPED learners to a printed infographics that will be posted in their house. The more these infographics will be present, the better retention of the disaster risk reduction through meaningful and colorful story map representation of the infographics.

Another, discussion of the results to other SPED schools in Manila, and eventually to more Divisions and Regions so they can put up their own webinar such as this and adopt the infographics for their learners with disabilities.

Lastly, to have this study presented in different research fora, to promote the impact of disaster risk reduction and promoting inclusion of the learners with disabilities and families and discuss how such studies can influence policy makers, administrations and each of us that their voices will be heard in disaster reduction in our society.

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## DEALING WITH CHILDREN WITH DISABILITIES DURING COVID 19: UNDERSTANDING PARENTAL PERSPECTIVES

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### ABSTRACT

Parents of children with disabilities often appear to experience considerable stress and weakened emotional-well being. It is likely that the anxiety and emotional state of the parents are further exaggerated due to disrupted schedules of their children with disabilities during COVID 19 pandemic because of long-term school closure. The study aims to understand parental perspectives of dealing with children with disabilities during COVID 19 pandemic with an emphasis on the parent-child bonding. Fifteen parents and caregivers of children with disabilities participated in this qualitative study through semi-structured telephonic interviews. They were asked questions about behavioural changes of their children as well as bonding between themselves during this pandemic. Interview data were transcribed verbatim and thematic analysis technique was performed through manual coding. The findings of this study reveal that, significant behavioural changes of children with disabilities including increased restlessness, anger, fear, stress, hyper-activity, unwillingness to participate in academic as well as daily living activities, lack of motivation and concentration, significant learning loss, increased tendency of self-harming have occurred during covid-19 outbreak. The parent-child bonding seems to be highly affected (e.g. decreased quality time span & loss of parental patience during joint attention) by children's behavioural changes occurred due to school closure. Overall, the study finds that the emotional wellbeing of parents of children with disabilities and their bonding with their children have been unfavourably impacted by COVID19 pandemic. The study recommends that access to therapeutic services to support children with special needs can minimize the adverse effect of this lockdown. In addition, provision of expert wellbeing support for parents is also recommended.

**Keywords:** Covid-19 pandemic, Bonding, Parents, Affect, Behavioural Change, Perspective.

### 1. Introduction

Human lives are threatened by the breakout of the novel Coronavirus Disease 2019 (COVID-19). As of 29th April 2021, COVID-19 has affected more than 140 million individuals across 184 countries (World Health Organization, 2021). In Bangladesh, the first case of COVID-19 was identified by IEDCR on 8 March, 2020 (Dhaka Tribune, 2020). The government of Bangladesh announced school closure from 18 March, 2020 to prevent the transmission of coronavirus (MoE, 2020). A total of 700 Thousands people are infected by this devastating virus as of 29 April, 2021 in Bangladesh (DGHS, 2021). This new COVID infection is pronounced to be a worldwide pandemic by the World Health Organization (Bandyopadhyay, 2020). As COVID-19 pandemic keeps on extending in Bangladesh and in

the world, the current flare-up isn't just affecting wellbeing and monetary circumstances yet additionally on mental prosperity of people (Unicef, 2020). The everyday lives of families and children have likewise been changed, as numerous nations have shut schools, parks, and child-care facilities (Chung, Lanier, & Wong, 2020). In the current setting of lockdown and limitation of movements, children have compelled admittance to socialization, play and physical contact which are basics for their psychosocial wellbeing and advancement (Unicef, 2020). School terminations are keeping youngsters from admittance to learning and restricting their collaborations with peers which is causing anxiety in them (Imran, Zeshan, & Pervaiz, 2020). Coronavirus is additionally bringing new stressors on parents and guardians which can hamper their ability to give sufficient care and stay engaged and co-operative with their child, specially for those who have children with special needs, these challenges are exacerbated (Cluver, Lachman, Sherr, Wessels, Krug, Rakotomalala....McDonald,2020). However, according to Unicef (2020), across Europe and Central Asia, children with disabilities are profoundly helpless against shame, separation and isolation from the remainder of society. Also, presently, with the Coronavirus pandemic, they face much more serious dangers of rejection, neediness and an absence of admittance to urgent crucial services (Unicef, 2020). This study attempts to reflect behavioural changes of children with disabilities due to COVID-19 pandemic that may strongly affect parent-child relationships.

## 2. Literature Review

Parents dealing with children with disabilities face significant difficulties related to their physical, financial, emotional, psychological well-being as well as family and social life (Nimbalkar, Raithatha, Shah & Panchal, 2014). Children with disabilities require more attention as well as time from parents, which can increase parental stress (Algood, Harris & Hong, 2013). Children with Intellectual Disability and Autism Spectrum Disorder are more likely to experience increased stress, depression and anxiety (Cooke, Smith, & Brenner, 2020; Mutluer, Doenyas & Aslan Genc, 2020; van Steensel & Heeman, 2017). Parents of children with disabilities seem to obtain a lower score in terms of Quality of Life (QOL) that is significantly correlated with their children's functional independence (Leung & Li-Tsang, 2003). The current COVID-19 context has disrupted life in every corner of the world and will likely disproportionately affect those children with pre-existing vulnerabilities (Unicef, 2020).

School closure, social distancing and home confinement may have adverse effects on children with and without disabilities (UNESCO, 2020). Moreover, research shows that the parental stress and emotional well being of parents of children with disabilities had been ominously affected by Coronavirus pandemic (Alhuzimi, 2021). Parental unemployment, financial crisis, low level of social support, mismatch between the demands of parenting and resources available to meet those demands may cause parental burnout that leads to child abuse and negligence (Griffith, 2020). Obligatory home confinement due to COVID-19 raises the time period to be spent with the child. Parents with children with disabilities are likely to develop more stress and depression during COVID-19 pandemic (Dhiman, Reed, Ganesh, Goyal, & Jain, 2020) and may face increased demands in terms of supporting their child (Tolan, 2020). Depression among parents and caregivers is strongly correlated with employment status (Nam & Park, 2017). Literature shows that parents of children with disabilities face a higher proportion of losing jobs and children's increased inaccessibility to learning materials and healthcare support since the emergence of COVID pandemic compared to those without disabilities (Save the Children, 2020). Parental stress directly affects parent-child relationship closeness (Chung et al., 2020 ; Russell, Hutchison, Tambling, Tomkunas & Horton, 2020).

Children with disabilities are considered as a high-risk population and most vulnerable to COVID-19 pandemic (Gabrielli & Lund, 2020; Wong, Ming, Maslow & Gifford, 2020). The outbreak seems to have long-term impact on the development of children with disabilities (Neece, McIntyre & Fenning, 2020). Some literature focused on the challenges faced by the families of children with disabilities due to the pandemic (Mbazzi, Nalugya, Kawesa, Nimusiima, King, van Hove & Seeley, 2021; Neece et al., 2020). Focus on the advocacy, collaboration and necessary support service has been given through a number of researches conducted in Italy, Spain, China, UK, Saudi Arabia and other countries (Navas, Amor, Crespo, Wolowiec & Verdugo, 2021; Frederick, Raabe, Rogers & Pizzica, 2020; Goh, Lim, Foo, Ong, Aishworiya, Nair,.....Sung, 2020; Samadi, Bakhshalizadeh-Moradi, Khandani, Foladgar, Poursaid-Mohammad & McConkey, 2020; Toseeb, Asbury, Code, Fox,& Deniz, 2020; Toquero, 2020). According to previous research parents as well as caregivers are left alone not just in dealing with their childrens' home-tutoring yet in addition to dealing with their children and the home environment all in all. During the isolated interaction, the day to day environments of the families have changed abruptly and significantly. In the home environment, the instructive part and educational role of guardians for children has gotten a lot more significant than previously (Uzun, Karaca, & Metin, 2021).

Teaching children with disabilities at home addresses an alternate test to instructing neurotypical children. The effect of home education is probably going to be felt especially distinctly by the guardians of children with disabilities who were abruptly needed to address their children's issues throughout the day and consistently, without the usual support (Toseeb et al., 2020). Several research focused on E-inclusion,home education and distant learning for children with disabilities (Aarnos, 2021; Nusser, 2021; Parmigiani, Benigno, Giusto, Silvaggio & Sperandio, 2020). The outbreak of the Coronavirus pandemic toward the start of 2020 constrained a large number of school understudies to change from face to face instruction to distance learning (Aarnos, 2021). Although there exists a few studies on parent-child interaction and attachment (Uzun. S, 2020), limited qualitative studies are found regarding the behavioral changes and bonding between children with disabilities and their caregivers during Covid-19 pandemic.

Bangladesh is home to an immense number of individuals with disabilities – albeit tragically there is no particular information showing the specific number. The 2016 Household Income and Expenditure Survey showed that almost 6.94 percent of the populace was composed of individuals with disabilities (in excess of 11 million individuals), however the World Health Organization assesses that it is probably going to be more like 15%. As per the Situation Analysis on Children with Disabilities (2014), children with disabilities in Bangladesh are clearly among the most marginalized while referred to schooling (Unicef, 2020). There are various sorts of instructive arrangements in Bangladesh for children with disabilities. These incorporate for the most part; special education, integrated education, mainstream education. Other than these arrangements, home based education is to a great extent seen when other alternatives are not open. Home-Schooling is fundamentally relying upon guardians and relatives to give training to their children at home (Campe, 2011). As Bangladesh has a centralized education system, with the announcement of school closure from the government all the educational institutions were closed including schools for the children with disabilities.

### 3. Objectives

This study investigates parental perspectives of dealing with children with disabilities during COVID-19 pandemic with an emphasis on the parent-child bonding. This study attempts to answer to the following research questions:

- (i) What type of behavioral changes have occurred in children with disabilities during COVID-19 pandemic according to their parents?
- (ii) How COVID-19 period affect the bonding between the parents/caregivers and their children with disabilities?

### 4. Methodology

A combination of purposive and maximal variation sampling was performed to conduct this qualitative study. Data was collected from 15 parents and caregivers of children with disabilities until the data saturation took place. Each parent gave informed consent to participate in this study. Having at least one child with disability was the inclusion criteria of purposive sampling. Authors tried to address different types of disabilities (e.g. Physical Disability, Intellectual Disability, Autism Spectrum Disorder, Hearing Impairment, Visual Impairment, Down Syndrome and Multiple Disability) through maximal variation sampling. Semi-structured telephonic interviews were taken to conduct in-depth interviews and collect data from the participants. They were asked questions about behavioral changes of their children as well as bonding between themselves during this pandemic. It took approximately 15-20 minutes to complete each interview. Interview data were transcribed verbatim and cross-checked with the audio tapes to avoid mis-information and exclusion of any relevant data.

Thematic analysis was performed manually to analyze the data through the following steps: (i) Familiarizing and transcription of verbal data, (ii) generating initial codes, (iii) searching for themes, (iv) theme reviewing, (v) defining and naming themes and (vi) producing the report(Braun & Clarke, 2006). Authors coded the data individually, then cross-checked as well as resolved the issues through discussion. Participants's socio-demographic data were descriptively analyzed by the Statistical Package for the Social Sciences (SPSS).

#### 4.1 Socio-demographic Profile of the Participants

Participants' sociodemographic data including parents and caregivers' gender, age, community, occupation, children's age and types of disability are presented through Table 1.

Table 1: Sociodemographic data

Variables	n(15)	%
Gender	Male	2
	Female	13
Age (year)	20-25	1
	25-30	3

	30-35	1	6.7
	35-40	7	46.7
	40-45	2	13.3
	45-50	1	6.7
Community			
	Urban	9	60
	Rural	6	40
Occupation			
	Businessman	2	13.3
	Day Laborer	1	6.7
	Housewife	8	53.3
	Service Holder	1	6.7
	Tailor	1	6.7
	Teacher	2	13.3
Children's Age (year)			
	5-10	3	20.0
	10-15	11	73.3
	15-20	1	6.7
Children's Type of Disability			
	ADHD	1	6.7
	Autism (ASD)	3	20.0
	Down Syndrome	2	13.3
	Hearing Impairment (HI)	2	13.3
	Intellectual Disability (ID)	2	13.3
	Multiple Disability (MD)	1	6.7
	Physical Disability (PD)	2	13.3
	Visual Impairment (VI)	2	12.3

## 5. Results

A total of 15 in-depth interviews were taken for this study. Among them only 13.3% are male, the rest 86.7% participants are female. 60% of the study participants were living in urban areas, whereas 40% of them were living in rural areas. Most of the participants were housewives (53.3%). Other participants were involved in different occupations like business (13.3%), teaching (13.3%), tailoring (6.7%) and day labour (6.7%). Childrens' types of disability included ADHD (6.7%), Autism Spectrum Disorder (20%), Down Syndrome (13.3%), Hearing Impairment (13.3%), Intellectual Disability (13.3%), Multiple Disability (6.7%), Physical Disability (13.3%) and Visual Impairment (13.3%).

### 5.1 Theme-01: Behavioral Changes of Children with Disabilities due to COVID-19 Pandemic

A total 15 respondents provided their opinion regarding behavioral changes of the children with disabilities during the pandemic. Transcribed data of the participants were categorized into some sub-themes.

**Increased restlessness :** Majority of the participants (9/15) reported that their children have developed increased restlessness as well as inconsistency and anxiety. Parents reported inaccessibility to all kinds of therapies and interventions, changes in routine, suffocation due to home confinement to be main reasons for this behavioral change. One of the interviewee stated that:

She liked school very much. School closure made changes in her routine. She couldn't accept this. Everyday she takes her bag and wants to go to school at her school time. When we tell her that we can't go to school, she starts crying and shows restlessness. (Respondent 10)

The condition seems to be more serious in children with Neurodevelopmental Disabilities like those with Attention Deficit Hyperactivity disorder (ADHD), Autism Spectrum Disorder (ASD) and Intellectual Disability (ID). Parent having a child with ADHD noted that:

As he is a child with ADHD, he has to take some exercise regularly from his school. We faced inaccessibility to all kinds of therapies and exercises due to Covid. So, we have no control over him. He is too restless and this has increased nowadays. He wants to go out but he is not willing to wear a mask. He throws it out. (Respondent 7)

**Showing increased stress and fear :** More than one-third of the study participants (6/15) noticed increased stress and fear in their children's behavior. According to the respondents, long term home confinement creates an additional pressure on their mental health which is expressed through these types of behaviors. One of the interviewees reported, going out of the house after so many days made her child very frightened and insecure. She stated that:

Whenever we take him outside nowadays, he starts screaming and gets scared. Maybe he gets frightened coming outside after so many days. (Respondent 3)

Moreover, inability to cope with the online classes as well as the new normal make children with sensory disabilities more stressed and fearful of the post-covid world. Parent of a child with Visual Disability said:

He stays home all the time and often shows stress about being unproductive for this long time. He gets disappointed at small things and as he is not that much expert in using

technology, he is passing boring time, even cannot attend the online classes if he wants to which seems very depressing for him. (Respondent 11)

**Significant learning loss** : 6 out of 15 participants noted that their children are facing significant learning loss including socialization skills and ADL (Activities of Daily Living) due to this pandemic. According to the parents, lack of regular practice and monitoring make their children facing learning loss. Parent of a child with ASD noted that:

She learnt a lot from her school, but now she can't recall them. We notice significant learning loss. I can't make her regularly practice these types of activities as I can't give her enough time. I have a personal business. As you know this type of children depend solely on practice. If it is not continued regularly, the child may forget those. (Respondent 10)

**Increased anger** : 5 among 15 participants reported increased anger in their children with disabilities. They are showing tantrums as their families are not allowing them to go outside. One of the respondent reported that:

He wants to go outside as he feels some type of suffocation. But we don't allow him to do that. Then he shows anger and stops eating. (Respondent 1)

**Less interest in performing academic and daily activities** : Some respondents (4/15) opined that they notice a lack of interest in their children in terms of performing academic and daily activities. Parents reported that some schools have arranged online classes for their children, but these types of online classes don't work for them. Parent of a child with Hearing Impairment stated that:

He can't join online classes as he has problems in hearing. He is not willing to continue his study anymore. (Respondent 1)

Parents also reported that their children are troubling with lack of concentration and motivation which may refrain them from performing daily activities properly. Some parents also noticed increased laziness in their children due to school closure. One of the interviewee dealing with a child with Down Syndrome reported:

He has become very lazy compared to the days before covid. He was more active before. I have to force him to do his daily work.....Being lazy, he is becoming bulky. (Respondent 5)

**Increased hyperactivity** : A few respondents (2/15) reported their children's hyperactivity to be increased a lot more than before. Mother of a child with Intellectual Disability noted that:

Repetitions in unexpected behaviour also increased. He also disturbs his siblings more than before. If any guest comes to our house his problem arises more. He starts to disturb them also. (Respondent 13)

**Increased tendency of self-harming** : Only one respondent opined that her child's tendency to self-harm has increased in this pandemic period than before. She said:

.....often she hits herself. When she goes to school she shows these behavioural issues less. (Respondent 10)

## **5.2 Theme two: Bonding between Parents and their Children with Disabilities During COVID-19**

The bonding between parents, caregivers and children with disabilities have taken a new dimension during COVID-19. The changes can be explained in several sub-themes.

### **5.2.1 Decreased Quality Time Span Leading to Weakening Bonding**

4 out of 15 participants (almost one-third of the participants) reported that before the quarantine period, children and parents used to spend less time home, after working all day they used to spend fruitful time which was favourable for each other, but due to lockdown the scenario has changed. One parent stated that she faces mental pressure and stress when she thinks about her child. She further said:

I am often tense about my child. Bonding between my child and myself becomes stronger when I take my son outside to spend some time together. But in this situation it is impossible for me, so I get less quality time with my child which is creating chaos between us. (Respondent 3)

During this COVID-19 lockdown, violence was accounted for at a higher rate in families with parents/caregivers or children with disabilities furthermore, those families all the more often detailed boundaries to getting to abusive behavior at home and mental health services (Save the Children, 2020).

### **5.2.2 Decisive Impact to Some Extent for Spending Together (parent-child) Time**

3 among 15 participants have found some positive consequences of lockdown. Due to home confinement, parents are spending more time with their children. One of the participant mentioned:

My child is now staying closer to me and I am able to teach her some household activities with the child's participation has increased than before (Respondent 14).

While interviewing a parent of an ASD child, she reported that:

Previously, we couldn't give him enough time. But now we spend more time with him. (Respondent 2)

Another parent of an ADHD child stated that:

Due to the lockdown, his father's office is closed so he can give enough time to our child. Previously, he was unaware about child's care, but now spending more time with my child has made him understand the issues.....Our child has improved in terms of eye contact. Our understanding has improved (Respondent 7).

Children are learning a lot of new activities in their stay home period too, one of our participants explained that she tries to keep her child busy in drawing, dancing etc and maintain a daily routine for the child (Respondent 9).

### 5.2.3 Loss of Parental Patience

Majority of the participants (7/15) talked about their suffocation and stress about their child. A mother who has a child with Down Syndrome stated:

Sometimes, I feel very upset with all these. I feel stressed and just wait to start our regular life like before. We had routines for both of us when everything was normal. Now it has all changed, that's what makes me feel suffocated. As my child doesn't want to perform his duties timely nowadays and shows laziness. (Respondent 5)

Moreover, one participant mentioned her increasing restlessness for dealing with her child all day which gives her trumpet tantrum often and she is unable to control and later she shouts at her child.

I often get tired as I have 3 more children to deal with and he destroys things and disturbs his siblings. I must confess that I run after scolding him when I can't take it anymore. I threaten him with a stick in my hand that I'm going to scold him if he doesn't hear me. Then he gets afraid and calms down for some time. Then again starts it (Respondent 13).

A participant dealing with a child with ASD mentioned:

Before Lockdown when she went to school and spent 3-4 hours with her teachers, I at least had some time for myself. I used to feel relaxed and talk with my friends and companions. But in this lockdown period this is not possible. I have to look after her 24/7, deal with her restlessness and make her calm. It becomes difficult for me to control my tantrum (Respondent 10).

## 6. Discussion

In this study, we investigated the effect of the COVID-19 episode on guardians' and childs' mental wellbeing, bonding, behavioral changes with specific reference to families of kids with disabilities. All the more explicitly, we researched parental viewpoints about their childrens' behavioural patterns and their interaction during and before the pandemic. Additionally, we investigated the reasons which drove changes in conduct and how they can be dealt with to limit the effect of home-restriction. Studies led on the pandemic pestilence have uncovered that the pandemic influences psychological wellness (Golberstein, Wen, and Miller, 2020).

The present study reveals that children with disabilities are confronting significant changes in terms of behavioral outcomes. Changes in routine, inability to adapt new strategies, physical isolation from peers, disintegration of support networks have profound behavioural consequences on children with disabilities (Asbury, Fox, Deniz, Code & Toseeb, 2020 ; Wong et al., 2020 ; Juneja & Gupta, 2020). The study found increased restlessness among children with disabilities according to their parents' perception. This goes consistent with previous study that revealed more aggression and typically regressive behaviour, misbehaviour and temper tantrums among children with disabilities during COVID pandemic ( Imran, Zeshan & Pervaiz,2020). This study addressed that more than one-third of the participants explained to notice increased stress and fear among their children with disabilities. Previous studies that found children with disabilities to be more likely to face acute anxiety, stress and fear during this pandemic support this finding (Asbury et al, 2020; Mutluer, Doenayas & Aslan Genc,2020; Liu, Bao, Huang, Shi, & Lu, 2020). Lower understanding of the pandemic situation in minimal and non-verbal children is often expressed through stressed and troublesome behaviour (Asbury et al, 2020). Feeling of tremendous distress and worsened mental health sometimes turns into self-harming

activities (Theis, Campbell, De Leeuw, Owen, & Schenke, 2021), especially those with Autism Spectrum Disorder (Mutluer et al., 2020). In case of children with sensory impairments, inability to attend online classes like their peers causes an extra mental burden and distress, which is expressed through stressed behaviour. Another study in Malaysia which goes consistent with this finding reported that children with sensory impairment struggle with comprehending their lessons delivered through online classes as well as familiarity with online devices (Krishnan, Mello, Kok, Sabapathy, Munian....& Kanan, 2020). Home confinement due to school closure and stress resulting from the crisis may lead to difficulties in learning and cause learning regression (World Bank, 2020; Theis et al., 2021). This study points out significant learning loss among the children with disabilities due to inaccessibility to regular therapy and intervention services. Unwillingness to perform academic and daily activities due to lack of motivation and concentration is another finding of this study that supports the previous study that revealed lack of motivation in children with disabilities causes significant behavioural change which is hard for the parents to cope with (Asbury et al, 2020). In addition, we also found increased hyperactivity of the children with disabilities in this study. In support of this finding, Imran et al., 2020 and Mutluer et al., 2020 pointed out children with disabilities to form hypersensitivity and demand more attention from the parents and caregivers during this covid period.

As a subsequent advance, we researched the bonding among children and parents during the lockdown. We discovered a slump in quality time spending, decline in parental tolerance were the principal indicators of parental stress. Consequently, it appears to be that the connection among guardians and children are even more significant during the pandemic cycle. In this interaction, children need to spend all the time at home with their folks and kin until the pandemic finishes. The significant thing is to assist them with getting this interaction as sound people (Uzun et al.,2021). Concerning children's attachment with guardians (as perceived by the parents), we found that guardians revealed a significant loss of parental patience as their children seem not to listen to them often and they show increased levels of hyper-activity, stubbornness and anxiety. The result explored that, parents who have more children experience more trouble during this home quarantine. In support to this, Uzun et al., 2021 defines as parents are left alone at home not only taking care of their children's schooling, but also helping them to cope with the home environment, mothers who have only one child participate more in their children's activities and feel less burdened. Concerning parental stress, researchers tracked down that the Coronavirus pandemic and the connected exacting regulation estimates had a negative sway, autonomously of the children's demonstrative status. Truth be told, both the guardians of kids with and without disability, reported expanded parental pressure during the lockdown contrasted with previously (Bentenuto, Mazzoni, Giannotti, Venuti, & de Falco, 2021).

Furthermore, this study found that there are also definitive positive impacts of home confinement to some extent. By spending more time together, giving the parents and child opportunities to explore and understand each other better than before, their communication is improving. In research from Mbazzi et al (2021), it is also found that the first phase of this COVID-19 lockdown improved connections and comprehension in the families of children with disabilities, ensured more friendly practices among the children, saving practices and adequate time for family works. Children are getting oriented with new activities. Their active association is bringing positive consequences, their support in the family has expanded. Being a parent of children with disabilities is often stressful and parents need a lot of endurance, the lockdown has made this scenario even more tough. Parents seem to experience extended challenges just as an additional difficulty in endeavoring to fulfill the requirements to their parental job during the COVID-19 pandemic, which has been featured in previous research (Bentenuto et al., 2021).

## 7. Conclusion and Recommendations

To summarize, our qualitative outcomes uncovered an overall expansion in parental pressure and adverse consequences of the quarantine period on childrens' practices during home confinement. Moreover, our results show the importance of initiating support services as well as intercessions that straightforwardly include the guardians. The study recommends that access to therapeutic services to support children with special needs can minimize the adverse effect of this lockdown. In addition, provision of specialized wellbeing support for parents is also recommended. If parents try to be resourceful for their children with necessary knowledge and support, the quality of time spent can be increased which may positively impact the bonding between themselves and their children.

Notwithstanding a lot of the challenges that have emerged during the isolation period, we tracked down that a few guardians admired the chance to invest more energy on their child, passing more time and felt that this has fortified the parent-child relationship. Research also showed that support from both of the parents inside the family positively impacts the parent-child relationship during the isolated cycle (Uzun et al., 2020).

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## THE DEVELOPMENT OF AQUAEXPLORERS MODULE FOR SPECIAL EDUCATION TEACHERS IN PENANG: A PILOT STUDY

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### ABSTRACT

**Background** Although an aquatic activities such as swimming and hydro therapy is a common activities in Special Education classes in Penang, there are no one specific module that can be used as a guidance for that activities which contributed to an activity without objectives and goals **Aims** This study aimed to discover the effect of Aquaexplorers Module implementation on the knowledge and self-confidence of Special Education Teachers in Penang. The limitations of this study is to test this module during a pandemic. **Methodology** 17 Special Education (Learning Disability) teachers in Penang participated in a three day course on Aquaexplorers Module implementation. A pre-test consist of a questionnaire was given before the course begin to see the baseline of the teachers current knowledge and confidence in handling water activities and a post-test using same questionnaire was given after the course ended. The questionnaire is validated by Cohen Kappa validation test. **Result** A Chi Square test showed that the level of knowledge and confidence of the Special Education teachers in the post-test were significantly increased ( $M= 46.11$ ,  $SD = 3.230$ ) after the implementation of Aquaexplorers module compared to the pre-test score ( $M= 33.11$ ,  $SD = 2.208$ ). Simplified yet more suitable instructions, objectives and activities in a module can be used to improve the Special Education teachers knowledge and confidence in handling water activities. Future research can focus on improving the of Aquaexplorers Module for Special Education Teachers based on the suggestion from this pilot study.

**Keywords:** Special Education; teachers, aquatic activities, modules, knowledge, confidence

### 1. Introduction

Pupils with special needs (learning disabilities) are often associated with psychological and neurological difficulties against language response either oral, written, cognitive perception or psychomotor activity. Pupils with special needs (learning disabilities) are actually unable to follow classes using the syllabus and pedagogical ways for normal children in the mainstream classes (Ali & Sahal, 2016). This is due to the difference approach needed for them compared to the ordinary children. Physically, special needs (learning disability) students do not have any physical, emotional, vision, hearing or mental disabilities and this is the main reason why most people cannot identify them and treated them the same as the students in the mainstream.

However, there are ways to identify these children, one of which is to know their unique features. Among the features that are easy to identify are unsatisfactory academic achievement, weak in mathematical and language subjects and also do not show interest in the classroom (Ali & Sahal, 2016). It is observed that they are also only able to focus on teaching and learning activities in a short period, are often drowsy, easily distracted and always embarrassed to ask questions in the classroom even if they do not understand (Ali & Sahal, 2016). Due to these factors, special needs students are usually left out in the main stream classes. As a special education teacher, we should know these factors in order to identify the appropriate teaching and learning delivery method for these special needs (learning disability) students.

The Special Education Integration Program (PPKI) has varieties of interesting and appropriate pedagogical techniques for special needs (learning disability) students and among them is the Classroom External Learning (PLBD) which includes various activities such as study tours and field activities such as water activities. The objective of the PLBD's programme is to prepare students to learn through the concept of teaching, learning and assessment process. Classroom External Learning (PLBD) consists of three domains which are knowledge, attitude and skills (Sulaiman et al., 2011). Classroom External Learning (PLBD) also enables students to think and master knowledge through contextual experience, enhance interest and attitude of students to learn and apply pure values and socialization in themselves.

Confident is a word derived from a Latin word "Confider" which means "to trust" while self-confidence means to have trust and faith in ourselves, believe in our ability in performing some tasks (Kharani, 2019). As a Special Education teacher, to have confidence in handling special needs students is very important in ensuring quality learning and to boost the student confidence optimally. Past research show that teachers gain their confidence through expansions in professional field by acquisition of knowledge and skills, participation in networks of collaborative learning communities and the ability to exercise professional teaching (Nolan & Molla, 2017). Thus, the teacher confidence can be boost through their engagement with students based on experience, gain knowledge for their teaching skills and participate in a course with the fellow teachers. In a study related to handling challenging behaviour of special education students, the data analysis showed that teachers with less experience teaching special needs students have the least confidence in managing the challenging behaviors of the special needs students with only 44% contribution in this matter (Byrd & Alexander, 2020). The more interesting finding is, 90% of the participants reported that experience was the biggest contributor to their confidence in managing challenging behaviors (Byrd & Alexander, 2020). This result proved that individuals without experience handling special needs students will have problems handling water activities for the students. Teacher confidence and school type also determined to be significant predictors for the self-efficacy of teachers in handling special needs students (Chao et.al; 2017).

## 1.1 Water Activities in Special Education Classes

Classroom External Learning (PLBD) consists of three models which are PLBD model 1,2 and 3. PLBD model 1 is conducted outside the classroom within the school area such as in the computer labs, Science Laboratory and Herbal Park. The PLBD 2 model is PLBD conducted near the school area such as the village area, outside the school fence and nearby housing estate. The PLBD 3 model is often conducted away from school areas such as in public libraries, fire stations and swimming pools. Water activities in the PLBD programme is an activities conducted by the Special Education Integration Program (PPKI) throughout Malaysia using the PLBD 3 module involving a swimming pool and the programme has become one of the routine activities for PPKI classes. However, water activities carried out by the Special

Education Integration Program (PPKI) have no plans in its implementation, no written objective, no trained teachers and no standardized guide to execute the programme.

## 1.2 Shortcoming in Penang PPKI Water Activities

In the Classroom External Learning (PLBD) among Special Education Integration Program (PPKI) in Penang, aquatic or water activities are often carried out by playing in the swimming pool conducted by outsiders who have a water safety and rescue certificate such as the Malaysian Public Service Agency (APAM) or the Fire Brigaders. These people has no skills in handling special needs students (learning disability) and the school has to pay them according to hours at an expensive rate (Jabatan Pendidikan Negeri Pulau Pinang, 2018). This is the obstacles in handling water activity for the special needs students (learning disability) in Malaysia, specifically in Penang even though it has a very significant positive impact to the special needs students (learning disability). Often being carried out without goals, direction and guidance is actually a result of no exposure and training to the teachers in carrying out these water activities.

The skills of the Penang Special Education Teacher in the field of water activities are also at a very low level where the results of the survey found that only 4 people from 616 specialized education teachers in Penang had the basic skills of swimming and able to handle water activities while 0 out of 616 special integration education teachers in Penang had a certificate of lifesaving and water rescue (Jabatan Pendidikan Negeri Pulau Pinang, 2018). This is a big risk taken by the school as 56% of these special integration education program has conducted water activities at least once every year with no teacher with expertise nor qualification handling it (Jabatan Pendidikan Negeri Pulau Pinang, 2018). Swimming activities are also conducted without any objectives, guidelines or specific modules for the performance improvement of special needs students (learning disability) through this activity (Jabatan Pendidikan Negeri Pulau Pinang, 2018). This has caused most teachers to carry out swimming activities just by playing water without any objective for specific performance improvements.

Swimming modules for special needs students are not widely published (Kraft et al., 2019) while water activities for special needs (learning disability) students have been carried out for a long time in the Special Education Integration Program (PPKI). This situation had led to an issue among the teachers, administrators and parents where this water activities was often questioned by parents and school administration as there were no significant results that can be proved through this activity and no guide nor module used throughout the activity to prove that this activity was actually objective, aimed and can be operated by special educational teachers well and safely.

Handling water activities actually requires high skills especially when it involves special needs students. Handling these activities without expertise or disclosure in how to operate and overcome risks factors will invite hazards to the teachers as well as the special needs students. Water activities executed based on a well develop modules is an essence to enhance the skills of special needs (learning disability) students and it should also be conducted regularly in accordance with the module to ensure that the activities have a positive direction and fruitful, not just playing in the swimming pool. Teaching using modules to develop curriculum will result in more quality and productive learning (Shariza, 2017). Therefore, in order to improve the quality of teacher's teaching and student's learning in water activities through PLBD, a module development would be a very relevant move.

## 2. Aquaexplorers Module for Special Education Teachers-The Pilot Study

As a Special Education Teacher, to have knowledge and self-confidence in their field is crucial. The basis for effective teaching in special education is by giving instructions and support to special needs students based on the teacher's professional evaluation and their high knowledge of individual needs (McLeskey, 2017). Knowledge is an abstract and a powerful concept leading to development, but the true definition of the word is still fuzzy (Bolisani & Bratianu, 2018). Wikipedia define knowledge as a skill or expertise that a person may have gained either by experience or through education (Carayannis & Campbell, 2019). Nowadays, numerous publications has proven that knowledge has become increasingly important for society, economy, and also democracy (Carayannis & Campbell, 2019). That means knowledge is very important in so many field. In the context of Special Education, teachers appeared to be most knowledgeable and more frequently to implement certain skills based on their own knowledge and expertise. Teachers' also believe that their knowledge in certain area was correlated with their decision of choosing strategies in teaching or delivering new skills (Moore et.al, 2017). Past research also suggest that teacher education and professional development programs can be use in improving the teacher's skills and knowledge (Byrd & Alexander, 2020). Specific training and experience had a significant influence on the knowledge in handling special educations students (Sanz-Cervera et.al, 2017). These statement shows that an appropriate module and courses for teachers can improve their ability in handling activities for the special education students (learning disability)

### 2.1 Various approach in Special Education

There are various approaches practice by the special education teachers and all approaches should have certain features that help the special needs students (learning disability) to continue improving their potential. Positive reinforcement such as praise and prizes is a good approach to shape the desired behavior for special needs students (learning disability) (Katmana et al., 2016). The instructions for special needs students should also focus on the contents of the instruction (Brownell et al., 2016), intensive, clear, systematic and guided by the individual (Morris et al., 2020). The approach used in delivering lesson to special needs students (learning disability)) should also be diverse and consider the capabilities and needs of individuals (Hodge et al., 2017). The approach used for them should also consider the contents of teaching, locations and teaching methods that maximize the physical involvement of activities as special needs individuals are four times more likely to suffer from diseases arising from lack of physical activity (Yun & Beamer, 2018). This shows that a modules involving physical movement are very important for this group. Among the most important things in the approach to teach the special needs students (learning disability) is the frequent repetition of each instruction and activity (Amri et al., 2019). All of these things should be emphasized in building an approach or module to improve education for special needs students (learning disability) students.

The longitudinal study by Garcia et al., (2012) shows the results of qualitative and quantitative data derived from the study of the effectiveness of the Halliwick program on the quality of life of 674 individuals with disabilities for one year at the Institute of Medical and Rehabilitation - Das Clinicas Hospital - São Paulo University. The 10-point Halliwick model is used as the basis for the planning and learning process of water activities. The holistic 10-point Halliwick model is used in traditional swimming teaching methods and the results of this study

show that after a year, this method is seen as a new way of exercising and shows that a recovery program that offers a combination of therapeutic activity and proves that recreational programs and therapies used in the Halliwick 10-point model can provide a consistent recovery to people with disabilities and also enables individuals with disabilities to achieve the maximum potential of skills and to enjoy the benefits of this program in terms of physical, psychological and social (Garcia et al; 2012).

The water activity program for disabled people has shown that the 10-point Halliwick model has dominated most of the water activity programs undertaken for the disability and revenue of this technique also shown a positive impact on various aspects in the life of the disabled. Based on this factor, the researcher has chosen this 10-point Halliwick model as the basis for the formation of Aquaexplorers Module for the use of Integration Special Education Teachers (GPKI) in handling water activities for special needs students (learning disability).

For developed countries such as Canada and the Netherlands, developing modules and swimming programs may be seen as a simple and regular practice. However, until 2019, modules and swimming programs for children with special needs are still not widely published in Canada (Kraft et al., 2019). For developing countries such as Indonesia, modules and swimming programs for children are also not widely published but there are some publications for normal children swimming program. The study by Yanto et al (2020) is a publication of the production of swimming teaching modules to increase the interest and efficiency of swimming movement techniques in children. The method used in this research is the research and development method by Borg and Gall consisting of ten steps in its construction, almost the same as the Halliwick module (Yanto et al., 2020). The collection of data for this study uses questionnaire and interviews to every user of this module which are the children who have just learned swimming and the results of the study found that there was a positive interest and response by swimmers through the use of the module (Yanto et al., 2020). In conclusion, modules formed in accordance with the needs of these users have been seen to have a positive impact on the improvement of children's swimming performance (Yanto et al., 2020) and it is possible to implement similar modules for special needs student (learning disability) in Malaysia which may provide the same positive results.

For developing countries such as Indonesia and Malaysia, the study of the development of this swimming module is not yet well-known and many published. However, for a country with many Olympic athletes such as China, the development of the swimming module according to its needs is also something new where they often use traditional swimming training modules that ignore student differences in the foundation of the swimming and prevent individual development (Chen & Xi, 2020). Studies by Chen and Xi (2020) have created four swimming modules that helped in training pupils in pool capacity, body control, basic training and integrated coordination based on teaching content, teaching techniques and assessment systems. The reforms made by this study effectively eliminated the limitations in traditional teaching that ignores the differences in students and as well as enhancing student capabilities. The impact of teaching and forming a modular teaching technique that can be transmitted and applied by teachers and other teachers has also been developed in this study. Based on the results of this study, it is proven that a modules formed based on individual needs are able to enhance the potential of students as well as enhance the effect of teaching by the teacher (Chen & Xi, 2020). Thus, the production of swimming activity modules that consider the needs of special needs students (learning disability) are something that should also be produced and published in our country to ensure quality lessons and improve the performance of special needs students (learning disability) optimally.

The intellectual disability group is less likely to participate in physical activity despite having many studies that prove the benefits of sports for humans in general (Fiorilli et al., 2016). Individuals with disabilities such as special needs students (learning disability) are also four times more likely to suffer from illness arising from lack of physical activity (Yun & Beamer, 2018). Even with the shortage of physical activity, modules and swimming programs for special needs children are still not widely published (Kraft et al., 2019). Special Education Integration Program (PPKI) has been provided with curriculum and assessment documents (DSKP) as a learning guide, but the use of modules to develop curriculum or support existing curriculum can increase the productivity and efficiency in teaching and learning progress at school (Lunenburg, 2011). Because of this, it is clear that even though the curriculum and assessment standard documents (DSKP) have been established by the Curriculum Development Division (BPK) as a special learning guide of pupils, the use and construction of modules is still relevant and very good in learning (Pratiwi et al., 2017; Novianto et al., 2018; Nursuhud et al., 2019; Doroudi et al., 2020). Construction of modules for special needs students should also meet some of the appropriate features so that they are effective to be used. The instructions used in modules for special needs pupils should also focus on the main contents of the direction (Brownell et al., 2016), intensive, clear and systematic. The approach used in delivering teaching to special needs (learning disabilities) students should also be diverse and consider the capabilities and needs of individuals (Hodge et al., 2017; Kraft et al., 2019; Morris et al., 2020). The use of modules has also been proven to have a positive impact on the knowledge of students with special needs about learning (Shariza, 2017).

The Halliwick model approach is seen to be very effective and still relevant to use until today as the basis of the swimming program for disabled people despite being created 70 years ago (Gajic et al; 2020, Gurpinar et al; 2020, Terrens et al; 2020). However, the use of this model should meet individual capabilities and needs (Hodge et al., 2017; Kraft et al., 2019; Morris et al., 2020). Water and Swimming Activities can provide benefits and various positive impacts to special needs from the Cerebral Palsy category, Autism, Down Syndrome and Attention Deficit Hyperactivity Disorder (ADHD) (Hutzler et al, 1998; Pan, 2010; Jorgic et al; 2012; Fiorilli et al; 2016; Murphy & Hennebach, 2020; Silva et al; 2020; Son, 2020; Suarez et al; 2020) and the construction of the module as a guide will indeed help this process. Therefore, the construction of the module for the use of water activities in the Special Education Integration Program (PPKI) by the Integration Special Education Teachers (GPKI) for the special needs (learning disabilities) students is a necessity and its construction should be done carefully and meet their needs.

## 2.2 The Development of Aquaexplorers Module

Halliwick Module has 10 aspects in its application which are Mental Adjustment, Disengagement, Transversal Rotation Control, Sagittal Rotation Control, Longitudinal Rotation Control, Combined Rotation Control, Upthrust, Balance in Stillness, Turbulent Gliding, Simple Progression and Basic Swimming Movement (Vaščáková, Kudláček & Barrett, 2015).

Aquaexplorers module: Water Activity Guide for Integration Special Education Teachers contains 5 interventions containing all the above concepts that have been modified. The development process of the module has used the document analysis method (Shariza, 2017) and expert recommendation method (Poncette et al., 2020). Researcher has analyzed the standard document of curriculum and assessment of the Physical Education Special Education (Learning) for Year 1 Standard Content 1.4 - Basic Aquatic, Standard Document Curriculum and

Physical Education Assessment Special Education (Learning) for Year 2 Standard Content 1.4 - Basic Aquatic, Standard Curriculum Document and Physical Education Assessment Special Education (Learning) for Year 3 Standard Content 1.5 - Basic Aquatic, Standard Document Curriculum and Physical Education Assessment Special Education (Learning) for Year 4 Standard Content 1.6 - Basic Aquatic and Content Standard 1.7 - Basic Swimming Skills, Documents Standard curriculum and assessment of Physical Education Special Education (Learning) For Year 5 Standard Content 1.7 - Basic Aquatic and Standard Document Curriculum and Physical Education Assessment Special Education (Learning) for Year 6 Standard Content 1.7 - Aquatic: Swimming Technique. Each document of curriculum and assessment for each year in special education has a title related to aquatic or basic swimming. The researcher also analyzes some other documents including books and journals on Halliwick model. All of these documents were analyzed to form fractions found in the Aquaexplorers module. The arrangement in the module is formed according to the format of the daily teaching plan of teachers with interaction, focus, objectives, activities and records / teaching aids included. The arrangement of this module is obtained through expert recommendations and is designed to facilitate the teacher in using it.

Expert Recommendation Method (Poncette et al., 2020) is conducted by researchers by talking via email, Google Meet app and phone calls (Poncette et al., 2020). Researchers form modules and send modules to four appointed experts for them to see and provide feedback. Feedback is recovered through the Google Meet application, phone calls and written formulation sent via email. Each part is carefully formed to meet the needs of students based on the analysis of the Physical Education curriculum and assessment documents and adopted by special education integration teachers. The implementation of each session is done in detail and explained carefully for each session.

Interaction one started with the mental adjustment which was the first point in the Halliwick model. In this point, pupils will sit on the poolside and soak their feet, patting the water followed by the movement of swivel entry. This adjustment's mental is very important to provide students the idea on what they will face further in this module and adapt them to pass through it. The movement of the water while they soak their feet before entering the water is the progressing steps that helps pupils adapt to the environment.

Next step is the Bobbing & Bubbling activity, which is a respiratory activity with the counting series of 1,3,5,7,9 repetition. Bobbing & Bubbling is a respiratory training activity which is a very crucial skills because breathing is the most important skill in water activities. Without respiratory skills, students will be easily panicked, scared and prior to drown if they put the face in the water. The repetition of one, three, five and so on is to train pupils to do this activity in the right way as well as sharpening their counting skills that are important for learning. The last activity is a small game named "Blow Ball". Through previous activities, Bobbing & Bubbling, teachers will be able to identify students who are afraid to put the face in the water and fear with splashes of water to the face. This game requires students to blow ping-pong balls on the surface of the water that will familiarize these pupils with the splashes in the face. Through this game, the difficulties of students to do Bobbing & Bubbling activities can be overcome.

Interaction two in this module is initiated with float activity which is prone floating. This activity is an adaptation of points 2 to 5 in Halliwick Method. This point is very important to enhance posture control in water by applying the easy way in points 2 to 5 in Halliwick Method which is self-inflicted skills and control movements either vertically, deflecting, stretching and moving in positions published from this position. In order to apply it, the students only need to

hold their breath, submerge their face in the water and make sure the body is relaxed from using any muscle. Self-confidence is very important in this point for them to be convinced that they will not drown and will immerse safely on the surface of the water if they follow the instructions carefully and it also includes point 6 in Halliwick Method.

Interaction three are initiated by the second floating skills which is supine floating. This skill adapts points 2 to 7 in Halliwick Method where the ability to control the body while floating to be stable on water and control the body to make rotation on the surface of the water is practiced. The applied techniques are to immerse on the surface of the water with the help of teachers, respiratory control and relaxation of the body. This session is continued with a small game named "Choose Colour". In this game, students will be able to learn to identify colours while playing and feeling a healthy competition experience with friends. The inhibited elements of this activity will ensure that the students learns basic knowledge that is identifying the colour while rejoicing in the water.

The fourth interaction are initiated with a fairly challenging activity which is Push & Glide, Regain Feet. This activity is an adaptation of point 8 in the Halliwick Method, the turbulent gliding. In this skill, it is important for students to integrate skills and execute the movement smoothly so that there is no undesirable movement such as staggering and sinking. Students will slide by kicking the wall and moving towards the teacher waiting in the middle of the pool. Students can stand by applying regain feet skills after the slide stops, sliding slightly or when they arrive to the teacher. Next is a small game activity named "Treasure Hunt". In this game, students will be able to build confidence, courage as well as enjoying diving to the pool floor. While at the bottom of the pool, students will grab a sinking toys and players with the most toys will be counted as winners.

The fifth interactions started with a quite complex movement and end with a high level skills. Small game derived from a real netball game will also be implemented. This interaction begins with the movement of hands adapting points 9 and 10 in Halliwick Method. The hand movement is the correct way to do the hand action for frontcrawl swimming style. Mini netball game is a very suitable game as exposure to real netball games with just basic rules applied in this game. Special Education Integration Program (PPKI) can also experience fun in socializing, communicating, collaborating while training the skills of the hands-on movement which is very important in the foundation of the aquatic skills. Hand movement in throwing the ball during the game will be able to train the strength of hands and hand control which is also the basis for swimming skills.

### **3. Methodology**

This pilot study are conducted by applying the Aquaexplorers module: Water Activity Guide for Integration Special Education Teachers to 17 Integration Special Education Teachers from 17 PPKIs in Penang State through 3 sessions within three days of the course. This module construction and development has been reviewed and confirmed by four experts which are the Excellent Lecturer of Physical Education, Special Education Lecturer, Certified Trainer Swimming for Special Needs from Malaysia Swimming Teacher Association and Excellent Special Education Teacher in Penang (Ikart, 2019).

The assessment instrument used in this pilot study is a questionnaire. To date, researchers often refer experts who have the theory of knowledge or practical experience in building a questionnaire to study the questionnaire and criticize the questionnaire built as a

technical tracking technique in the questionnaire, the risk of mistakes in measurements or events in the process of answering questions (Olson, 2010). Expert Overview is a common practice in the development of the questionnaire (Yan et al. 2012) and it can be done by asking the expert to check and comment on the questionnaire (Willis et al., 1999) or by using a group of experts called as Expert Panel to study the questionnaire (DeMaio & Landreth, 2003). Producing a perfect questionnaire is impossible, but what is important is that the questionnaire responded to the objectives and questions of the study (Ikart, 2019). The study by Ikart (2019) has used a four-member survey method to review and comment on the questionnaire on education and vocational training to prisoners in Australia. This technique is also adopted in the formation of the questionnaire of this study where four experts in the field (Ikart, 2019) are the Excellent Lecturer of Physical Education, Special Education Lecturer, Certified Trainer Swimming for Special Needs from Malaysia Swimming Teacher Association and Excellent Special Education Teacher in Penang are appointed as reviewers in the construction of questions in this survey. The researcher has built a questionnaire to answer every objective and question of research and researchers has been using expert survey methods (Ikart, 2019) as a process of development and improvement of questionnaires.

### **3.1 The Instrument Validation Process**

The instruments in this study consists of two section which is the first section consists of questions regarding the teachers knowledge on handling water activities and the second sections consist of questions on the teacher's self confidence in handling water activities for special needs students (learning disability). After getting a specialist assessment feedback for the validity of the instrument content, the researcher used the Cohen Kappa Correlation Analysis technique for the validity value of this instrument (Othman & Kassim, 2018). The results of the assessment of four experts show Expert 1 and Expert 3 agree with all 12 questions in the questionnaire. However, experts 2 disagree with one question and expert 4 disagree with eight questions in the questionnaire. Therefore, Cohen Kappa's analysis is conducted to assess the correlation between Expert 2 and Expert 4 as Cohen Kappa's data analysis can be used to assess the correlation between two experts who are seen to have discrepancies or disagreement (Othman & Kassim, 2018). The results of Cohen Kappa's analysis between the two experts show Cohen Kappa 0.460 value and according to Landis and Koch (1977), this value is considered moderate while according to Cicchetti et al (1985) as well as Fleiss and Cohen (1973), this value is considered good.

### **3.2 The Protocol and Procedures**

Upon completion of the construction and verification process, the questionnaire was given by researchers to 17 special educational teachers Integration before and after the implementation of the Aquaexplorers module and the results of questionnaire were tested using the Chi Square method in the Statistical Package For The Social Science (SPSS) software because of this questionnaire using a linear scale value of one to five (Simamora, 2017; Jetsu, 2020).

The administration of the study began with researchers applying for approval from Universiti Sains Malaysia and the Ministry of Education Malaysia before conducting this study. The research procedures and instruments have been presented to all related parties including the Head of Special Education Unit, Penang State Education Department and the teachers in Special Education Integrated Schools involved. The study procedure was described to the samples which are 17 special education teachers in Penang before the pilot study.

Pre-test data collection sessions will be conducted before the intervention sessions of using the AquaExplorers module: Water Activity Guide for Special Integration Education Teachers and post-data collection sessions will be conducted after completion of intervention using AquaExplorers module: Water Activity Guide for Special Integration Education Teachers. The questionnaire will be provided in the form of Google form and can be reached by the samples through the QR code scan that will be provided at the course registration desk. The course will be conducted at the Swimming Pool of Universiti Sains Malaysia for three days as the first day for introduction, basic swimming skills test, and also a bit of module implementation, second day of full module implementation and third day is a practical session with Special Education (Learning Disability) students.

The researcher will make an explanation on the details of the study to the samples ( $n: 17$ ) before starting the intervention session. Protocols in carrying out interventions involving movement skills require verbal instructions, demonstrations and demonstrations accompanied by treatment attempts (Staples & Reid, 2010). The demonstration from the researcher will be repeated if the samples of the study cannot understand and follow the activity in the intervention. Demonstrations and instructions will be given repeatedly according to the understanding of the sample to ensure that all samples understand with the instructions given as the majority of samples have no basis in swimming skills (Roid & Miller, 1997).

AquaExplorers module: Water Activity Guide for Special Education Teachers Integration has been modified so that it is appropriate to be applied to various categories of Special Education (Learning Disability) students in the comprehensive educational program as a whole and the sample of the study can carry out activities with the best performance and capabilities that exist in themselves. Special Education Teachers Integration involved with this study is not a sports teacher or teacher who has a solid foundation in managing water activities or doing water activities but their essential duties require them to carry out this activity without any exposure. The administration and protocol of this study have been established to facilitate the samples through intervention and collection of data as well as the benefit of the study.

The question of research is formed through data collected from the Penang State Education Department and the results of the past study. In collaboration with the Special Education Unit, Penang State Education Department, and a hypothesis has been created which is there are no significance difference in the Special Education Integration Teacher's knowledge and confidence level in handling water activities for Special Education (Learning Disability) students after the implementation of this Aquaexplorers Modules. This study will test this hypothesis.

## 4. Result and Conclusion

Questionnaire answered by 17 Special Education Integration Teachers was analyzed using the Chi Square method of SPSS software. Questionnaire answers were compared to identify the questionnaire scores before and after intervention. The results of comparisons between these two tests showed the results of the data analysis of the post-test questionnaire ( $m = 46.11$ ,  $SD = 3.230$ ) were higher than the results of the pre-test questionnaire analysis ( $m = 33.11$ ,  $sd = 2.208$ ). The findings of this analysis show that the results of the post-questionnaire are better and this proves that the use of the Aquaexplorers module in this pilot test is indeed capable of improving the knowledge and self-confidence of Special Education Integration Teachers in carrying out the water activities.

The findings also show that all samples agreed that using a guided modules really helps them in conducting water activities. However, the samples also suggest few improvements that can be done in implementing this modules which is adjust the course to be longer (17.6%), adding activity for self-confidence in water (11.8%), adding demonstration video links in the module (11.8%), added repetition of important activity (5.9%), added more samples for each school (5.9%), and expand this course to other states (5.9%). All the proposed improvements that have been given in the post-questionnaire by the sample of this study have been accounted for and are included in the development of the module. The new module will be applied with all the proposed improvements where self-confidence activities in water have been added for all 10 new module interaction sessions, each skill has also been equipped with demonstration video and links using QR code and repetition of activities is also placed in every interaction for important skills. Based on a pilot study, researchers realize that Bobbing & Bubbling sessions need to be repeated in each session for mental Adjustment (MA) according to the Halliwick module. This is because Bobbing & Bubbling is a very important skill to control the breath in the water and most samples cannot make and remember the skills only with one session. For the proposed addition of activities, the improvements that need to be done in this module are the addition of activities from various levels and difficulty levels. Various activities with different difficulty levels can meet the needs of samples consisting of various categories and levels of ability. Classroom Outdoor Learning (PLBD) Module 3 will usually take whole day to be carried out as activities will be carried out at the convenience of the school and requires a neat setup, then by increasing the number of activities at each session, PLBD can be carried out with optimal and effective use of time. For the idea of addition of samples and expansion to other states, the idea has been proposed to the Penang State Education Department.

## 5. Discussions and Recommendations

The modules with the activities placed as an introduction, the main objective as well as small games as a closure can make the module become more practical and user-friendly for the teacher. Researchers also suggest that activities on each interaction are added and divided properly as the lesson plan so it can be more practical to be used by the teacher.

The addition of small games in every activity is also a smart move. By adding a small game at the end of each session, researchers realize that the communication and social skills of these students have increased from day to day. They learn to communicate, cooperate and can also socialize to win the game. Researchers also recommend that based on their observations, more aspects can be reviewed based on the use of this module as the enhancement of student communication and social skills throughout the study.

Based on the observation of the researcher during the pilot test, the statement or the description of the points from Halliwick module in the module also does not bring any benefit to the teacher and sometimes merely mislead them. Thus, the researcher carried out the Halliwick point statement from the module and which means the point is not stated but it has been elaborated into Aquaexplorers point.

Future researcher can improve the Aquaexplorers Module by adding the improvements suggestions by the research samples which are adjust the course to be longer, adding activity for self-confidence in water, adding demonstration video links in the module, added repetition of important activity, added more samples from each school, and expand this course to other

states. The researcher hope that all the recommendations given by the samples can be used in improving this modules into a better one.

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## EMOTION REGULATION DISABILITY AMONG SPECIAL EDUCATION CHILDREN: A NARRATIVE SYNTHESIS

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### ABSTRACT

The ability to regulate emotions is important for effective learning amongst students with special educational needs. Poor emotion regulation leads to behavioural problems, such as loneliness, arrogance, aggression, rage and self-harm behaviours, and subsequently, this might contribute to social isolation and less potential to build friendships. In this paper, narrative synthesis was used to explore the causal factors of emotional regulation issues experienced by students with special educational needs and the effects of social emotional problems on these students. The findings from the narrative synthesis indicated that factors leading to emotional regulation issues among students with special educational needs are neurological factors, growth and development factors, peer social rejection factors, parenting factors, and teacher-related factors, while the effects of emotional regulation problems include social problems, behaviour problems, emotion problems, performance employment problems, and cognitive problems. From the narrative synthesis, conceptual frameworks related to the causes and effects of emotional regulation problems amongst students with special educational needs were induced to offer the direction of further investigation on this minimally researched area.

**Keywords:** Emotion Regulation; Disability; Causal Factors; Negative Effects; Special Education Children

### 1. Introduction

Emotional intelligence is fundamental to learning. Goleman (1998) argued that emotional regulation is a master aptitude and guarantee of intellectual intelligence. Goleman's (1998) argument was based on the clinical evidence that when emotional regulation is affected due to brain damage, the functions of intelligence are usually affected as well. This argument is later supported by researchers, such as Boyd, Barnett, Bondrova, Leong and Gomby (2005), who assert that emotional and social intelligence develop simultaneously with children's cognitive development.

Emotional regulation is an ability to assess, cope, manage and express emotions according to the situation to achieve emotional balance (Gross, 2002). According to Gross (2002), emotional regulation happens when there is an antecedent (such as a situation or event) that elicits an emotional response in an individual. This emotional response can provoke an array of other bodily responses, including behavioural, experiential, and physiological responses. For example, during an art class, a tool is broken (antecedent) and this leads to a shock response in a student. This response can very quickly provoke other bodily responses like the student immediately withdrawing his hand from the tool, looking around to see if other people also noticed the incident, and increased heart beats. Gross (1998, 2002) proposed five elements of emotional self-regulation, namely situation selection, situation modification, attentional deployment, cognitive change, and response modulation, to refer to the responses during the process of emotional regulation.

Positive emotions can build good relationships, while negative emotions create discomfort while socializing. Emotional management skills and the ability to express feelings according to social situations are very important in maintaining relationships with others (Ratnam, Alias, and Toran, 2018). However, these skills are noticeably lower amongst students with special educational needs (Ratnam, Alias, & Toran, 2018), causing them to experience social-emotional and behavioural challenges (Cavioni, Grazzani & Ornaghi, 2017). These challenges cause students with special education needs to experience poorer social and learning outcomes compared to their typical peers (Bryan, Burstein & Ergul, 2004).

In Malaysia, students with special educational needs consist of students with visual impairment, hearing impairment, speech impairment, physical impairment, multiple disabilities and learning disabilities, such as autism, Down Syndrome, Attention Deficit Syndrome and Hyperactivity and Dyslexia (Malaysia Education Development Plan, 2013-2025). According to Abdullah and Omar (2018), students with special educational needs differ from normal children in terms of mental ability, sensory ability, neural, muscular, physical characteristics, social and emotional behaviour, communication ability and various deficiencies. The Education Act (1996) defines students with special educational needs in Malaysia as a category of students with various types of learning difficulties, including visual impairment, hearing, speech, Down Syndrome, autism, Attention Deficit and Hyperactivity Disorder (ADHD), mental retardation and dyslexia. Later, Special Education Regulations (2013) defines students with special educational needs as those certified by a medical practitioner, optician, audiologist or psychologist as a student with physical disabilities, learning disabilities or any combination of disabilities. Persons with Disabilities Act (Act 685) added that individuals with special needs have long-term disabilities in terms of physical, mental, intellectual and sensory.

Amongst students with special educational needs in Malaysia, many of them experience difficulties or differences in emotional management and control. In regards to this, Ratnam, Alias and Toran (2018) advocate that it is important for multidisciplinary agencies in Malaysia to work together to help these students in terms of social, emotional and behavioral management. The emotion regulation intervention initiative for this group of students aligns with the goals of the Education Development Plan 2013-2025 to provide quality education to all students, including those with special educational needs. To start, it is important that the factors and effects of emotion regulation on students with special educational needs are explored. A better understanding of the causes of emotion regulation problems and the possible effects is critical, which provides the direction to plan evidence-based and contextually suitable interventions for these students.

## 2. Research Purpose

The purpose of this study is to identify the factors of emotion regulation problems among students with special educational needs and the effects of emotion regulation problems via a narrative synthesis method.

## 3. Research Question

The two research questions to be addressed in this narrative synthesis included:

1. What are the factors of emotion regulation problems among students with special educational needs?
2. What are the effects of emotion regulation problems among students with special educational needs?

## 4. Methodology

This paper employed the narrative synthesis methodology for reviewing previous studies and multiple data sources (Edwards & Kaimal, 2016; Gruber & Oepen, 2018). For this review, “the factor of emotion regulation” and “the effect of emotion regulation” were used as the search terms. Themes related to these two notions were identified from the papers reviewed.

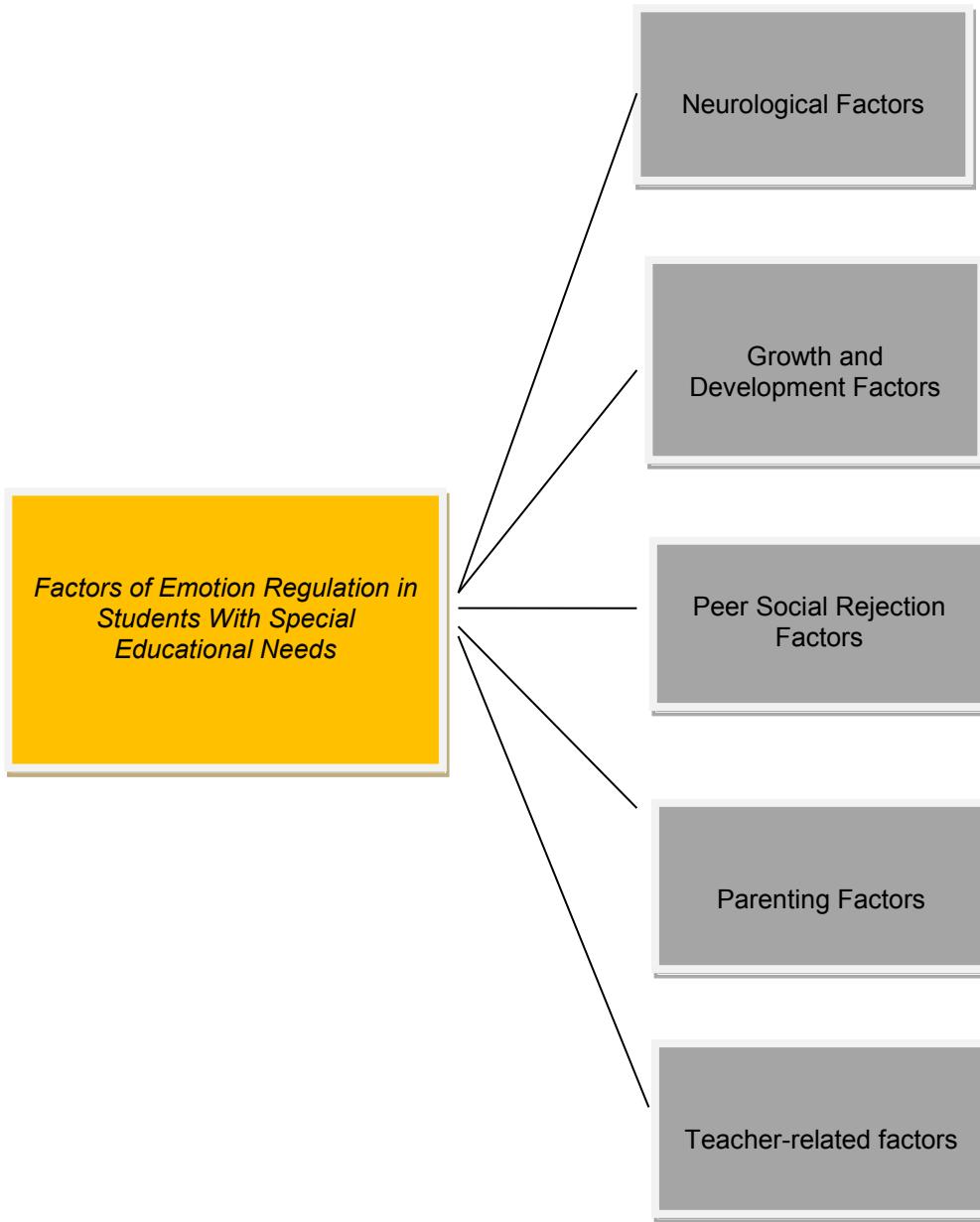
## 5. Results

From the review, five themes were identified for factors of emotion regulation problems, while another five themes were identified for the effects of emotion regulation problems. These themes are presented in turn below.

### 5.1 Factors of Emotion Regulation Problems among Students with Special Educational Needs

Five factors that may cause emotional regulation problems among students with special educational needs include neurological factors, growth and developmental factors, peer social exclusion factors, parenting factors, and teacher-related factors. These five factors are presented in Figure 1.

Figure 1: Factors of Emotion Regulation in Students with Special Educational Needs



The first factor identified is the neurological factor, which is related to the differences in brain functions experienced by students with special educational needs, such as those with autism and Attention Deficit and Hyperactivity Disorder (ADHD). These neurological differences cause them to experience emotional and behavioral problems. As reported by Daulay (2017), Carlson (2011), Stefanatos & Baron (2011), individuals with autism might experience neurological differences in the structure and biochemistry of the brain at the locations of the frontal cortex, temporal cortex, hippocampus and amygdala, functions closely related to the planning and execution of communication and social skills. At the same time, differences in neurological functions in the cerebellum, cerebellum cortex and limbic brain, functions closely related to the planning and execution of behaviour, attention, movement and emotional regulation, are also noticed among individuals with autism (Daulay, 2017; Wahad, 2015).

The second factor is the growth and development factor. Ghafar & Jahaya (2006) stated that students with special educational needs are labelled as special due to the developmental differences between them and typical-developing peers. In regards to this, students with special educational needs were found to experience delay or disorder in their development. Developmental delay and disorder is a common factor causing them to experience delay and disorder in emotion regulation.

The third factor is social rejection from normal peers. For example, aggressive children are reported to have no friends, resulting in psychological problems (Ladd & Troop-Gordon, 2010). In schools, students with good behaviour are more easily accepted by others. On the other hand, those with emotional regulation problems, particularly those who tend to exhibit problematic behaviour, make it difficult for others to accept them in social interactions (Jamil, 2010; Benedict et al., 2007).

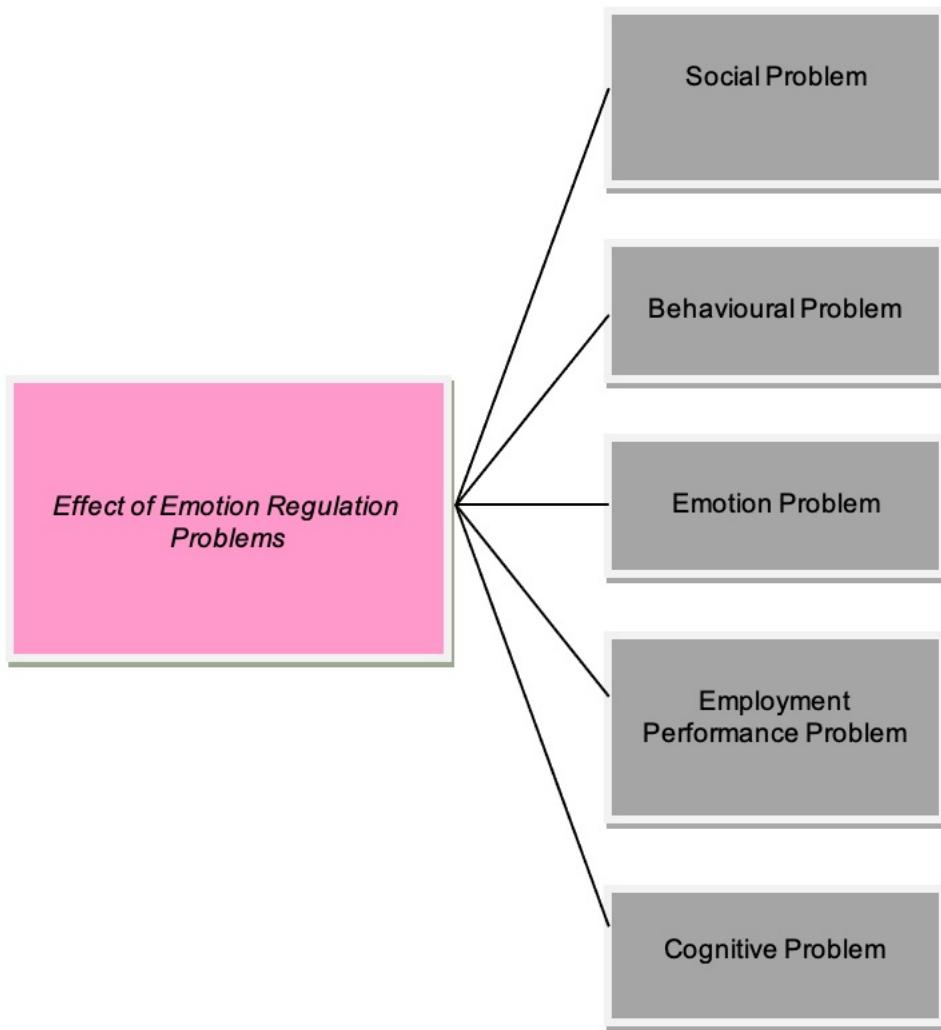
The fourth factor is the parenting factor because the child's socio-emotional development is often influenced by the parents (Maccoby & Martin, 1983). Parents are the people closest to the child, and their behaviours and the ways they interact with the child can impact the development of the child's social, adaptive, communication and behavioural skills (Nasir & Mansor, 2019; Toran, 2017; Nazmin, 2017; Aizan, Jamiah & Noremy, 2016). Pertaining to this, Sulaiman (2013) highlighted that emotion regulation issues could be closely related to family problems.

The fifth factor is the teacher-related factor. Currently, most teachers do not attend enough training about strategies to facilitate emotion regulation in students. The majority of teachers only acquire the related skills through their experience, collaborating with teachers and school administrators (Amran, Majid & Ali, 2019). As students with special educational needs are more at risk for emotional regulation problems, special education teachers can be more vulnerable to stress and easily dissatisfied with their jobs than mainstream teachers (Koenen et al., 2017). The teaching and learning process, including those related to classroom management and emotion regulation, is closely dependent on the competence and skills of teachers (Idris, 2010).

## **5.2 Effect of Regulation Emotion Problems among Students with Special Educational Needs**

Five effects of emotional regulation problems among students with special educational needs include social, behavioral, emotion, employment performance and cognitive development. These five effects are presented in Figure 2.

Figure 2: Effect of Emotion Regulation Problems in Students with Special Educational Needs



The first effect identified is the social problem. Children with special needs may experience poorer interpersonal relationships. Reed et al. (2011) reported fewer than 20% of students with special educational needs were able to build friendships. Litvack et al. (2011) found that one-third of the participants in their study who had high achievement in the classroom stated that they did not interact much with peers with disabilities. Besides that, Ladd & Troop-Gordon (2010) found that aggressive children were more likely to be unfriendly and isolated by their peers. Khoo & Alias (2015) added that the difficulty of building social interaction with the surrounding community could cause students with special educational needs to experience social isolation problems. The rejection from their peers and friendlessness can have damaging consequences on the psychosocial development of students with special educational needs. De Boer, Pijl & Minnaert (2012) also explained that poor social skills in students with special educational needs can lead to loneliness, lack of friends, and putting them at risk of being potential victims of bullying.

The second effect is the behavioural problem. Ahmad & Hanifah (2015) found that problematic behaviours and emotional imbalances can disturb daily activities, such as the learning process in school. Adeli (2002) found that 80% of students with special needs experience behavioural problems, such as aggressiveness, social negativity, and self-management problems, which are closely associated with emotional problems.

The third effect is the emotion problem. Students with special needs face deficits in emotion regulation or the process of appropriately modifying emotions in response to stressful stimuli. Therefore, a low level of this skill may result in emotion problems (Mazefsky et al., 2013).

The fourth effect is performance employment problems. Past studies found that many graduates from special education do not show good performance in employment, social participation in the community, independent living after post-secondary education due to the challenges associated with the development of social, communication and adaptive skills (Chen et al., 2018).

The fifth effect is cognitive problems. Goleman (1998) reported that the ability to assess, cope, manage and express emotions according to the situation is the prerequisite condition of intellectual intelligence. He also argues that intellectual intelligence may be affected if part of the brain is damaged due to a defect in the functioning of emotional regulation.

## 6. Conclusion

In conclusion, the factors of emotion regulation problems among students with special educational needs may include neurological factors, growth and developmental factors, peer social exclusion factors, parenting factors, and teacher-related factors, while the effects of poor emotion regulation may include negative impacts on social, behavioural, emotion, performance employment and cognitive development. From this narrative synthesis, it is hoped that the conceptual frameworks offered can provide a direction for further investigation in this area.

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## **"STAR TRACK" PROJECT: ATTRACTING SPECIAL NEEDS STUDENTS TO ENGAGE IN SPORTS ACTIVITIES AND IMPROVING THE INTERPERSONAL SKILLS THROUGH SPORTS ACTIVITIES**

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### **ABSTRACT**

The "Star Track" Project action research is aimed to attract Special Needs Students (SNS) to be involved in sports activities and improved their interpersonal skills by engaging in sports activities actively. This study was carried out due to the fact several SNSs in SMK Kampong Soeharto, have little interest in participating in sports activities and there are SNS who are still weak in their interpersonal skills. The main objective of the study was to identify the main reason of SNS's non -involvement in sports activities and why it is difficult for them to master the interpersonal skills. Therefore, "Star Track" Project is implemented to address the issues. A total of 5 special needs student with learning difficulties, 2 boys and 3 girls have been identified, to involved in this research. The method used to identify the problems was initial observation and then followed by questionnaires and interviews to collect data. Through the questionnaire analysis data findings out that the main factors of SNS are not interested in sports activities is less exposure to the sport environment. Second factor is less encouragement from the parents and the next factor is the SNS consider there are not talented in sport. The results of the interview session also found that poor interpersonal skills are due to communication problems, inflexibility to adapt and lack of self -confidence. Through the analysis, the Star Track Project was carried out to solve the problem. Based on the analysis of data from the implementation of actions, has shown a positive change in students' interest in sports activities. And analysis of behavioral monitoring instruments showed SNS in the Star Trek Project had successfully improved their interpersonal skills. Hopefully, the "Star Track" Project can help further increase SNS involvement in sports activities as well as improve other skills.

**Keywords:** fitness test, interpersonal skills, Special Need Students

### **1. Introduction**

Sports activities in schools have become part of the education system in Malaysia. Sports activities in schools are implemented through the subjects of Physical Education and Co-curricular Activities. Sports activities are good for the student's fitness. The purpose of sports activities held in schools is to give experience to students to achieve the perfect life in line with the philosophy of national education which is to produce a balanced human capital in spiritual, physical and intellectual aspects.

In Malaysia, the Ministry of Education has introduced the 1 Pupil 1 Sport Policy. The One Pupil One Sport (1M 1S) policy requires every student to participate at least a sports activity at school. This policy emphasizes engagement all students in various activities and

levels of sports. It is formed on the rationality of everything sports activities are part of the educational transformation undertaken by Ministry of Education Malaysia (MOE). This policy also contributes to the promotion of healthy competition, the spirit of goodwill, understanding, tolerance and enhancing moral and physical values that provide a foundation correct in integrating various ethnic groups into one united nation cohesive and cultivate the spirit of love for the country. In addition, the 1M 1S Policy can provide a comprehensive opportunity for all students to get involved in sports in a more managed and planned manner as well as balancing focus or emphasis in producing human capital holistically towards building a Malaysian society highly competitive. In line with the 1 Pupil 1 Sport policy, the field of sports is very important in optimizing the physical abilities of pupils. Most children with disabilities experience personal disorders and disharmony more often than normal children because they are unable to establish healthy communication. Through sports, it can support children to solve this problem. In the context of students with learning difficulties, sports play an important role in creating social interaction and bringing students with disabilities closer to society, producing healthy, active and productive human capital as well as shaping personality, identity, discipline and values and forming a sports culture among students. Therefore, through this study will see whether the action planning carried out can help the students studied to meet the needs of interpersonal skills as described above.

In foreign countries, there are also sports development programs that can be used as an example to involve children in sports activities such as IAAF Kids's Athletics Program. The Kids's Athletics program is led by the IAAF which operates by engaging children through engaging and creative athletic training methods. "IAAF KIDS' ATHLETICS" is intended to bring excitement into playing Athletics. New events and innovative organisation will enable children to discover basic activities: sprinting, endurance running, jumping, throwing/putting in just about any place (stadium, playground, gymnasium, any available sport area, etc.). The athletics games will provide children with the opportunity to make the most of the beneficial practice of Athletics, in terms of Health, Education, and Self-fulfilment. Taking the idea from the concept of "IAAF KIDS ATHLETICS ", this Star Track Project is to attract more interest in sports activities among special needs students (SNS). Sports activities will give students the opportunity to take full advantage of the training gained in terms of Health, Education, and self -satisfaction. This project can also uncover new talents involving special needs students who have no sports background, do not show their sensitivity to sports activities but in terms of physical readiness they have hidden sports skills that can be polished.

In addition, this study will also look at the extent to which sports activities can change the shape of interpersonal skills of SNS. Interpersonal intelligence helps us socialize with others (Garder, 1993). Verbal communication can occur when two people talk face to face (Sulaiman, 2002). Interpersonal skills are divided into six namely the ability to receive feelings, accept ideas, ask questions, convey information, convey leads and communication skills (Idris et.al, 2008). Interpersonal communication is very important for every individual, especially special needs students. SNSs often lose their social activities due to lack of self -confidence. Participation in sports activities can overcome these shortcomings, giving them the ability to engage in social interactions, develop friendships and initiate social skills. In this regard, this study would like to see, whether the activities carried out in the "Star Track" Project is able to improve the interpersonal skills among SNS.

## 2. Problem Statement and Objective

Sports are the best platform to produce active and intelligent students. Sports will be able to shape a student to be intelligent, obedient to instructions and indirectly will form an athlete who is highly prudent, responsible, disciplined and has a strong identity and leadership.

Sports activities are also an appropriate step to achieve the goal of implementing the 1 Pupil 1 Sport Policy which requires every healthy student to participate in at least one sports activity in school. Sport is also a medium of unification in strengthening harmony, exchanging ideas to formulate strategies to compete with the opposing team, physical, emotional, intellectual and team improvement. In the training sessions and competitions, SNS are motivated by enthusiasm, the level of self -confidence also increased, and further increased their self -confidence and social skills. Therefore, this study will identify the problems faced by students with special needs who refuse to engage in sports activities and ways to overcome them. Interpersonal intelligence allows a person to understand the feelings, motivations, habits and desires of others. Next, they are able to interact easily and can collaborate with others practically to produce something worthwhile. Those with outstanding interpersonal intelligence usually have good interactions with others. In addition, they are also able to feel sensitive and understand the emotions, feelings, thoughts, behaviors and expectations of others. At a simple level, this intelligence includes a student's ability to recognize and be sensitive to the feelings of the adults around him. Pupils with this intelligence will learn effectively through learning, collaborate with peers and easily engage with an association. Therefore, this study will identify the problems which are a factor in interpersonal skills cannot be mastered by SNS and how sports activities can overcome the problem.

## 2.1 Objectives

This study is conducted:

- 2.1.1 To investigate factor related to Special Needs Students in SMK Kampong Soeharto not being interested engaging in sports activities.
- 2.1.2 To investigate the changes interpersonal skills among the Special Needs Student in SMK Kampong Soeharto.

## 2.2 Research Question

The questions to be answered through this study are:

- 2.2.1 Whether this Star Track Project able to refute the factors that cause Special Needs Student not to be interested engaging in sports activities.
- 2.2.2 Whether sports activities can change the interpersonal skills of special needs students.

## 2.3 Significance of Research

This research is conducted has its own importance, so that appropriate action can be taken. This study is expected to be beneficial to:

**Special Needs Student (SNS):** Through this study, SNS can find out the sports talents they have. In addition, SNS can also cultivate a healthy lifestyle as well as utilize personal fitness to participate in the competitions organized. Then this study can also

improve the mastery of interpersonal skills through social interactions that occur during training, discussion and participation in tournaments and competitions.

**Schools & Special Education Programs:** This study is important to ensure that schools and special education programs can identify the potential and talented SNSs in certain sports to be given continuous training in preparation for any upcoming tournament. Good interpersonal skills will also produce SNSs that have the potential to be absorbed into inclusive education programs as SNSs are able to create social interactions with peers and the school community.

**Parents:** Aware of the factors that influence SNS's involvement in sports activities and the ability to master interpersonal skills, therefor will open the eyes of parents to provide support and encouragement as well as change parents' perceptions of the importance their child sports activities. Parents can work together with school to help polish talents and improve their child interpersonal skills through effective communication.

## 2.4 Research Participants

This study involved 5 special needs students in SMK Kampong Soeharto, 2 boys and 3 girls with special needs in the category of learning difficulties. They have been identified through preliminary observations during physical education class. When a teachers ask to do sports activities, give often give excuses and prefer to observe friends doing activities. In addition, they also like to be alone in class, and rarely do social interaction when in a group of students. There also less sociable as well as having very weak interpersonal skills.

## 3. Literature Review

A literature review is a critical and systematic reference to selected information contained in the content regarding the topic or focus of a research study. A literature review should parse, summarize, analyze, synthesize, evaluate and explain the selected content. In this action research, a literature review was conducted to find methods, ideas and information related to the title's research.

### 3.1 Somekh' Action Research Model (1989)

Somekh's action research model involves eight phases, namely identifying the problem or focus of the study of interest, collecting data, analyzing data and constructing hypotheses, planning action plans, implementing action plans, collecting data to detect changes, analyzing and evaluating and identifying research new folios. The systematic aspect is the strength of this model, where each step is explained in more detail, ranging from simple and formal steps to more detailed steps. However this model seems rather complicated to follow as it requires the teacher to follow each step described in detail.

### 3.2 Learning Disabilities

Learning Disabilities are defined as learning difficulties or learning problems. Learning problem as a developmental delay in one or more of the processes of speaking, reading, writing, arithmetic or other school subjects. It is not the result of mental retardation, sensory barriers (blind or deaf) or cultural and environmental factors.

### **3.3 Physical Fitness**

Physical fitness is the ability of an individual to function effectively to meet challenges in daily physical work and use leisure time more effectively while having excess energy for emergency purposes (Mohammed Abou Elmagd, 2016). Physical fitness involves the movement function of the limbs and organs of the body and is also associated with an individual's ability to work more effectively and enjoy leisure time, rest, resist hypokinetic diseases and cope with anxiety. Optimal physical fitness is not possible without constant exercise. Physical fitness in sports is very important to achieve the maximum level of performance. Improving health -based fitness components and motor behavior can help individuals to adapt in the sport they are engaged in. Health -based physical fitness refers to muscle strength, cardiovascular endurance, body composition, flexibility, and muscular endurance. Whereas motor behavior -based fitness refers to speed, agility, muscle power, balance, coordination, and reaction time. Optimal fitness can help students in performing daily activities efficiently and effectively without feeling tired. Physical fitness is often associated with an individual's ability to use their leisure time, how they resist hypokinetic diseases and how they cope with such fitness. Improvements to a set of fitness activities are planned and implemented to help students obtain optimal fitness results in accordance with established procedures and norms.

### **3.4 Kinesthetic Intelligence**

Body or kinesthetic intelligence is one of the 8 types of intelligence proposed by Gardner. It involves abilities in controlling the body, as well as in the handling and manipulation of objects. Kinesthetic intelligence is formed based on the ability to control the movement of a body part and control objects with skill. It involves the sense of coordination and accuracy of overall body movements as well as the use of both hands in manipulative skills. The characteristics of kinesthetic intelligence are as follows, Skills in controlling body movements (strength, flexibility, speed, coordination), Skills in manipulating objects (using hands to create something or make repairs).

### **3.5 Interpersonal Intelligence**

Gardner (1983) summarizes interpersonal intelligence as the ability to understand others, what their goals are, how they work, and how they work cooperatively. This intelligence is an individual's ability to discriminate between various interpersonal cues and the ability to communicate effectively pragmatically against those cues. Interpersonal intelligence allows a person to understand the feelings, motivations, habits and desires of others. Next, they are can interact easily and can collaborate with others practically to produce something worthwhile. Those with outstanding interpersonal intelligence usually have good interactions with others. In addition, they are also able to feel sensitive and understand the emotions, feelings, thoughts, behaviors and expectations of others. At a simple level, this intelligence includes a child's ability to recognize and be sensitive to the feelings of the adults around him. Pupils with this intelligence will learn effectively through learning, collaborate with peers and easily engage with an association.

### 3.6 IAAF Athletics Kids

Kids' Athletics is one of the largest grassroots development programs in the world of sports. Beginning in 2005, IAAF Children's Athletics has been implemented in 134 Member Federations and has reached a cumulative total audience of over 13 million children. The Kids's Athletics program is led by the IAAF which operates by engaging children through engaging and creative athletic training methods. The objective of the kids's athletics program which applied in this Star Track Project is coordination skills according to ability and age differences , and another objective is to create a large number of active children, children can master the variety of movements in sports, not focusing on stronger or faster children. The content of IAAF Kids Athletics that is focused in this project is social interaction content, because IAAF Kids Athletics is a factor in the integration in the children's social background. Team events will involve the contributions of all participants. This will give children the opportunity to meet, interact and get to know each other's differences. In addition, it involves the motivating element of children's motivation through the character content of adventure. Children compete with each other to win events, and from there comes a sense of effort, critical thinking in determining strategies to win.

## 4. Methodology

The method used to identify the problems was initial observation, questionnaires and interviews to collect data than followed by action planning.

### 4.1 Questionnaire

The questionnaire was conducted on 5 special education students in SMK Kg Soeharto who were not interested in participating in sports activities at school and had a low level of interpersonal skills. According to Lexy (2007), a qualitative approach is a procedure that produces observable picture data. In addition a small number of samples is more suitable to use this method. (Aini Hassan, 2007). Therefore a questionnaire was conducted to find out why they were not interested in participating in sports activities. Questionnaires were also given to the parents of these 5 students to obtain their child's consent to be involved in the study, and to collect data related to their child's health history and to find out their support for their child's involvement in sports activities.

*Figure 1: Based on questionnaire analysis.*

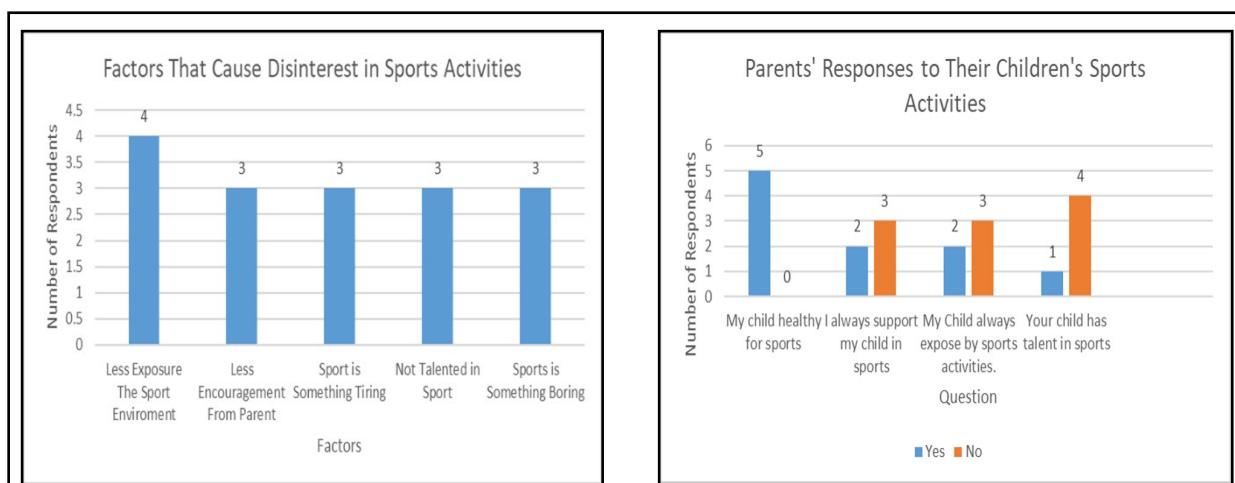


Figure 1 shows analysis of a students and parents questionnaire. The main reason students are not interested to engaging in sports activities is the lack of exposure to the sports environment. Student are not exposed with the importance and fun of sporting activities. Their parents do not encourage them to engage in sports activities. In addition, these students refused to do sports activities because they felt that sports were tiring. Special needs student also consider that they are not talented in sports and in their opinion sports is a boring activity. The results of the analysis showed that all students studied were in a healthy condition to carry out sports activities. Only 2 parents support their child's sports activities. 3 parents did not expose their children to the sports environment and almost all parents were unaware of their child's talents in sports. It can be concluded that, the lack of exposure to the sports environment by parents is the main factor the lack of interest in sports. Although the students themselves and parents know that their children are likely to have talent in sports, but the lack of support and encouragement to engage in sports activities has been the cause of SNS not being interested in sports activities.

## 4.2 Interview

Interview method was conducted on 5 special needs student who were studied to see the level of interpersonal skills of these students whether they have the six interpersonal skills as stated.

*Table 1 : Findings through interviews during the Physical Education Class*

Question	SNS 1	SNS 2	SNS 3	SNS 4	SNS 5
<b>Q1 Why don't you play sports with your friends?</b>	"I don't know what sport to play"	bowed his head and scratched the floor.	"I do not feel well"	Responded with a smile.	"I don't want"
<b>Q2 What sport do you like?</b>	"football"	No answer	badminton but I don't know how to play	shakes head	shakes head
<b>Q3 "Everyone must play one sports game today"</b>	"I don't want to, the weather outside is hot"	No answer but his body respond with teacher order.	"no one plays badminton"	response by nodding his head.	shakes head

Table 1 is the findings through interviews with MBKs studied. Based on the response given, it was found that 3 SNS, SNS-2, SNS-4 and SNS-5 had very weak communication skills. They only respond through body language and facial expressions. SNS-5 only briefly answers teachers's questions. SNS-1 and SNS-3 can interact by answering teacher questions, however in Q3 both SNS were still with the stance of pushing and giving excuses for not carrying out sports activities. From the responses received through interviews, it was found that SNS have relatively weak interpersonal skills and do not complete the six interpersonal skills that need to be mastered like the ability to receive feelings, receive ideas, ask questions, convey information, convey instructions and communication skills.

#### **4.3 Action Planning**

Based on the data collected, Star track project was chosen as a method of action to refute the factors that have been identified that cause Special Needs Students are not interested to engaging in sports activities and also a method to change the better interpersonal skills for the students studied. This Project's activity was carried out using the fitness test method. It involves activities such as Fitness Fun Games, Morning Jogs and Walks, and Endurance Race. According to Falls (1980), physical fitness is divided into two, namely physical fitness for health and physical fitness for performance. In this research, both physical fitness tests were used to measure the level of health of the students involved and to measure their ability to compete in sports activities. Star Track Project is more of a fun game. In this project, it also involves the participation of other students as helpers and we call them "Interaction Agents". This Interaction Agent assigned to create social interaction with students studied. Individual and teammate approaches were used in the implementation of this project to motivate students and teammates to perform activities. In addition, positive rewards are also given to appreciate their efforts. At the same time, observations on interpersonal skills were also done by teachers using observation instruments.

Star Track Project is carried out the three following activities per week during a physical education subject. First is Fitness Fun Games training, it was modified from circuit training. During this activity, students carry out activities with a group of student. Second is Mornings jogs and walks. This exercise is more of a leisurely running activity while enjoying nature with a distance of 3 to 5 kilometers slow running or fast walking by a group. In each group will be placed an interaction agent who is tasked with guiding the study sample to communicate. They are assigned to invite the student to chat, ask questions and do any activities that can help improve communication skills, express feelings, convey and receive ideas throughout the activity. Third is Endurance race. It is Adaptive activity from 1000m endurance race in IAAF Kids Athelatic Modul. The implementation of the activities is shown in table figure below.

*Figure 2 : Activity Schedule*

"STAR TRACK PROJECT" Activity Schedule					
WEEK	TYPE OF TRAINING	OBJECTIVE	ACTIVITY	IMPLEMENTATION'S METHOD	ASSESSMENT'S METHOD
1	Fitness Fun Games	1. Increase cardiovascular endurance. 2. Increase muscle strength and endurance. 3. Improve coordination, agility and flexibility of the body. 4. Increase the motivation and self-discipline of athletes. 5. Able to assess individual fitness levels. 6. To see the development of interpersonal skills	1. push-ups, 2. bench stretching, 3. back-and-forth running, 4. burpee backstroke 5. squad jump.	1. 2 set 2. Rest 3 – 5 minutes ( each set ) 3. Execution Time – 30 second per-station	Time Record Behavior Observation
2	Mornings jogs and walks.	1. Increase cardiovascular endurance. 2. Lowers resting pulse rate. 3. Lowers the percentage of fat in the body. 4. Increase leg muscle endurance. 5. Improving individual fitness levels on the cardiorespiration component. 6. To see the development of interpersonal skills	1. Slow running 2. Fast walking	1. Slow running or fast walking by a group. 2. 3 or 5 km	Behavior Observation
3	Endurance Race	1. Increase cardiovascular endurance. 2. Build and increase speed. 3. Increase the power of speed 4. To see the development of interpersonal skills	1. 5x50 meter relay.	1. 5 times running in each group. 2. 50 meter running for each groups member.	Time Record Behavior Observation

During the implementation of the three phases of the activity, observations were conducted to identify whether there were changes in the interpersonal skills of the students studied. Observations are made while the student is in the activity. That is, when listening to instructions, during group activities such as discussion, problem solving and when a teacher or friend asks questions to the students studied. Changes in interpersonal skills are assessed based on interpersonal responses whether directly or indirectly. 12 skills in interpersonal intelligence were selected. These skills will be assessed to identify whether the approach used during the star track project can make a difference to their interpersonal development or not. Any action, response or reaction that shows it as a behavior or interpersonal skill that has been listed will be marked in the checklist. The scope of the assessment of interpersonal skills change is shown in the instrument form figure below:

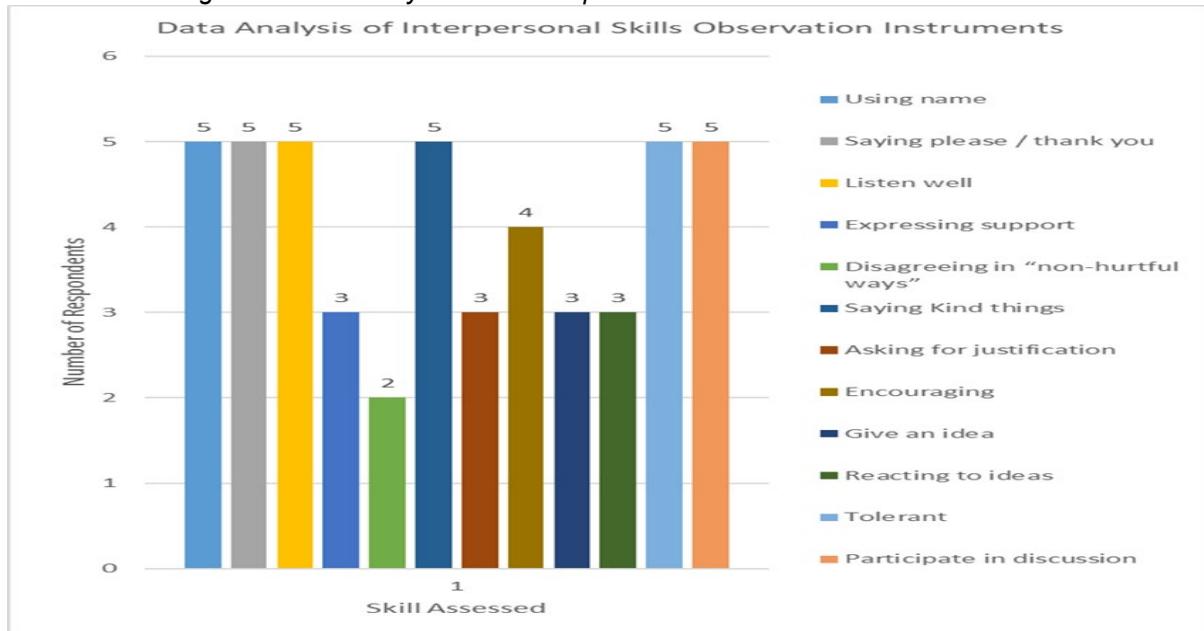
Figure 3: Observation Instrument Form

PROGRAM PENDIDIKAN KHAS SMK KAMPONG SOEHARTO STAR TRACK PROJECT <i>interpersonal skills checklist</i>				
BIL	SKILLS ASSESSED	YES	NO	Notes
1	Using name			
2	Asking for help			
3	Saying please / thank you			
4	Listen well			
5	Expressing support			
6	Disagreeing in “non-hurtful ways”			
7	Saying Kind things			
8	Encouraging			
9	Give an idea			
10	Reacting to ideas			
11	Tolerant			
12	Participate in discussion			

## 5. Data Analysis and Finding

Based on observations on the interpersonal skills of the students studied, all 5 of them managed to show changes in the development of their interpersonal skills. The results of the observations were analyzed and shown in figure 4.

*Figure 4: Data Analysis From Interpersonal Skills Observation Instrument*



Based on the data analysis of the interpersonal skills observation instrument during the implementation of the activities, it was found that there has been a process of interpersonal skills development among the students studied. It was also found that the students 'existing interpersonal skills improved and the approach in the star track project activities had added value to the other interpersonal skills on them. Based on the information on the chart, all students surveyed had mastered 6 of the 12 skills assessed. They managed to master important aspects of interpersonal skills such as using names, saying thank you, listening well, saying kinds things, being tolerant and participating in discussions. Although there are students who do not fully master the other 6 skills but the number is very small, compared to the large number of other students who managed to master. It shows an excellent improvement in interpersonal skills.

## **6. Discussion and Conclusion**

In conclusion, through this study, we can see the factors that cause the lack of interest of students with special needs in sports activities. Investigations through questionnaires of pupils and parents showed the factors were both highly correlated. Lack of exposure to sports from parents causes a sense of interest in sports does not arise in students. Through the sports activities carried out, it can be concluded that the inclination and interest in the activity must be nurtured from the beginning. Parental support of students with special needs for sports activities is very important in the process of building self -confidence and interpersonal skills of students with special needs. The approaches used in Star Track activities also show a change in students' perceptions of sports activities. The sports environment plays an important role. Students do not necessarily have the perfect sports equipment, or need to frequent the sports arena, it can be exposed through spectacle, leisure activities, conversation and so on. Continuous training is not something that is tiring but it increases fitness. From the aspect of sports talent, it can actually be polished and not necessarily it is naturally present in everyone. Based on the data collected and analyzed

shows that this Star Track Project has answered the research questions. The students studied have shown positive changes in their interest in sports activities. Their interpersonal skills have improved through the approach implemented in the activities that have been carried out in this project. It shows that the implementation of the action taken has succeeded in achieving its objective.

However, all the factors mentioned in the findings of the study are not something that can be concluded. This is because the development of special need student are different varies. Each student has a different ability and level of ability. Therefore, proposals to add value to activities in the Star Track Project need to be made by looking at relevant aspects, such as adapting activities according to ability level, involving more interesting creative movement activities and activities that can enhance various intelligences. Having successfully increased students' interest in sports activities and improved their interpersonal skills through sports activities, I realize that students with special needs need to master various other intelligence skills because they are a guide for teachers to identify the potential of students. Therefore, I suggest that a study be done to examine the importance of sports activities on various other intelligences.

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# SPECIAL EDUCATION TRANSITION ENRICHMENT PROGRAM: AN INDIVIDUALIZED PROGRAM FOR INCLUSION INTO MAINSTREAM SOCIETY

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## ABSTRACT

The discussion on Inclusive Education should not stop in the inclusion of children with special needs into school settings but should extend to including them in society. Inclusive education should also have the end in mind. With that, the Special Education Transition Enrichment Program (SETEP) of TW Community Enablers was birthed to address the concerns of parents and other stakeholders involved in the holistic education of the individual with special needs of what happens to the child after formal schooling. This case study aims to present the development of the mentioned program, the process of admission of the child to his/her exit from the program, the challenges that the program continually faces, and some suggestions to improve its implementation. The program has five tracks, namely: Independent living, Post-secondary education, Community participation, Employment, and Leisure and Recreation. The program boasts an interdisciplinary approach that supports the individual's total development as he/she is prepared for independent living. Although the program faced challenges, it shows its strength in its comprehensiveness and individualized approach to transition education. The program sees that more advocacy work should be done for transition programs like SETEP to flourish in the Philippines.

**Keywords:** Transition planning, programs, inclusion

## 1. Introduction

Transition planning is a set of coordinated, results-oriented activities that prepare individuals with a disability for independent living. It focuses on the person's movement from school to activities done after their total schooling is done. Planning involves looking into the person's dreams and aspirations matched with their skill level. Bates, Brokema, Ames, and Hess (1992) mentioned that transition planning involves three processes. First, identification of the student's goal and how they see themselves in the future. Next is determining the services needed by the students to attain their goals. Lastly, connecting with other institutions and agencies. These pieces of information are used to design a series of activities geared towards developing skills for a successful adult living (Loh & Yahya, 2013).

The researcher has observed that in the Philippines, most institutions catering to the needs of individuals with disabilities focus on schooling but not on post-school preparation. An unpublished paper by Quijano (2007) that presented a Philippine framework of transition education mentioned that the parents and professionals still lack the know-how on transition

planning and education. This finding was supported by Martin and Boon (2007). They said that the need for orientation of teachers and parents to the importance and process of transition is vital in developing any transition program. Parents are usually confronted with the dilemma of what will happen to their children with disabilities once they are gone. In this light, the Special Education Transition Enrichment program (SETEP) of the TW Community Enablers (TWCE), a private rehabilitation center for adolescents and adults with disabilities, was born. The program aims to educate its students and prepare them for independent living.

## **2. Methodology**

This is a case study that looked into the development of the program, the structure of the program, and an evaluation of the program. Interviews, observations, and documentary reviews were done to identify the processes undergone by the institution in the development of the program. This study aims to identify the program development and implementation process of this transition education program.

## **3. Results and Discussion**

### **3.1 The Program**

The Special Education Transition Enrichment Program (SETEP) is an individualized, interdisciplinary special education program that focuses on meeting the transition needs of a person with a disability. It is the special education arm of TW Community Enablers, an adult adolescent rehabilitation clinic which aims to help people with disability create meaningful lives. The program admits adolescents and adults 13 years old and above and has five modules, namely: Independent Living, Employment, Post-secondary education, Community Participation, and Leisure and Recreation with Communication and Functional academics integrated into each module. There are two settings that the program can be done: center-based and home-based.

It was created to accommodate the changing developmental needs of the children served in the pediatric clinic Therapy Works. It heeds the call for a more functional program that most schools do not provide. The program also targets the educational needs of individuals who find it challenging to flourish in a larger group setting.

In developing the program, the program's director needed to benchmark existing transition programs. Most of these programs were in the National Capital Region (NCR) and were run by therapists who saw their students on a per session basis and were not complete school-based programs. Challenges to these programs were the inability to do intensive training of the students, thus, difficulty attaining the transition goals. Government-run programs such as the one proposed by Quijano (2007), though comprehensive, faced challenges like a lack of networks with companies that could hire and absorb the students from their programs. Also, the program catered and was designed for individuals with intellectual disabilities. Hence, Quijano (2007) programs were preparing students but encountered difficulties placing students after their training in the centers. These programs' challenges were on top of changing the parents' attitude towards transition education. More advocacy needs to be done to change their perspective about their child just being in school and not looking beyond it.

After benchmarking and reviewing existing programs, the program developers needed to create a comprehensive framework to cater to their students' different abilities. They ensured an exit from the program by linking with companies who are willing and ready to employ the graduates.

The program's framework is shown in Figure 1. The students who qualify for the program fall between the cracks in their previous schools with many students. They are the ones whose parents notice are not benefitting anymore in large class settings. Also, the students who enroll are those students who parents and teachers feel would benefit more in an individualized setup. Once the child is enrolled, assessment and evaluation will be done to ascertain the child's skills and needs. This information will help in the development of the Individualized Transition Plan where parental engagement is strongly encouraged. Parents and the child help set the goals and targets for the plan. The parents and the child, depending on their goals, will be introduced to the five modules of the program. The program might involve assisting the individual's placement in the workplace, post-secondary institution, or assisted setting.

Figure 1: The SETEP Framework

### 3.2 Modules



The SETEP features five modules from which the identified goals of the parents and students are classified into. Once identified, the program director categorizes the goal into the modules and individually designs the activities suited for the student based on the evaluation of the student's skills done at the start of the process.

#### 3.2.1 Independent Living

This module aims to target the development of skills that are involved in successful adult living. The activities include grooming, nome maintenance, and self-management skills. Activities include eating, dressing, toileting, grooming and hygiene, food preparation, housekeeping, health and safety, care for pets and plants, financial management, and self-determination skills.

### **3.2.2 Leisure and Recreation**

These involve activities that are non-obligatory and engaged in for relaxation, enjoyment, and personal growth. These are activities that are not work-related or activities necessary for existing. These may include but are not limited to painting, arts & crafts, baking, cooking, board games, football, and other sports, and yoga.

### **3.2.3 Post-secondary School Participation**

These activities are done to assist the adolescent or adult develop the skills needed to succeed in post-secondary school endeavors. These activities include involvement in school-related activities with varying levels of modifications, applying for identified institutions, accomplishing academic requirements, demonstrating expected behaviors according to institution rules & regulations, following a routine of college classes, organization skills, following school rules, working with a group, and participating in extracurricular activities

### **3.2.4 Employment**

This module involves job seeking and keeping skills, participation in volunteer or vocational activities, and achieving meaningful employment. Activities may include job skills, interests and aptitudes, job seeking and acquisition, job performance, salary and compensation, and an internship program.

### **3.2.5 Community Participation**

This module comprises skills that enable the student to engage in community activities such as identifying community services, appropriate behaviors in public spaces, eating out skills, shopping, banking, accessing community transportation, and self-advocacy skills.

### **3.2.6 Achievements**

The center made several achievements. First, it created more awareness among the students, their families, and the community regarding the importance of transition education. Through the art exhibits that were held, commissioned works of art created income for students and ignited hope among their parents for a bright future. Secondly, the interdisciplinary approach was a vital component in the program as different professionals worked together in the transition planning and implementation of the student's plan. This approach ensured that all areas of skill development are covered, and a comprehensive approach to teaching is attained. Also, the individualized approach made sure that the program was tailor-fit and specifically designed based on the students' dreams, aspirations, goals, needs, and abilities. Lastly, a few students were eventually placed in employment with the help of other institutions.

### **3.2.7 Challenges**

The center continues to fight for its advocacy of increasing awareness of the importance of transition education and countering the notion that persons with disabilities are perpetual children and need to remain in conventional schooling. It is also a challenge to find teachers who are interested and trained in implementing transition activities. Finally, a big challenge is creating opportunities for the student once they exit from the program. Companies and institutions that will hire students with disabilities are still scarce in the Philippines.

## 4. Conclusion

The journey of the center that revolves around helping adults and adolescents have a brighter future ahead of them is still narrow and challenging. Still, the center sees glimmers of hope as more people become aware of the importance of transition planning and education. The center still feels passionate about bridging the gap between schooling and independent adult living for persons with disabilities.

## Acknowledgment

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# IMPLEMENTATION OF THE INTERNSHIP PROGRAM FOR STUDENT WITH SPECIAL NEEDS AT THE HIGH SCHOOL LEVEL

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## ABSTRACT

This study aims to reveal how school readiness is in the process of adding insight to the world of work and adding skills or Internships for children with special needs at the high school level. This research uses a descriptive approach. The subjects of this study were principals and teachers from several special schools. Data collection was carried out through surveys. The results of this study are as follows: schools do not yet have vocational teachers who are linear with the areas they can provide, facilities for teaching vocational education to children with special needs at the secondary level are inadequate, lack of parental involvement to be involved in the preparation of vocational programs for students with special needs, several schools have not carried out an internship program for children with special needs at the senior high school level and there has not been any cooperation with the business world and the industrial world due to the difficulty of the business world and the industrial world in accepting children with special needs for the internship program. The conclusion from the research is that to carry out an internship program, the need for collaboration between several parties, such as schools, parents, the business world, and the industrial world as well as local policymakers so that students with special needs at the high school level can also feel how to learn in work situations and are ready to continue life after graduating from school, able to be independent, and confident in working with the community.

**Keywords:** Internship, students with special needs, business world industry

## 1. Introduction

The times and the rapid globalization have not only given rise to various social, economic, cultural, and technological phenomena but also increasingly tighter levels of competition, both between countries and between individuals. Likewise, with children with special needs, they must have adequate abilities for their provision in the life to come so that children with special needs can live independently. Education for children with special needs has different principles from education for regular children (non-special needs). Children with special needs or children with special needs not only learn about the development of academic abilities but also develop their functions as a result of the obstacles they have. One of the abilities that must be possessed by children with special needs is vocational skills. This is by the special education curriculum for the upper secondary level providing an allocation of 40% for academics and 60% for vocational skills so that children with special needs at the upper secondary level are more equipped with vocational skills so that they can live independently after graduating from school. Children with special needs also need

activities or programs that support them to be able to engage and work with the community. So that special schools require a program, namely apprenticeship. According to Law Number 13 of 2003 concerning Manpower, apprenticeship is part of the job training system which is organized in an integrated manner between job training in training institutions by working directly under the guidance and supervision of instructors or workers/laborers who are more experienced, in the process of producing goods and/or services in the company, to master certain skills or expertise.<sup>1</sup>

Vocational skills are developed as reinforcement for independent living, independent from other people and preparation for work, which includes (1) information technology and computers; (2) acupressure; (3) electronics; (4) automotive; (5) tourism; (6) beautification; (7) culinary; (8) fashion; (9) communication; (10) journalism; (11) performing arts; and (12) fine arts and crafts<sup>2</sup>. Vocational education is oriented to enter the business world and the industrial world so that graduates from special education are equivalent to other general education. The success of vocational education requires innovative strategic planning of the roles of educators and education personnel as well as government support through policies that become the umbrella of legality, thus the existence of children with special needs in the business world and the industrial world is the obligation of (1) Government, Regional Government, Business Entity State-Owned and Regional-Owned Enterprises employ at least 2% (two percent) of persons with disabilities of the total number of employees or workers.<sup>3</sup>(2) Private companies are required to employ at least 1% (one percent) of Persons with Disabilities of the total number of employees or workers. Apprenticeship is an effort to provide experience, knowledge, and real work skills about the production process in the Business and Industrial world that are needed by children with special needs at the high school level. The importance of industrial experience for children with special needs has received very serious attention by the government through the Directorate of Primary and Secondary Education. Realizing the lack of provision of industrial experience for children with special needs, the government cq the Director-General of Primary and Secondary Education, should the education unit carry out an apprenticeship program in class XI for at least one month.<sup>4</sup>

Based on the above policy, schools are trying to carry out apprenticeships for children with special needs at the high school level, several schools have succeeded in collaborating with the Business World and the Industrial World and implementing apprenticeship programs and have even collaborated in the form of accepting graduates of children with special needs to work in their companies. . However, some schools have not collaborated with the Business World and the Industrial World and have implemented an apprenticeship program due to the lack of involvement of various parties to support the success of the apprenticeship program in special schools. The failure to implement the apprenticeship program has an impact on children with special needs at the upper secondary level who cannot explore their abilities in the industrial sector with work situations. The objective of the industrial apprenticeship program for children with special needs is to improve the quality of graduates, namely to provide them with real work experience in the Business and

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<sup>1</sup> Undang-undang Republik Indonesia Nomor 13 Tahun 2003 Tentang Ketenagakerjaan

<sup>2</sup> Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 157 Tahun 2014 Tentang Kurikulum Pendidikan Khusus

<sup>3</sup> Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 Tentang Penyandang Disabilitas

<sup>4</sup> Peraturan Direktur Jendral Pendidikan Dasar dan Menengah Nomor: 10/D/KR/2017 Tentang Struktur Kurikulum, Kompetensi Inti, Kompetensi Dasar dan Pedoman Implemenataasi Kurikulum 2013 Pendidikan Khusus.

Industrial Worlds. Armed with vocational education, children with special needs can develop themselves or work for other parties by obtaining recognition of decent income. Of course, this skills learning model requires a management system that involves various parties functionally (parents of students, schools, industry or business units, and government and society).

## 1.1 Vocational Learning for Children with Special Needs

By the Regulation of the Minister of Women Empowerment and Child Protection of the Republic of Indonesia Number 10 of 2011 concerning the Policy for Handling Children with Special Needs in article 3 paragraph (1), that "Policies for handling children with special needs include programs in the general fields, education, work skills training". A child has the right to education and skills training according to his abilities and talents. This requires a professional team to carry out education and training needs assessment services and implementers. This is done to obtain data about the needs and abilities of children with special needs so that the skills learning program can be appropriate and appropriate. Life skills education is provided in a self-reliance program that is oriented to prepare children with special needs to enter the world of business or the world of work (Prihatin, Diana, and Permana, 2017: 308).<sup>5</sup> Thus, through vocational or skills learning, children with special needs can adapt to the community environment, live independently according to their abilities. Meanwhile, vocational skills are skills that are associated with certain fields of work and are found in society (Rapetto & Andrews, 2012: 162).<sup>6</sup> Based on the structure of the special education curriculum, children with special needs at the Upper Middle School level get learning skills that are given according to the abilities and interests of the children. Learning these skills will later lead to an increase in children's vocational abilities. According to Ishartiwi (2010: 23)<sup>7</sup>, education for children with special needs both in regular schools and in special schools is primarily oriented towards developing the potential possessed by implementing skills learning to provide provision for useful post-school work skills for children with special needs. Unfortunately, the implementation of vocational skills learning is given at the level of learning vocational abilities (Ishartiwi, 2010: 24), so that the level of skill material provided in schools has not met the level of proficiency needed in the workforce. To support the fulfillment of this level of proficiency, an apprenticeship program is carried out.

The importance of providing vocational learning to children with special needs at the Senior High level greatly affects the level of self-adjustment ability during adulthood in society. (Heward, Alber-Morgan, & Konrad., 2017: 489) for this reason, the development of self-reliance must be managed during the transition from school to society. Career opportunities for children with special needs have limited opportunities due to the various limitations they have. Individuals with disabilities and even SLB graduates are still a minority to be employed compared to children without special needs or disabilities (Heward, Alber-Morgan, & Konrad., 2017: 499).

<sup>5</sup> Prihatin, Eka, Imas Diana A. & Johar Permana. (2017). *Model Manajemen Pendidikan Life Skill pada Anak Berkebutuhan Khusus*. Jurnal Penelitian Pendidikan No X Hlm. 306-317.

<sup>6</sup> Repetto, Jeanne B. & W. Drew Andrews. (2012). *Handbook of Adolescent Transition Education for Youth with Disabilities: Carrer Development and Vocational Instruction*. Michael L. Wehmeyer & Kristene W. Webb Ed. New York: Routledge.

<sup>7</sup> Ishartiwi. (2010). *Pembelajaran Keterampilan untuk Pemberdayaan Kemandirian Anak Berkebutuhan Khusus*. Dinamika Pendidikan Majalah Ilmu Pendidikan FIP UNY nomor 02.

## 1.2 School Challenges in Implementing the Apprenticeship Program

The apprenticeship program is part of job training for students at companies that are partner schools. Based on Law Number 19 of 2011 concerning the ratification of the Convention On the Rights of Persons with Disabilities which regulates the fulfillment of the rights of persons with disabilities in Indonesia, it is clear that the Indonesian Government must be serious and committed to respecting, protecting and fulfilling the rights of persons with disabilities to achieve prosperity. persons with disabilities and are entitled to receive respect for their mental and physical integrity based on equality with others, including the right to receive protection and social services in the context of independence, as well as in emergencies. It is a dilemma in the implementation of this post-school transition service. Children with special needs are a vulnerable group that must be taken care of, but the need for continuity of vocational learning is also necessary.

An apprenticeship is a form of education and training that will shape the competence of students. Apprenticeship for children with special needs at the upper secondary level in its implementation is to provide direct experience to children with special needs to be involved in the world of work so that children with special needs can get structured training from someone who is an expert in their field of work. But what is a challenge for special schools to carry out apprenticeship programs for students with special needs are (1) Many special school teachers who do not match their educational background with the vocational field being taught and teachers do not have skills that can lead children with special needs to enter the world. (2) Lack of facilities and skills infrastructure that support children with special needs to master life skills at school (3) Preparation of very expensive costs to make an independent work training or workshop for children with special needs and (4) Collaboration of parties schools and the world of work that have not been well established to provide collective skills for children with special needs. Several schools in Aceh also have problems like the one above, so that schools independently conduct training for teachers who do not have vocational skills so that teachers can provide vocational learning properly according to the needs of children with special needs. Some schools also set up independent businesses in schools such as catering services, motorbike washing services, and home and office cleaning services. Thus the school has an independent business where children with special needs can learn to work and directly work with the assistance of teachers in the school. This is done so that later children with special needs can be more confident in working with the community.

## 2. Method

The method used in this research is descriptive. Data were collected by conducting a survey to special schools in Aceh regarding the implementation of apprenticeship programs in schools. This research uses descriptive research. The subjects of this study were school principals and teachers from several special schools.

## 3. Result

The challenge for special schools to implement an apprenticeship program for children with special needs is still homework the school, how can schools get out of the problem of apprenticeship for students with special needs, such as cooperation with the business world and the industrial world, teachers who do not have skills, and

adequate infrastructure. inadequate. some of these problems have shed some light on several special schools. This must be done and developed by the school considering the purpose of special education so that children with special needs can live independently and be confident to work together with the community.

#### 4. Conclusion

The implementation of the apprenticeship program helps children with special needs to be directly involved in working in the world of work. The efforts made by the school to carry out an apprenticeship program can be carried out regularly so that in the future the program can run well and in a structured manner. There needs to be a school effort to fight for the rights of children with special needs to the officeholders in their respective regions. Further research is needed regarding the implementation of apprenticeship programs for children with special needs by individual programs that have been designed by the previous teacher or changes to the design of new individual programs.

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## PEPs IN IMPROVING ACADEMIC PERFORMANCE IN GENETIC CONCEPTS OF GRADE 11 STEM STUDENTS

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### ABSTRACT

This research was purposely conducted to improve Genetic Concepts of Grade 11 STEM Students of Gonzaga National High School in their General Biology 1 subject for the School year 2020-2021 through the use of an intervention. The interventions that were utilized called PEP (Puzzles, Edmodo and Punnet Blocks) were combination of teaching and learning activities which enabled the students improved learning of students on the said concepts. Puzzles using the improvised punnet blocks will help them to easily understand the concept in Genetics specifically on Monohybrid and Dihybrid crosses. These interventions were aligned with the New Normal in the absence of the face to face learning. The intervention will be implemented through Online Distance Learning Modality where series of puzzles and activities were uploaded in Edmodo. The proponent used the descriptive-comparative approach using the paired sample t-test in determining the significant difference of their pre and post-test and the effectiveness of the PEPs intervention through Cohen's d formula. The data gathered by the researcher conveyed that the students with learning gaps in Genetic Concepts particularly in Monohybrid and Dihybrid crosses had greatly learned a lot after the intervention, through an increased percentage of their mastery in Genetic Concepts. Hence, the intervention applied had been found to be truly effective. The Intervention helped the students increased their academic performance particularly on the mastery of monohybrid and dihybrid crosses thru the guidance of their parents and siblings. These interventions with the use of the platform Edmodo, motivated them to learn more in the absence of Face to face learning because of the Pandemic. It was then recommended that coming up with other interventions will be a great help to the improvement of the academic performance not only for the coping students but for all the students in the class.

**Keywords:** Mastery of Genetic Concepts, Puzzles, Edmodo, Punnet Blocks, STEM

### 1. Introduction

Technology is widely used today by people and it must be used to enhance students' performance. Students are skillful with the use of technology and this had affected their daily routines. In classrooms, teaching and learning process are aided with support learning materials to further motivate the learners to actively participate, hence improving the performance of our learners. One of the widely used technologies today by the millennial is the use of the internet. Tapscott and Williams (2017) in their study have shown how social network applications can significantly improve student learning and knowledge acquisition, enabling them mutual interaction, cooperation, active participation, sharing resources and critical thinking. Social network/media technology in this context include Edmodo, Blog, Wiki, Facebook, Youtube, Twitter, online discussion forum and others.

Deng and Tavares (2016) also concluded that “Web-based discussions can contribute to the development of students’ reflective ability and critical thinking skills. Also, compared to face-to-face (F2F) interaction, students are more willing to voice their views or even disagreement and are more attuned to others’ opinions in online discussion.” A number of researchers have outlined a number of student benefits in relation to education as a result of social network participation.

(Blaschke, 2016), Social media technology provides educators with an opportunity to engage learners in the online classroom, as well as to support development of learner skills and competencies.

Chukwu, J. C., & Dike, J. W. (2019) in their study on the Effects of Jigsaw-puzzle and Graphic Organizer Instructional Strategies on Biology Students’ Performance concluded that the use of Jigsaw Puzzle and graphic organizer instructional strategies in teaching have significant effect on the senior secondary school students’ academic performance than lecture method in Growth as a concept in Biology. The study therefore provided empirical evidence on the relative efficacy of interactive and learner centered strategy in enhancing the performance of students in Biology.

The researcher noted a pressing concern that most of his Grade 11-STEM student’s exhibit problems on the biology, specifically in the concept of genetics. Based on the quizzes of his students, and data gathered during LAC sessions, the researcher noticed that they got low scores in their quizzes. Based on the academic performance from the written diagnostic test on Concepts of genetics, and it was revealed, based on the said diagnostic test that 67% or 57 out of 86 Grade 11 learners have a mastery level of below 75% when it comes to concepts of genetics.

As such, the researcher wanted to ascertain online tutorials session through Puzzles, Edmodo, and Punnet Square could be an effective tools for mastering the concept of Genetics and with the use of puzzles and improvised Punnet squares/blocks thereby making the learners more adept with Genetic concepts and awareness as expected by the K to 12 curricula in Biology 1 and 2.

## 2. Methodology

The Proponent used the triad interventions PEP, Puzzles, Edmodo and Punnet Blocks. Puzzles, Punnets and Edmodo were combination of teaching and learning activities which enabled the students improved learning of students. Edmodo has emerged as an innovative social networking platform in the recent years. Social media has been shown to have a positive impact towards learner hence making the process of teaching and learning more meaningful. This was because social networking tools provided opportunities for students to find information, collected their own material, communicated, and interacted towards each other. Puzzles challenged learners to use their critical thinking skills in solving problems or situations related to monohybrid and di hybrid crosses by utilizing uploaded series of puzzle activities related to the subject matter.

Using the improvised punnet square/blocks helped them determine not just merely by the graphical representation of the possible genotypes of an offspring arising from a cross or breeding event rather, this will be a manipulative

The Edmodo Application teaching-learning is an approach that utilized the World Wide Web as a medium and support material in the delivery of the lessons. It was in this light that the proponent would like to determine the effectiveness of the approach to enhance the active participation and performance of the students in learning genetics concepts.

The proponent introduced and incorporated Edmodo Application as a way to reach the interest of every student under his subject in order to improve their academic performance.

There were many studies that demonstrated and guide teachers on how to use social media especially Edmodo Application for classroom teaching and learning purposes. If educators or teachers planned appropriately as part of an educational project, it would be able to facilitate and produce effectual and meaningful learning.

The study employed the experimental design particularly one group pretest post test design where the same group received the same treatment. The grade 11 STEM students of Gonzaga National High School were the respondents of the study. The researcher administered pre-test and results and recorded, tabulated, and analyzed. The scores in the pre-test and post-test of the respondents were tested and compared for significant difference to determine whether the use of PEP's shall record an improvement or none.

## **2.1 Participants and/or other Sources of Data and Information**

The respondents of the study were the incoming Grade 11 STEM strand students of school year 2020-2021. The primary data in this study were the students' scores in the pre-test and the post-test first session were compared and tested for significant difference to determine the effect size of the PEP's as an approach in teaching genetic concepts and skills of the incoming Grade 11 students of Gonzaga National High School, Gonzaga West District, Gonzaga, Cagayan.

The results of the SY 2019-2020 diagnostic test and summative tests of the incoming Grade 11 students were the secondary sources of data.

### **2.1.1 Data Gathering Methods**

A 40-item researcher made pre-test and post-test which were quality assured by subject experts and who were teaching the concepts as well as the validity of the test questions and following the Revised Bloom's Taxonomy on Cognitive Domain for the 12 sessions were the sources of primary data and were compared and analyzed using the appropriate statistical treatment.

The pre-test were uploaded to Edmodo Application online and were given to the respondents before the implementation of the PEP's.

Each participant created their own Edmodo account and after they were done with the creation of their own account, they received notification for them to start the uploaded pre-test. The result were automatically checked and recorded using google forms or was reflected in the

application that was used. The process was also the same during the implementation of the post-test. Competencies on genetics were taken from the curriculum guide for General Biology of the incoming Grade 11 STEM students were administered on the scheduled teaching and learning sessions. The selected worksheets from the LDRMS portal and other teacher-related websites and teacher made activities were utilized appropriately. The use of the punnet Blocks was also discuss and the Punnet Blocks User's guide were distributed to participants.

### **2.1.2 Data Analysis Plan**

To analyze and interpret the data that were gathered in this study, the following statistical tools were used: Mean and standard deviation were utilized in analyzing the pretest and post-test results.

Paired Sample T-Test was used to determine the significant difference of the pre-test and post-test results.

The Cohen's d formula was used to determine the effect size of the PEP's in the achievement level of the respondents.

### **2.1.3 Ethical Issues**

After explaining to the parents about the importance of the study, those parents whose son/daughter do not have android cellphone agreed to look for remedy/provide their son/daughter with android cellphone as prerequisite in the said study.

As evidenced of their willingness in support of the study, a communication letter was made by the researcher affixing their signatures with the content that they allow their sons/daughters to use/provide android cellphones with the primary intent as a supplementary intervention of improving academic performance in the General Biology particularly on the concept of genetics.

Utilizing the cellular phones or laptops of the students, the Edmodo was installed by the proponent wherein each member of the class will be instructed to join. The teacher will post topics/questions on the desired competencies that need to be mastered by the students in the form of review or exercises. It was also a chance to reach out students who failed to attend classes for other reasons. In this way, learners freely asked their questions to the teacher or from their classmates and posted their responses. This was done between 4:00 – 5:00 pm or asynchronously depending on the pace of the students from the different competencies without affecting their regular class schedule.

For ethical issues, the conduct of this action research was acknowledged and approved by DepEd officials. After the approval, the proponent obtained consent of the parents and/or assent of the students' participants. Authors of books, journals, publications as well as websites and from the internet which were used as references in the conduct of the study were be properly acknowledged and cited. Further, confidentiality of the data/documents that were generated from the respondents' tests were highly ensured. All the data that were collected were solely used for the purpose of the study.

### 3. Discussion of Results and Reflection

*Table 1. The mean scores of the Pre - Test and Post- test result of the respondents*

	Mean Scores	SD
PRETEST	22.44	7.312504856
POST TEST	27.62	6.447769954

Table 1 shows the result of the Pre-test and Post-test scores of the Grade 11 STEM students. It shows that the mean scores of the pretest scores of students is 22.44 and the mean post-test scores is 27.62 with a mean difference of 3.66.

Van Horn (2015), students who participated in hands-on science would score significantly higher science content post-test scores than they would score on science content pretests. Another, he stated that students who participated in hands-on science would score significantly higher science content posttest scores than students participating in the textbook-oriented instructional approach.

*Table 2. Test of difference between Pre-Test and Post Test results of the respondents.*

	Mean	T computed	Critical value	p value at 0.05	REMARKS
Pre-test	22.44				
Post-Test	27.62	-20.05	2.004	.0001076	SIGNIFICANT

This presents the significant difference between the Pre-test and Post-test of the students after the utilization of the intervention PEP.

Data on the table indicated that at 0.05 level of significance, the p-value computed which is truly higher than the critical/tabular value which is 1.077E-26. These data clearly mean that the Pre-test as compared to their Post-test found to be significantly different from each other.

This further means that from having an average cognitive level on the topic presented in the study that was concertize by the students' pre-test result, the students gained a very favorable academic performance after they were exposed to the use of the PEP ( Puzzles, Edmodo, Punnet Blocks ) interventions.

(Heddens, 2017) states that manipulative materials are concrete models that involve science and mathematical concepts, appealing to several senses that can be touched and moved around by the student. Manipulative materials must be selected for the activity and appropriate for the concept being taught and appropriate for the developmental level 8 of the students'.

*Table 3. Test on Significant Difference of the Pre-test and Post-Test scores of Grade 11 STEM Learners after the utilization of PEP*

	T value	Effect Size (Cohen's d )	Verbal description
Effect of PEP to the Mastery in Genetic Concepts of Grade 11 STEM Students	-20.05	1.414	Large effect

The effect size of the interventions used in the research which are the PEP (Puzzles, Edmodo, Punnet Blocks) to the struggling learners of grade 11 students. It shows that the Intervention Material has a large effect in the Mastery of genetic concepts of the grade 11 students a midst this pandemic.

Therefore, the intervention used in uplifting the mastery of genetic concepts of the grade 11 students was very significant since it was favorably increased the post test results conducted by the researcher.

According to Heddens (2017), using manipulative materials in teaching can help students learn how to relate real world situations to science and mathematics symbolism and work together cooperatively in solving problems. He further states that manipulative allow students' to discuss science and mathematical ideas, concepts, and verbalize their scientific and mathematical thinking. Students who use manipulative in their science and mathematics courses usually outperform those who do not, although the benefits may be slight.

Also, (Clements, 2019). Manipulative usage can also improve students' attitude toward science and mathematics, and give instruction that uses concrete materials to help students retain information and increase scores on test.

#### **4. Conclusion**

The result of this research demonstrated that the use of Puzzles, Edmodo and Punnet Blocks were an effective interventions amidst this pandemic to improve Genetic Concepts particularly in mastery of monohybrid and dihybrid cross who were identified to be the respondents. The respondents performed well in activities using the triad interventions (PEP) Puzzles, Edmodo, Punnet Blocks as evidently shown in their increased scores in their post-test as compared to their pre-test.

For teachers who are teaching General Biology 1 and concepts related to genetics, this serves as their basis in intervening students who are coping on the said concept to master the competency on monohybrid and dihybrid cross and they should also make innovations to reach out and help the students at risk because of concepts struggles so that they may be able to overcome their gaps in concepts in genetics . The PEP that were utilized will help them to master solving the monohybrid and dihybrid crosses puzzles using the manipulative punnet blocks by easily listing the ratio and describe the offspring of a certain allele.

Therefore it is imperative to reach the struggling learners even in the absence of face to face learning using productive measures to ensure the students to improve their mastery in the concepts of genetics on monohybrid and dihybrid cross.

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# THE DOORMAT PROJECT TO IMPROVE BASIC SEWING SKILLS OF SPECIAL NEEDS STUDENTS WITH LOW FUNCTION

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## ABSTRACT

Doormat's study was to evaluate the effectiveness of project work conducted on low-functioning students in PPKI SMK Taman Bunga Raya (1). This project was carried out during the basic sewing subject learning sessions and also during the co-curricular activities of the Entrepreneurship Club. A total of 10 students with low functional special needs consisting of "Slow learner", Down Syndrome and physical disabilities were involved in this study. The "Project Based Learning" method is central to the production of doormat products based on used t-shirts. Low-functioning students need more focused and planned learning methods according to their abilities. The production of this doormat uses the basic sewing skills used in Curriculum and Assessment Standard Document Special Education Secondary School Standard Curriculum Basic Vocational Skills Low Functionality. This study uses quantitative and qualitative methods that involve student work. Pre-and post-tests of sewing skills were used to analyse the data. The findings of the study showed that 10 students mastered the basic sewing skills contained in Curriculum and Assessment Standard Document Special Education Secondary School Standard Curriculum low functionality. Students are also more focused on doormat income. The implications of this study can be used as a guide for the improvement of teaching and learning as well as the assessment of low-functioning students based on projects. The alignment of teaching and learning can be practiced through the subjects of Vocational Skills Curriculum Basic Sewing and "Kelab Keusahawanan". It also fosters entrepreneurial spirit among students as this doormat can be varied in terms of design, size and colour to be marketed.

**Keywords:** Doormat, Vocational Skills Curriculum Sewing Basics, Low Functionality, Project Based Learning

## 1. Introduction

The Curriculum and Assessment Standard Document Special Education Secondary School Standard Curriculum low functionality has been introduced since 2019. Among the components found in the is the Curriculum and Assessment Standard Document Special Education Secondary School Standard Curriculum low functionality are Vocational Skills Curriculum Document Basic sewing. Students with low function (SLF) also need vocational skills-oriented learning activities.

Documents Curriculum Vocational Skills (DCVS) for SLF is constructed by adopting the concept of Community-Based Vocational Education (CBVE) or Vocational Education Community Based (VECB) which was suggested by the Individuals with Disabilities Education Act Amendments (IDEA) and the US Department of Labour and Education. This DCVS is an adaptation of the Handbook for Implementing Community-based Vocational Education Programs According to the Fair Labour Standards Act, which is a guide for schools to implement VECB in Malaysia. The concept of VECB is adapted and modified according to the suitability of the environment, policies, and the needs of special needs students (SNS) in Malaysia. The basic aspiration of the VECB concept is to ensure a productive career or employment path for all categories of SNS.

SNS should be given an overview of work assignments, rules, routines, and responsibilities based on the variety of job types and work environments. Exposure and experience to a variety of job types and work environments can facilitate SNS to make decisions about the suitability of their choice of skill areas based on interests and potentials. The findings enable teachers to meticulously plan and document all information, needs, and individual support services in the Individual Education Plan (IEP) and Individual Transition Plan (ITP). The Transition to Career module is integrated together during the implementation of vocational skills areas to SNS (Dokumen Kurikulum Kemahiran Vokasional Kurikulum Standard Sekolah Menengah Kefungsian Rendah 2019).

SLF with learning difficulties usually have specific problem in academics. However, parents always hope that the results of formal education received will enable their children to acquire skills either to get a job or self-employment, at least for them to support themselves (Asmah Abdul Hamid, 2019)

Vocational Curriculum planning for Special Education Students especially for SLF should not focus academically or challenge students "intellectual abilities" in teachers' efforts to teach skills to them. Teachers also need to apply a positive interest and attitude to the learning or skills that students want to achieve (Azizah Munib etl 2014). Pupils should be trained according to their abilities.

## 1.1 Research Background

This study was conducted at SMK Taman Bunga Raya (1) involving 10 SLF who followed DCVS Basic Sewing. The Doormat project was conducted during basic sewing classes and also during the "Kelab Keusahawanan" conducted every Wednesday for co-curricular activities. For the basic sewing class, the time allocated is 16 hours a week. For the "Kelab Keusahawanan" activities, all students and teachers were directly involved in this project 3 hours per week.

This doormat project was carried throughout 2020 and continues to this year 2021. It was continued while students undergo the Learning Process at home during the Movement Control Order (MCO) and Conditional Movement Control Order (CMCO). It was indirectly a collaborative network of student learning that is supported and assisted by parents at home. However, the data taken only involved 10 targeted students with low functions.

## 1.2 Problem Statement

SLF have low concentration and always need teacher's guidance to achieve learning objectives. Teaching and learning methods should also be simple and not overburden them due to their short concentration span and low hand motor coordination. Based on these factors, teachers need to be creative in creating learning activities that do not require specific focus and require them to think carefully. Planned activities should be concise and

meaningful and have a significant impact on students' development and meaningful learning process. Basic sewing skills for SLF require more practical learning and applying the skills which was contained in the basic sewing DVCS. Besides having a short focus problem, SLF also have unpredictable behaviours problems. Therefore, the planned activities should be suitable for students and can create fun for students. Indirectly, the student's learning time will be longer than usual.

The idea of the doormat project was based on a benchmarking tour to *Yayasan Pendidikan Luar Biasa SPLB-C YPLB* in Bandung in 2016 which was organized by JPN Selangor and also a benchmarking tour to SMK Alur Merah, Alor Setar which was organized by PPD Hulu Selangor in 2019. In this tour, the researcher found that both schools implemented a doormat project but using different materials and methods. The results of this tour were used as a guide to implement the doormat project.

The doormat project was started in 2020. This project is one of the main projects of the PPKI SMKTBR (1) and "Kebab Keusahawanan". The dumping of used clothes among the community around Bukit Beruntung sparked the idea to carry out a product-based project on used clothes, namely Doormat SPEED Tabura. This project is specially planned for SLF to mediate their talents in the production of this product. The production of the doormat has a positive impact on the future for students and also instils the value of loving the environment.

### 1.3 Research Objectives

The objectives of this study are to: -

- a) Identify the level of basic sewing skills and SLF ability to produce a given project work.
- b) Identify the level of mastery of SLF in basic sewing skills while making the doormat.
- c) Instilling a spirit of love for the environment and cultivating simplicity as well as materials used for a variety of uses.
- d) Create doormat that can be used and sold in the community

## 2.0 Methodology

The study design used was a one-group post-test pre-test (Campbell & Stanley, 1963). This study involved quantitative and qualitative methods to obtain study data. A group post-test pre-test design, which is a quantitative approach, was used in this study as the dominant design of the study. The study conducted involved pre-test and post-test instruments as data collection methods. The instrument used is a modification of the skills instrument found in the Classroom-Based Assessment (PBD) issued by the Ministry of Education Malaysia. Qualitative data collection through observation was also used in this study to strengthen the data obtained from quantitative methods.

The study population consisted of students with special needs with low functional learning problems in the Special Education Integration Program of SMK Taman Bunga Raya (1). The study sample consists of 10 SLF who follow the Curriculum and Assessment Standard Document Special Education Secondary School Standard Curriculum low functionality which consists of the categories of Slow Learner, Down Syndrome and Physical Disabilities. The sample was selected based on cluster random sampling in which the researcher used the existing classes in the school determined by the school at the beginning of the school session based on the category of students. The following is the analysis table of the study sample:

*Table 1: Analysis of Study Sample by Category*

No	Category	Number of students
1	Slow Learner	6
2	Down Syndrome	2
3	Physical Disability	2
<b>Total</b>		<b>10</b>

### 3.0 Result

The findings of the study were analysed to answer the objectives of the study set. Student achievement is measured using the performance standards set out in the Basic Sewing Standards Document. (DVCS, 2019). There are three levels of performance set out in the Basic Sewing Standard Document as in Table 2 below.

*Table 2: Basic Sewing performance level.*

No.	Competence	Description	Scale
1.	Excellent Competent	SNS were able to perform basic skills well and was able to complete more complex work tasks with focus, accuracy, and creativity without guidance. Pupils are interested, independent and willing to work.	3
2.	Good Competent	SNS were able to perform basic skills and complete work assignments well with minimal guidance. Pupils have an interest and are willing to work but are still unsure of the field and need transition support.	2
3.	Competent	SNS were able to perform basic skills and complete assigned work assignments with maximum guidance. Pupils are unsure of the field of interest and need on-the-job training for a longer period for transition support.	1

The results of the study focus on the objectives of the study and the research questions stated. Each study question was analysed in detail to show the importance of this doormat project work in imparting mastery of basic sewing skills to SLF. Pre-and post-tests were used to elaborate on each of the stated research questions. Data was analysed using the "Wilcoxon Signed Rank Test" to answer the study hypotheses. The results are shown in table 3 as follows:

*Table 3: Number of students who mastered the Pre-Test and Post-Test of Basic Sewing Skills*

No	Skills	Pre-Test		Post-Test	
		Number of students mastered	Percentage (%)	Number of students mastered	Percentage (%)
1	Pick up and hold the scissors properly	5/10	50	10/10	100
2	Cut the fabric the right way	3/10	30	7/10	70
3	Students wrapped yarn / fabric on wood / nails	2/10	20	8/10	80
4	Cut a t-shirt with a size of 20 cm x 1cm	2/10	20	7/10	70
5	Equalize the length of the left and right fabric	2/10	20	8/10	80
6	Insert the fabric that has been cut in the hole between the fabrics	1/10	10	9/10	90
7	Then, tie off twice	2/10	20	8/10	80
8	Name 3 materials used in making Doormat.	5/10	50	8/10	80
9	Repeating activities without guidance.	2/10	20	8/10	80
10	Pack the product	0/10	0	8/10	80

(Resources : DKKV KSSMPK KR Asas Jahitan (2019), Bahagian Pembangunan Kurikulum, KPM)

*Table 3.1 : Basic Statistic*

Ranks		N	Mean Rank	Sum of Ranks
Pos - Pra	Negative Ranks	0 <sup>a</sup>	.00	.00
	Positive Ranks	10 <sup>b</sup>	5.50	55.00
	Ties	0 <sup>c</sup>		
	Total	10		

a. Pos < Pra

b. Pos > Pra

c. Pos = Pra

The Negative Rank between the percentage of students who mastered the Basic Sewing Skills for Pre-Test and Post-Test was 0 regardless of whether the value is N, Mean Rank, or Sum Rank. This value of 0 indicates that there was no decrease between the Pre-Test and Post-Test values.

Positive Rank between the percentage of the number of students who mastered basic sewing skills for Pre-Test and Post-Test. Here there were 10 positive data (N) which meant 10 students showed improvement in mastering the basic sewing skills from Pre Test value to Post Test value. The mean rank showed an increase of 5.50 and the sum rank was 55.00.

Ties were formed by the comparison of the values of the Pre Test and Post Test. Since the value of ties is 0 in this case, it can be said that there was no equal value between Pre Test and Post Test.

Table 3.2 : Basic Statistic

Test Statistics<sup>a</sup>

	Pos - Pra
Z	-2.825 <sup>b</sup>
Asymp. Sig. (2-tailed)	.005

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Based on the output of "Test Statistic" above, it was known that Asymp.Sig (2-tailed) was worth 0.005. Because the value of 0.005 was smaller than 0.05, it can be concluded that the hypothesis was acceptable. That is, there was difference in the percentage of students who mastered basic sewing skills between the Pre-Test and Post-Test. This proves that this doormat project had positive effects on SLF in mastering basic sewing skills.

The first goal is to identify the level of basic sewing skills that students achieve based on the Basic Sewing Standard curriculum, which discovered that students had mastered the basic sewing set. Based on the findings of the study using the instrument used to study the skill level of students. All students achieved performance level 3, indicating that SLF was able to perform basic skills well and complete more complex work tasks with focus, accuracy, and creativity without guidance. Pupils are interested, independent and willing to work. It is based on the findings of the study given in table 3.

To answer the second objective of the study, which is to identify the level of ability of students to produce a given project work. According to the results of the post-test, eight out of ten students were successful in all the prescribed skills. It is within the excellent competency level set out in the Basic Sewing Basic Document.

The findings of the study also show that the third objective of the study is to identify the extent to which this doormat project provides basic sewing skills to students with special needs. The results of the study based on table 3.1 found ten positive data which means that all students can master the basics of sewing set at the level of excellent competence. This proves that this doormat project can improve students' mastering the prescribed skills with a planned and organized method according to simple guidelines and work procedures for teachers and parents to help students master the skills as found in DCVS and produce the prescribed products.

The findings of this study address the study's fourth objective, which is to create a product that can be used and marketed. Based on the results shown in tables 3.1 and 3.2, it is found that students can produce a work that can be marketed because they have mastered the skills given according to the skills set. Based on the contents of the basic sewing standard document, teachers need to plan an action plan for students' career transition based on the prescribed skills, namely Preparing an Individual Transition Plan (ITP) to support SLF readiness to enter adulthood and employment. (DCVS, 2019).

Overall, based on the findings of the study, it shows that SLF can master the basic sewing skills set out in the Basic Sewing Standard Document in the excellent competent category through this doormat project.

## 4.0 Conclusion

The implementation of the Doormatt SPEED Tabura project work can be used as a basis for students to implement a broader project work for SLF. It is also a first step for students to be independent after they leave school, as well as a measure to reduce dependence on parents and relatives. By associating with the "Kelab Keusahawanan", students are also instilled with the desire to build a career. Based on the action plan found in the Basic sewing skills curriculum standard document (DCVS, 2019). Teachers need to plan an action plan by combining several skills and strategies to ensure that SLF acquire optimal skills.

Given that the doormat project provides an increase in the mastery of basic sewing skills among low-functional SLF as well as expands SLF creativity towards an entrepreneurial one. So, we plan to make some improvements to this doormat project as follows:

- i. Innovate the production of this doormat in terms of the use of key materials. Initially, we used t-shirts as the main material. The main materials for the innovation we propose using old batik fabric and used shawls. In addition, we would also like to diversify the size and shape of this doormat in the future.
- ii. Making the doormat as the niche product of PPKI SMK Taman Bunga Raya (1).
- iii. Further expand the marketing of this doormat. So far, this doormat is only marketed on a small scale, that is, its sale is only among PPKI teachers and school residents. The marketing of this doormat product among the surrounding community by placing this doormat product in school cooperatives, grocery stores and kiosks in supermarkets and creating an online marketplace.
- iv. Involve all MBK and PPKI teachers as well as PPM SMK Taman Bunga Raya (1) in the doormat production project. In addition, to ensure the success of this project, strengthen the collaborative relationship between parents or guardians and the PPKI. Make detail and comprehensive planning such as the distribution of students in small groups that will be guided by 2 teachers.

Exposure to teachers and students as well as parents of the importance of project work for SLF can be used as a backup for teachers to explore the future of students in a more organized and directed manner. In addition, this project can also help parents provide education and train their children at home during MCO. It can be a collaboration between the parents and the school in ensuring the well-being of students, especially SLF.

Overall, this study achieved the objectives of the study set for students to acquire basic sewing skills as in the objectives of the first to the fifth study. It is also a step towards the career transition of students with low-functioning special needs. It is the hope of teachers, schools and the MOE that these low-functioning special education students can work, live independently, and make their own decisions as well as generate their own income. The effectiveness of this project work is a catalyst for the MOE's efforts so that low-functional students also acquire skills such as medium-functional students who are involved in Specific Vocational Skills that enable them to have the opportunity to obtain the Malaysian Skills Certificate.

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## CAREER TRANSITION PROGRAM FOR SPECIAL NEED STUDENTS

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### ABSTRACT

The purpose of this study is to analyse the needs of the Special Needs Career Transition Program in school. The Special Needs Students Career Transition Program was implemented to prepare the Special Needs Students with basic and vocational skills as well as individual employment aspects. The objective of the study was to (1) identify the level of readiness among Special Education Teachers in the implementation of the Career Transition Program for Special Needs students in the Special Education Integrated Program (SEIP) and (2) identify the Special Need Student readiness level in the Career Transition Program at SEIP. The research methodology used quantitative method and survey to answer the research questions. The sample were 107 Special Education teachers who implemented the Career Transition Program in schools. The findings show that the readiness level of special education teachers ( $\text{mean}=3.99$ ) need to be enhanced with the implementation of the basic skills courses and the Malaysian Skills Certificate (MSC). Special Needs Students (SNS) [ $\text{mean}=3.88$ ] need to be trained and equipped with 3 basic skills (Reading, Writing, Counting), Vocational Basic skills, Basic self-management skills, Social skills, Communication skills, Problem solving skills, Basic technology skills and deep interest in the field before participating in the Career Transition Program. Meanwhile, the aspects of compliance with the Career Transition Program Guidelines are well-respected and need to be further enhanced among school administrators. It is proposed in the future, all the Special Education teachers must have the Malaysian Skills Certificate and Vocational Skills courses in order to enhance their competence. SNS should be educated with a high degree of self-determination based on their abilities and passion. Systematic Career Transition Program modules and frameworks need to be developed to explain SNS direction upon completion of the Career Transition Program. It is hoped that this study will provide ideas and contributions in streamlining and implementing the Career Transition Program in the future.

**Keywords:** Career Transition Program, Special Needs Student, Special Education Integrated Program, Special Education Teacher.

### 1. Introduction

The Career Transition Program is a process of providing Special Needs Students (SNS) in training and skills in the real world of work. This program is essential to ensure SNS is ready to work after leaving school.

Hence, SNS need to be exposed to natural talent as a process of self-realization in real life (Shaffeei, 2010; 2007). In early-stage, starting from form one, SNS need to be diagnose before they attending the training for Basic vocational skills or Malaysian Skills Certificate courses in the Special Education Integrated Program (SEIP) at their respective schools (Shaffeei, 2019).

SNS marketability is an important factor in developing human capital that contributes to national development (MOE, 2019). The post-secondary SNS market needs to have basic skills in the areas of basic skills, personal qualities, interpersonal skills and tendency to interest in selected fields of work (Ministry of Education Malaysia, 2018).

## 1.1 Background

The career-training process began in 2003 in the Life Skills subject for students with learning disabilities in the Learning Disabilities Classroom Program (LDCP). Basic skills training introduced in the Life Skills subject consists of cooking, sewing, handicrafts, car wash, bicycle and motorcycle maintenance.

In 2006, the Special Vocational Curriculum was introduced by the MOE to assist the SNS in SEIP towards career preparation. There are six components of cooking, sewing, agriculture, handicraft, service and maintenance with the basic amenities available in the school.

In 2015, the Special Education Secondary Curriculum (SESC) was introduced by the MOE as an effort to uphold the education equality for the SNS. In 2018, the students were in form two and they will end their schooling session in 2021. This Education Opportunity opens up the opportunity for schools and SNS to choose the right skills to ensure SNS is skilled, self-reliant and successful.

In 2019, MOE introduced the Career Transition Program to assist SNS in SEIP from form one to five. The program implemented to SNS based on the skills and courses provided by schools, skill centers, industry and Non-profit Government Organizations (NGO). The objectives of the Career Transition program implemented over five years at the SEIP so that SNS would have sufficient skills in the field of employment to suit their level of ability.

## 2. Literature Research

The School to Career Program (Buntat, 2000) was introduced to provide students with training opportunities before they start working. It has been implemented for all upper secondary students from form four to five. The program focuses on moderate academic level students. So, they focused on the work skills during school and most of them have the job opportunities after graduation.

In this regard, SNS Learning Disabilities in particular need to be prepared with various skills for the future of their careers (Shaffeei, 2007; M. Nasir, 2016). SNS at SEIP need to be equipped with a wide range of vocational and personal skills so that they can compete with others in the job market. Therefore, the Skills Curriculum needs to be developed for the SNS at SEIP based on their ability (Mat Isa, 2008). As a result, the vocational skills base courses and the Malaysian Skills Certificate (MSC) courses at the SEIP (MOE, 2015) are expected to enhance the SNS readiness. However, the school needs to ensure that in terms of physical and infrastructure facilities, teachers' skills and SNS readiness contribute to the success of the SEIP curriculum and Career Transition Program. In addition, School-based Training needs to be applied to the SNS Learning Disabilities in SEIP (Shaffeei, 2010; Mat Isa, 2008). This training is carried out in conjunction with the teaching and facilitating process of teachers in schools. Teacher knowledge and understanding are essential for successful training and the Career Transition Program can be applied to SNS. Therefore, School-based Life Skills Training and Basic Skills Training should be practiced in learning at SEIP (Shaffeei, 2019).

According to M. Nasir, (2016), the Career Transition Program helps SNS to prepare for the real world of work. Schools need to play an important role by working collaboratively through industry and skills centres. These skills training indirectly helps SNS in getting a job later.

### **3. Problem Statement**

Special Education teacher readiness factors play an important role in implementing the Career Transition Program in schools. According to Yaakub, Hamzah, (2019), the Special Education teacher knowledge, attitude and skills are at a moderate level. Lokey, Dali (2016) found that the level of commitment among Special Education teachers declines when it comes to administering leadership. This shows that the Special Education teachers' readiness in implementing the Career Transition Program needs to be strengthened to ensure the SNS has the skills and competencies expected in the future.

As such, SNS readiness factors in the Career Transition Program require the support of all parties. According to Kamela & Mohd Alib (2016), students' ability to work are very low. This is because the problem of mastering basic skills is at a low level and needs to be increased. Issues of low capacity and physical capacity of SNS, based on public opinion (Mat Daros et al., 2012) contributed to this study. Factors lack of SNS personal skills in line with employers, wishes (Abdullah et al., 2015) also influence this study.

The compliance factors and guidelines for the Career Transition Program introduced by MOE in 2019 were also the main focus of this study. In order to implement this program, school administrators need to give teachers the opportunity to make the best decision in Teaching and Learning (T & L), Mohd Yusoff & Saidin, (2016). Teachers need to be given the freedom that encompasses the achievement of the school's objectives and mission of the SNS. There is no specific guidance on implementing the Career Transition Program as schools are still unable to perform well (Kamela, & Mohd Alib, 2016). However, the existence of these guidelines can help schools realize their SNS. This indicates that the need for skills training for SNS in the Career Transition Program meets the requirements of employers in the industry.

Therefore, factors of teacher readiness, SNS readiness and adherence to SNS Career Transition Program Guidelines in this study should be considered and analysed to meet the needs of SNS, parents, schools and industry.

### **4. Research Objective**

1. Identify the readiness level among Special Education teachers in the implementation of the Career Transition Program for special needs students at SEIP.
2. Identify the readiness level of Special Needs Students in the implementation of the Careers Transition Program at SEIP.

#### 4.1 Study Framework

Figure 1: Study Framework Implementation of Career Transition Program at Special Education Integrated Program (SEIP)

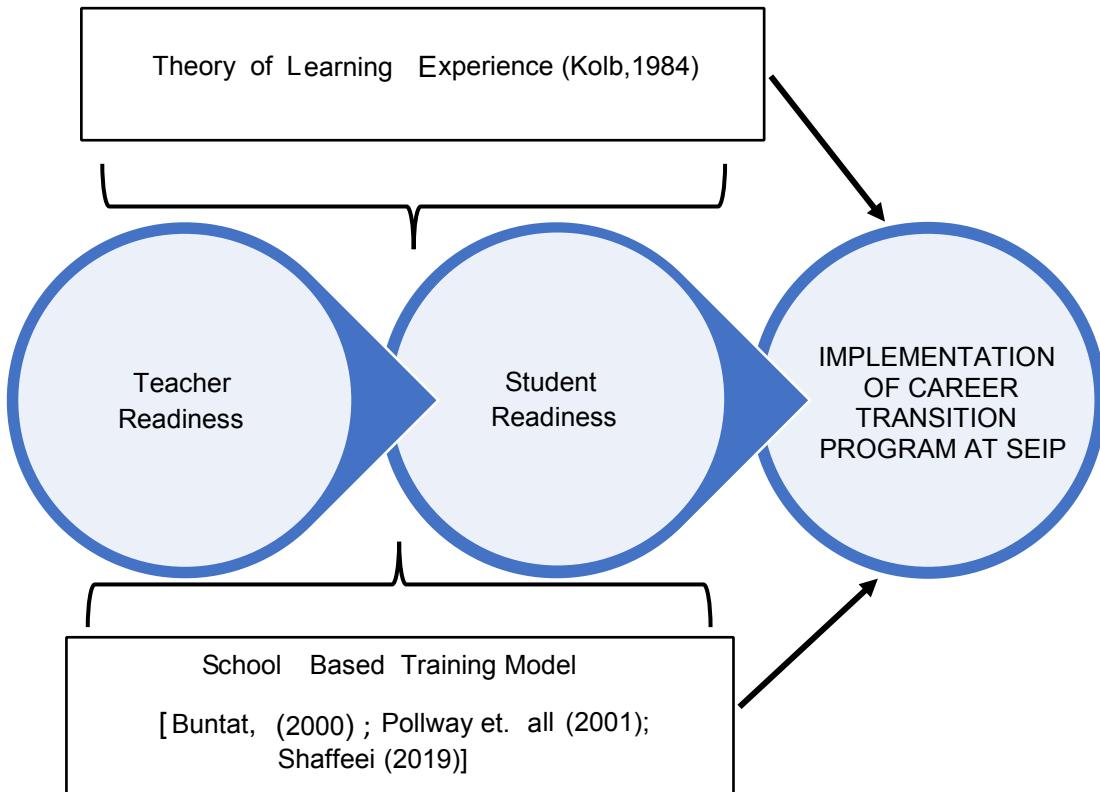


Figure 1 shows the variables in the implementation of the Career Transition Program toward Special Need Students in schools. The variables involved were teacher readiness and SNS readiness. The School-Based Training Model (Buntat, 2000; Polloway et al., 2001; Shaffeei, 2019) was used in this study. Meanwhile, Theory of Learning Experience (Kolb, 1984) was applied to review the implementation of the SNS Career Transition Program in schools.

School-based training was applied in schools to implement career transition programs for students with special needs. It also applied vocational skills training with collaborating from industry for career training. The program was supported by the Learning Experience Theory (Kolb, 1984) where students need to be given training and skills according to their abilities.

### 5. Research Methodology

The study was conducted through a quantitative method to identify teacher readiness and SNS readiness implemented in the transition program to the special needs student careers at SEIP. Konting, (2005) stated that quantitative are appropriate to get answers to any questions that students want to study. The research sample is intended to be survey studies conducted at the SEIP of a secondary school that implementing the Career Transition Program in the state of Selangor, Negeri Sembilan and Perak and involves 107 teachers in SEIP.

Purposive sampling method was implemented in this study. A questionnaire survey was given to 107 teachers who directly involved in the implementation of the Career Transition Program in the Special Education Integration Program (SEIP). Data analysis was done using SPSS software to answer the objectives of this study. A total of 88 students with special needs are also involved in the implementation of the Career Transition program according to their interests and abilities such as cooking, sewing, agriculture and others.

## 6. Findings

*Table 1: Item Comparison*

Section	Item	Mean average by section of the questionnaire
A	Preparation and training by teachers in the career transition program of students with special needs in schools	3.99
B	Readiness of students with special needs in career transition programs	3.88
C	Understanding of guidelines in the implementation of transition programs to the careers of students with special needs	3.79
D	Skills mastered by students with special needs after undergoing skills training in a career transition program	3.65
E	Skills mastered by students with special needs after undergoing skills training in a career transition program	3.46
	Average Min	3.75

(N=107)

### **Findings of Study 1: Preparation of special education teachers in implementing career transition programs in SEIP**

The findings of the study indicate that the need for the implementation of the Career Transition Program for the marketability of students with special needs in the Special Education Integration Program. This study obtained the factors of preparation and training by teachers in the career transition program of students with special needs in schools with the highest mean value of 3.99 involving 107 teachers and 88 students as the study samples in the states of Selangor, Negeri Sembilan and Perak.

### **Findings of study 2: Preparing students with special needs in implementing career transition programs in SEIP.**

This study involved 88 students learning at SEIP in Selangor, Negeri Sembilan and Perak. Students' readiness measured based on teachers' responses and 107 teachers involved as sample in this study. Teachers responded that students tend to involve in hands on activities such as cooking, sewing and agriculture.

This study obtained the readiness factor of students with Special Needs in the career transition program in the school has the second highest mean value of 3.88. These findings indicate that student readiness is important in the implementation of career transition.

## 7. Discussion

### **Discussion 1: The preparation of special education teachers in the implementation of the Career Transition Program at SEIP**

The findings show that teachers need to have knowledge and skills in implementing the Career Transition Program. According to Blackmon (2008) teachers need to provide Individual Education Plan (IEP) services based on their strengths, interests and goals after completing their schooling. Rahmada, et al. (2019), on the other hand, states that the level of teacher's skills needs to be improved in ensuring that students with special needs master the skills.

Teachers are able to train their SNS in preparation for the work environment (Worrell & Taber, 2009). Teachers also need to prepare SNS for job opportunities, curricular and suitability of activities in preparation for change, technological diversification and lifelong learning (Elleven et al. 2006). According to Ismail, (2018), the responsibility of a Special Education teacher is to provide as much knowledge and skills as possible to the SNS.

Indirectly, teachers should equip themselves with the knowledge, understanding and vocational skills to guide SNS in mastering the basic vocational skills and essential skills of the Malaysian Skills Certificate.

### **Discussion 2: Preparing students with special needs in implementing Career Transition Program at SEIP**

SNS should have the basics of 3 Skills (Reading, Writing and Counting) and Vocational Skills in preparing themselves for the Transition Skills Training and Career Program (Shaffeei, 2019). The findings show that SNS employability skills is low (Samian, Ali & Buntat, 2013). In addition, the employability skills acquired by SNS in vocational education do not necessarily meet the needs of their employers (Yusuf et. all, 2013). Therefore, SNS needs support in maintaining the skills acquired in schools in line with the demands of the job market. The study of Mohamed Nor, and Mohd Yasin, (2018) shows the level of SNS parents involvement is moderate and needs to be improved because their parents play the main role in helping and supporting SNS readiness for real career.

Generic skills need to be applied to SNS as it's important for them as a preparation to work (Nasri, et al., 2010). These skills should include self-management skills, personal or individual skills, basic information and computer technology skills as well as selected job scope skills. According to the study of Yusuf et al. (2013) stated that vocational education is one of the efforts to develop the SNS's ability to acquire skills that enable them to obtain employment. Vocational education in SNS Learning Disabilities helps to prepare them for the world of work after graduation (Shaffeei, 2019; M. Nasir, 2016; Mat Daros et al., 2012; Jones & Williams, 2011; Paul, 2011; Ofoegbu & Azarsma, 2010; Worrell & Taber, 2009; Mohd Isa, et al., 2009; Dupoux, 2008).

The readiness of Special Education Teachers in this Career Transition Program is essential to ensure that it works as required by MOE. Teachers needs to know and master all aspects of Special Needs Career Transition Program. Teachers also need to be proficient in such skills to facilitate teaching and learning sessions at SEIP. The element of Multitasking skills needs to be implemented by the teachers in their teaching and learning.

SNS also need to be prepared in the self-career aspect of the Career Transition Program such as basic self-management skills, social skills, communication skills, problem

solving skills and basic technology skills. The ability of SNS to master such skills can guarantee the success of the Career Transition Program.

## 8. Conclusion

The Career Transition Program is a platform for all SNS in preparing for the real workforce in all schools around the world. SNS need to be given the space and opportunity to contribute their energy and skills to their potential (MOE, 2016). It is important to help SNS get into the field of work that interests them and to show their full potential. The need for a well-organized of Career Transition Program helps schools, SNS, Parents and Communities in terms of implementation and future success implications.

## Acknowledgement

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# URBAN FARMING CIK TEBU MANIS: CHANGES IN BEHAVIOR AND INTERESTS OF STUDENTS WITH SPECIAL NEEDS (MBK)

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## ABSTRACT

The Best DuA Integration Special Education Program became first in the Hulu Selangor District to carry out the “Urban Farming” fertigation project which was carried out in early 2018 until now. Urban Farming Cik Tebu targets medium and low functional students in the teaching and learning process in schools. Therefore, this study was conducted to find out the extent to which the influence of specific vocational skills subjects and basic crop skills can build students' interest in the field of agriculture and in turn make the agricultural sector as a career opportunity. Preliminary observations found that students were not focused during the teacher's teaching process, were too active to be disciplined and unskilled in using their psychomotor skills. The study of the Urban Farming project, which was conducted over a period of 6 months, focused on the preparation work of the Urban Farming project by planting various types of vegetables such as solok chillies, rice chillies, large chillies, cabbage and bitter gourd in locations close to special education classes. The project requires only limited space and is equipped with a structured system. Pupils have the opportunity to learn about agriculture in interesting and fun methods. The results of the study found that all students involved showed positive changes in behavior and interest in agriculture. This project was found to be able to provide opportunities for students with medium and low functioning to form self -identity and independence and can even be applied in daily life with an interesting and fun atmosphere using the work procedure manual that has been provided.

**Keywords:** Urban Farming, low functioning, Special Education Integration Program, fertigation and behavior, psychomotor.

## 1. Introduction

The Ministry of Education Malaysia in 1986 issued the Philosophy of Special Education “Special Education in Malaysia is a continuous effort to create people who are skilled, oriented, capable, independent, capable and manage life and self-awareness as individuals and members of a balanced society and productive in line with the National Education Philosophy”.

Agricultural activities are one form of activities outside the classroom that can improve students' skills more effectively for the future. Modern agriculture is a more effective concept of agriculture with the needs of students with special needs. This program is an effort to involve low-functioning students with the concept of fertigation that can increase students' understanding as well as generate government policy to develop the concept of modern agriculture throughout society. It is hoped that through this program, will be able to increase the interest of students with special needs to a better level in the future.

Fertigation is a combination of two English words, fertilization and irrigation which is fertilization and irrigation. A method of cultivation in which the crop will be supplied with a solution of fertilizer and water through an irrigation system. Through this method it uses a piping system to channel water and fertilizer systematically, complete with water reservoirs and organic fertilizers before being automatically drained to the crop every three minutes, thus helping to produce fresher vegetables and free from chemical fertilizers that can be harmful to health. Through this method, the provision of complete nutrients required by the root zone can be controlled according to the needs of the plant based on the type and growth stage of a plant. Fertigation belongs to the hydroponic group which is the production of crops without using land. In general, all types of crops or vegetable crops can be grown using this method such as tomatoes, chillies, bitter gourd, cabbage and melons are encouraged.

The Chief Officer of the Rehabilitation and Treatment Service Center (CCSC) of the National Anti -Drug Agency (AADK) Alor Gajah Melaka, Noralizah Kasmin in 2017 stated that this Urban Farming concept garden can relax the mind and calm and can generate income as well as provide satisfaction to students and anyone who interested in agriculture.

## 2. Problem Statement

People with special needs are also like other human beings who do not only depend on their families and wait for kindness from others to meet the needs of their daily lives. This study was conducted to see to what extent the Basic Agriculture subjects found in the Life Skills component can change the behavior and interest of students of the Best DuA Special Education Integration Program (PPKI) in producing independent human beings.

Before this agricultural project was carried out in schools, students were not interested in following the teaching and learning process (pdp). Their focus on pdp was brief and often showed a protested character in the classroom and not doing the assigned assignments. Sometimes there are also students who sleep in the class. In terms of behavioral problems, students with special needs were found to be unfocused during the teacher's teaching process and too active. In addition, they like to move around in the classroom and often disturb other students during the teaching process. Therefore, this student will always be scolded by the teacher. In fact, his emotions will also be affected and it will not be fun to come to school.

As a result, the monthly attendance percentage declined because they always did not come to school. Based on the findings of the attendance data the month before the agricultural project was implemented, the attendance of students in each class was at an alarming level.

### 2.1 Research Objectives

This study was conducted to:

- i. Attract students to ensure student attendance to school.
- ii. Change negative student behaviors and form positive behaviors.

## 3. Literature Review

Urban Farming is an effort implemented to the pupils with needs and helped them getting better in daily life. It was fertigation methods that succeeded helping schools in tackling the school attendance problems. After introducing the UF to the special needs pupils, The number of students skipping decreased significantly. All the students involved are eager to come to school because they want to take care of their crops. The schedule for this gardening activity is allocated for two

times a day for each class, which is for one hour. Students will handle the crops in this garden. Therefore, on this initiative, I thought it would be practiced for PPKI Best DuA students who have various problems and difficulties to learn. Furthermore, they are not interested in learning in the classroom because they feel constrained. Therefore, it is hoped that these skills in agriculture will transform them to attend school every day cheerfully.

When the Faculty of Education, Department of Agricultural Science, Universiti Pendidikan Sultan Idris (UPSI), introduced vegetable cultivation using fertigation method through the Cucumber Planting Pilot Project at Sekolah Kebangsaan (SK) Bandar behrang 2020. The opportunity provided by UPSI was worthwhile, more- more and more students are getting excited to come to school to ensure the success of the project.

The school took this initiative as an effort to address the problem of absenteeism of special education students by creating planting skills in schools using fertigation systems. Apparently this effort can solve the problem of students who often do not attend school. This effort has an effective impact on special education students to implement fertigation projects in schools, especially for students with learning difficulties. They are exposed in every planting process starting from sowing, planting and caring for the seedlings until they produce results. More interestingly, they were also given exposure on dealing and recording crop yields.

#### **4. Research Methodology**

According to Chua Yan Piaw (2006), study design is a planning that allows teachers to conduct research. teachers to record what is observed systematically and systematically. The research method used was a qualitative method, as I used observations on student behavior and a set of checklists to conduct this study. The teacher's observation method is through a table and a checklist which consists of two parts, namely to study the interests and changes and behaviors of students. A checklist is an observation form or a document used the data collection period is for 6 months starting from January to June. A total of 10 students were involved, were observed in the teaching and learning process in the garden. These are students who always do not come to school and are not interested in following the teaching and learning in school which results in a high percentage of skipping every month.

By 2020 the country was hit by the Covid 19 pandemic, many problems we have experienced. Among them is the destruction of many crops due to the long closure of schools. But we bounced back when the school reopened around early September 2020 and started planning to build a gazebo and a kelulut honey project. The bittersweet memories changed my mind a lot to make Urban Farming better and more systematic as a lesson from the effects of Covid 19. The school plans to increase the number of vegetable trees in the next project and honey farming project will also be carried out as well.

## 5. Findings

This study was conducted to: Attract students to ensure student attendance to school. Change negative student behaviors and form positive behaviors.

*Table 1: Findings of students having fun with the project Urban Farming Cik Tebu Manis.*

Student	Student attendance of KVS &KAV during UF classes	Summary
Student A	Yes	Interested
Student B	Yes	Interested
Student C	Yes	Interested
Student D	Yes	Interested
Student E	Yes	Not Interested
Student F	Yes	Interested
Student G	Yes	Interested
Student H	Yes	Interested
Student I	Yes	Interested
Student J	Yes	Interested

*Figure 1: Changes in pupils interests*

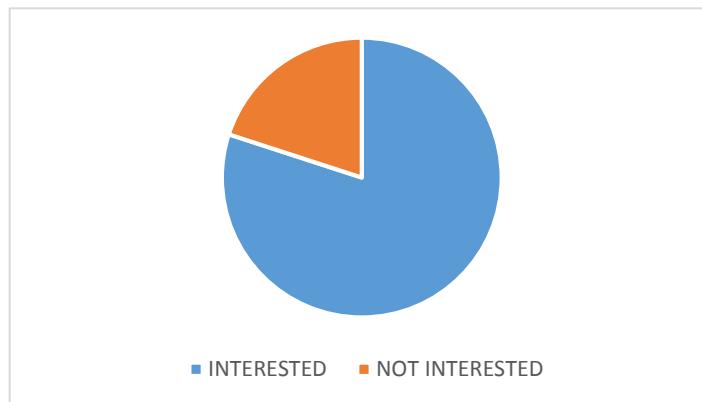
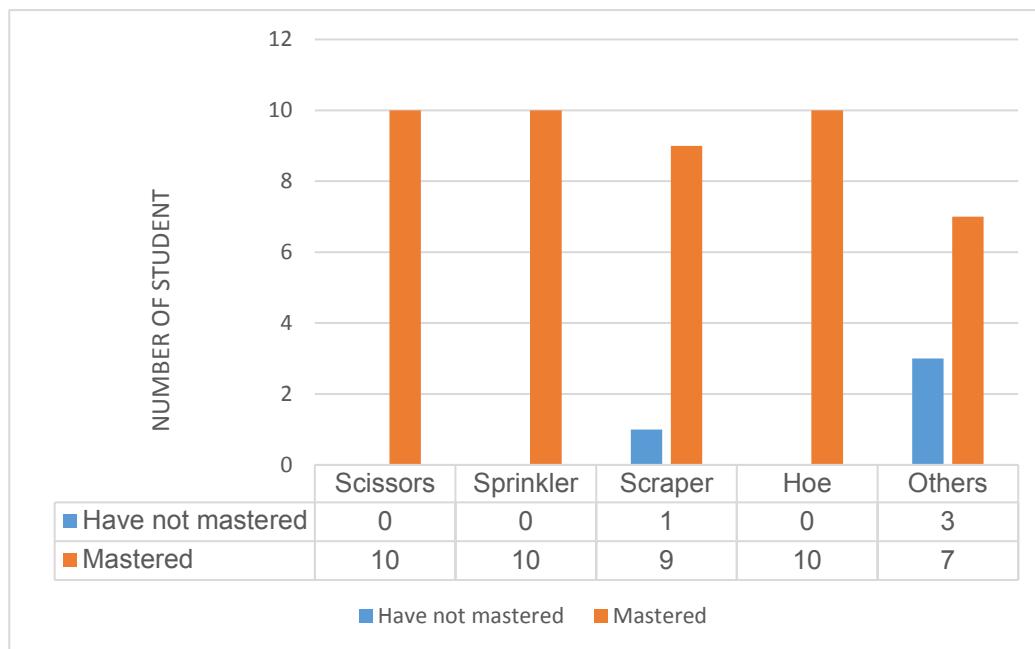


Table 2 below shows the observation form entries through the checklist. The notes show that students are beginning to be interested in learning about the teaching and facilitation process (PdPc) of Agriculture. Teachers have used this checklist to record the aspects that want to be observed throughout the teaching and learning is carried out.

*Table 2. Behavioral checklist of students with skills during the Urban Farming project.*

SKILL OBJECTIVES	ACTIVITY	HAVE NOT MASTERED	MASTER
Get to know the tools used	1. Naming equipment a. Scissors b. Sprinkler c. Scraper d. Hoe e. And others	0/10 students 0/10 students 1/10 students 0/10 students 3/10 students	10/10 students 10/10 students 9/10 students 10/10 students 7/10 students
Manage and use equipment properly	1. Operate equipment in a proper manner	3/10 students	7/10 students
	2. Clean the equipment	3/10 students	7/10 students
	3. Store equipment in the right place	1/10 students	9/10 students
	4. Manage equipment properly	3/10 students	7/10 students
Sowing seeds	1. Know the medium (ready mixed soil) of the nursery	4/10 students	6/10 students
	2. Fill the medium in the nursery container	2/10 students	8/10 students
	3. Prepare the seeds	2/10 students	8/10 students
	4. Insert and water the seeds into the tray	2/10 students	8/10 students
Care of seedlings	1. Arrange the seedlings in a tray	0/10 students	10/10 students
	2. Enter the nursery	0/10 students	10/10 students
	3. Water the nursery daily	2/10 students	10/10 students
	4. Transfer the rooted seedlings into a polybag after 3 weeks	3/10 students	7/10 students
Crop management	1. Transfer the tree to the garden site	3/10 students	10/10 students
	2. Installation of drip to the crop	3/10 students	3/10 students
	3. Put water and fertilizer into the barrel that has been scheduled for 8 times entry per day	5/10 students	6/10 students
	4. Final work and inspect the crop.	3/10 students	7/10 students

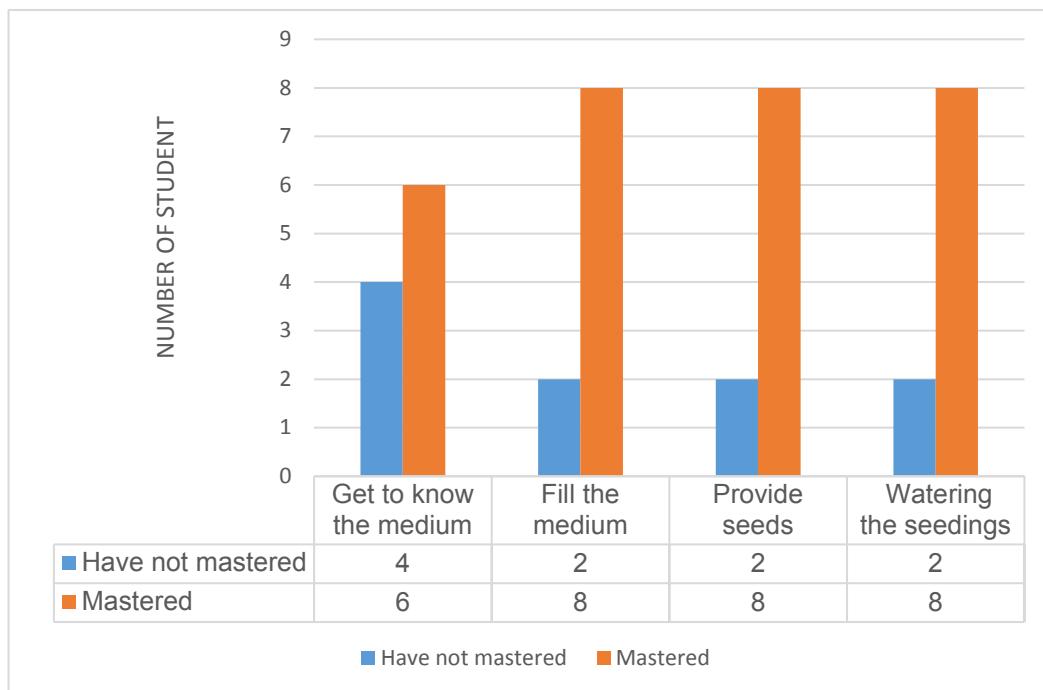
*Figure 2 : Get to know the tools*



*Figure 3 : Manage and use tools*



*Figure 4 : Sow the seeds*



*Figure 5 : Crop management*

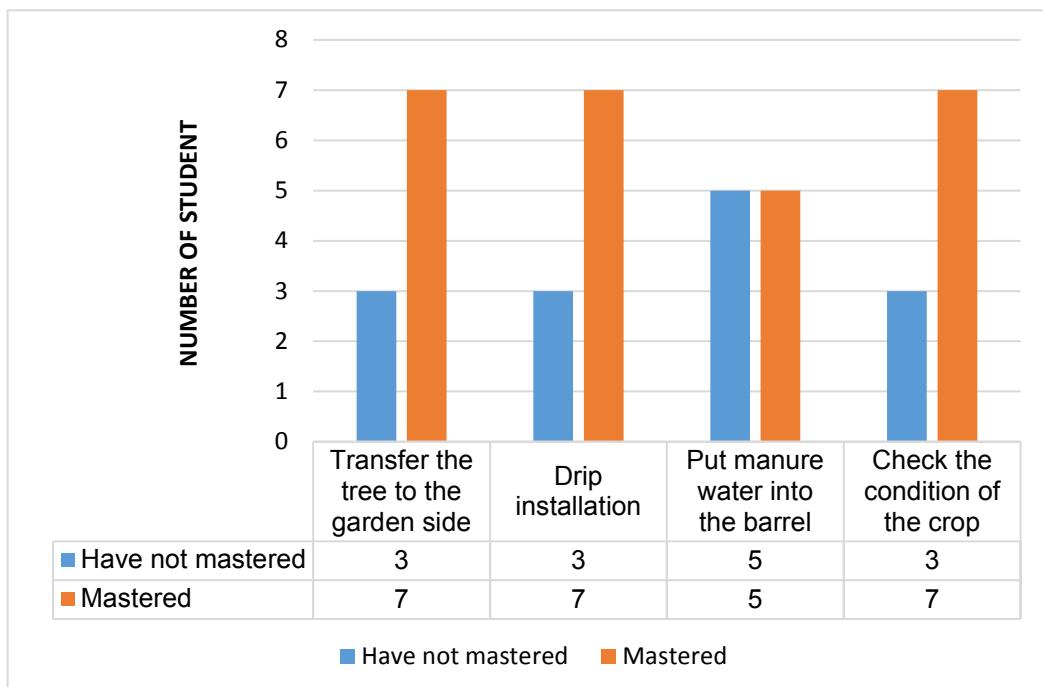
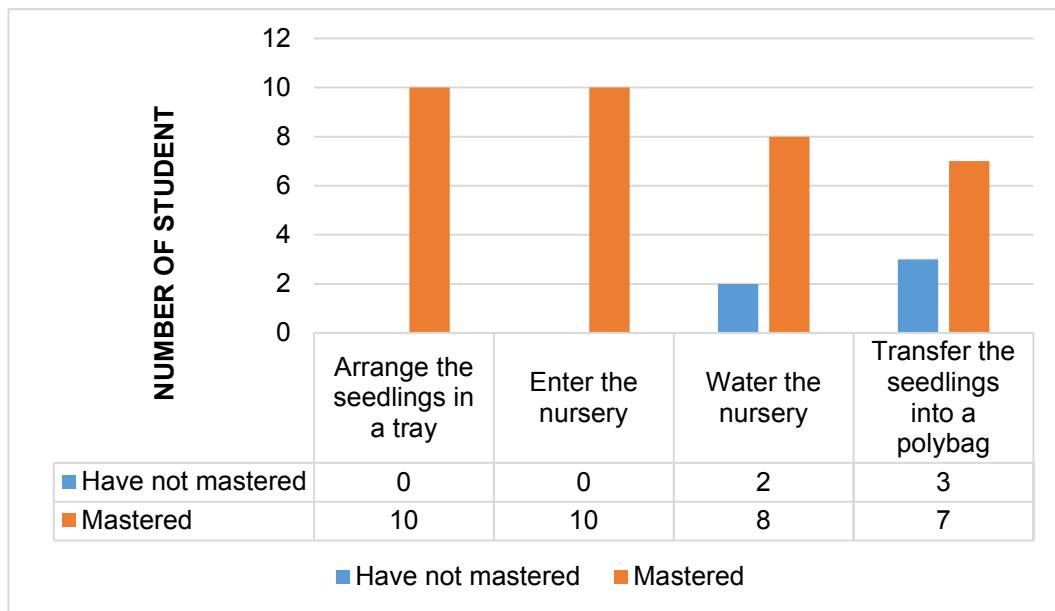


Figure 6 : Plant care



Figures 2 to 6 show observation form entries through a checklist. The notes show that students are beginning interested in learning about agricultural in PdPc. Teachers have used this checklist to record the aspects they want to observe during this pdp.

Since Urban Farming was conducted, they are eager to attend school because they want to take care of the crops and vegetables that are cultivated together with their respective classes. The determination of these students to go to school because there are various types of crops that are produced thrive and bear fruit in abundance. This step has a good effect when the attendance of students to school increases because each of them shows interest and changes in behavior while gardening. The crop takes between 40 to 90 days before it can be harvested and on the day of harvest, each student looks happy because each of them looks very satisfied to watch the vegetables they planted bear fruit. Similarly, during the sale of products,, they were very happy and excited while receiving orders and selling to teachers at the school.

## 5. Discussion

Based on the findings, courses or programs that involve knowledge and skills should be implemented more frequently to teachers who are new or who are teaching students learning problems in the subject of Agriculture at PPKI. This program should also focus more on the modules that have been issued by the Ministry of Education in order to strengthen the readiness of teachers as teaching crops according to the Secondary School Standard Curriculum is still new.

Although the subject of crops based on KSSM is still new among special education teachers, but they must find solutions in equipping themselves with knowledge and high skills to create a meaningful teaching environment as has been done that is fertigation method for students with learning difficulties. In addition, teachers should also attract students to always be enthusiastic in learning and be able to implement teaching without any problems and at the same time giving them positive effect in order to produce students who master the skills in crops.

This initiative not only benefits the school but the main one is the students themselves because academically, they may drop out, but through this effort they acquire agricultural

knowledge and it is not impossible that some of them will be able to become successful farmers one day. Recognizing the real needs of these special students, PPKI Best DuA has taken steps to introduce a mini project of vegetable cultivation using fertigation methods starting in 2017. In the early stages, this project guided by myself was implemented on an agricultural site adjacent to the Special Education class. Until now, this project is still being pursued by using the services of 2 teachers.

The full attendance of students can be observed when on Mondays, Wednesdays and Fridays are the gardening day schedule. During gardening activities, these students seem happier because they can play with friends during pdp conducted as well as reduce student stress in class and by gardening also as therapy to students and stimulate all their senses. q8,q9qm.,.nStated through writing an article by Edi Junaedi, S .Ag .. Itqan Learning and Consulting Center (ILCC) in 2015.

## 6. Conclusion

The implementation of Urban Farming in schools can help build students' interest in addressing the problem of student absenteeism and assess the extent of success of the implementation of agricultural subjects. This mini tree planting project using fertigation method is the first project carried out at PPKI Best DuA Hulu Selangor and it is felt to be able to give a significant impact in discussing the direction of PPKI itself. Through the collection of teacher experience at PPKI Best DuA, this project is expected to help students after school and provide a clear definition not only to the students and parents involved but also to the community as a whole. Support from various parties is very important in ensuring the success of this effort.

The readiness of teachers in terms of knowledge and skills is very important to ensure that the objectives of teaching agricultural subjects are successful and achieve the real goals outlined by the Ministry to provide equal employment opportunities to students with learning disabilities and mainstream students. This is evidenced based on findings from previous studies by Norshidah Mohd Salleh, Aliza Alias & Zalizan Mohd Jelas (2016), who stated that teachers need to have high skills and knowledge in helping the teaching and learning of students with special needs more effectively.

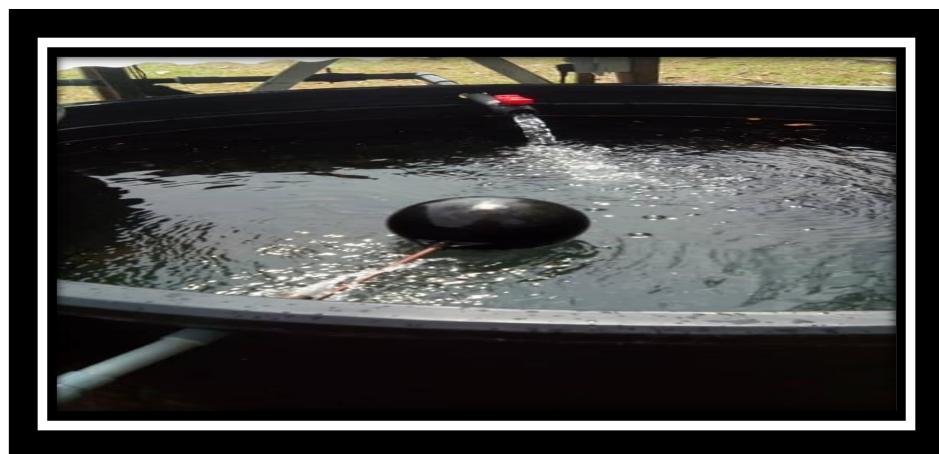
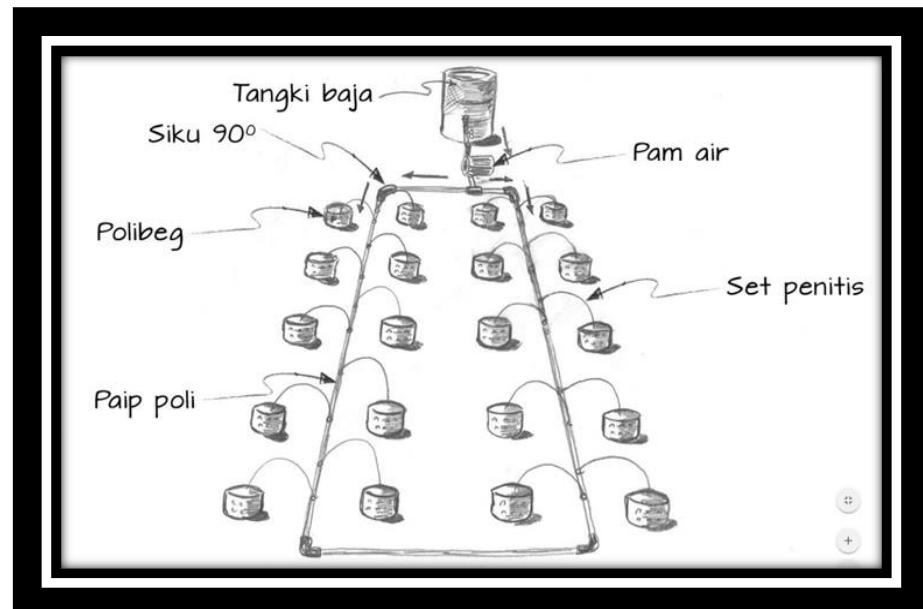
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## Attachment



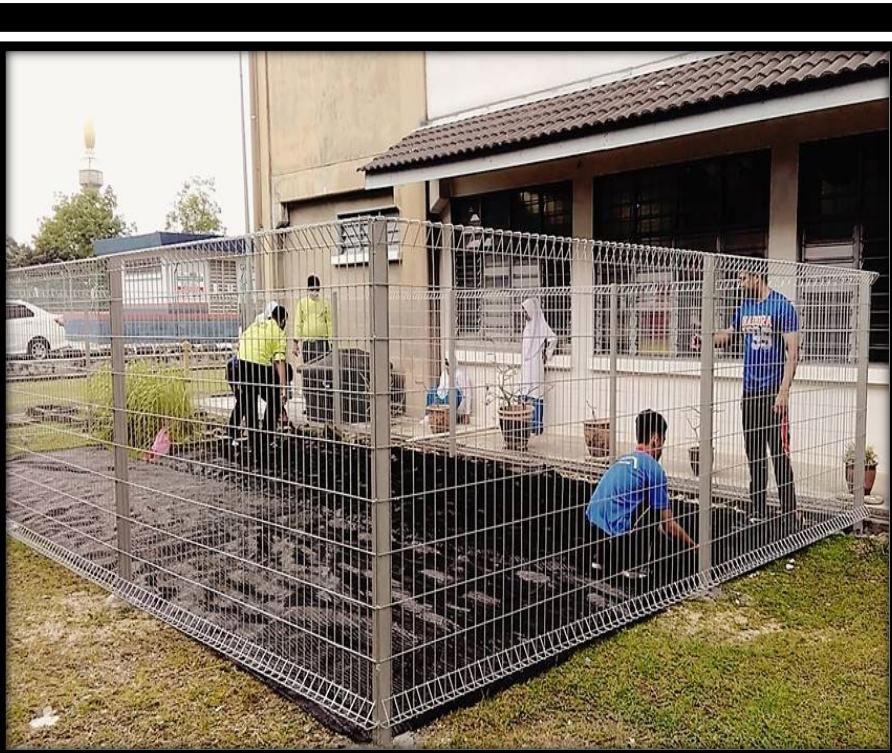
TRADITIONAL CROPS 2016-2018



FERTIGATION SYSTEM STARTED 2018 UNTIL NOW



PUPILS LEARNT THE SOWING PROCESS AND THE FERTIGATION SYSTEM



PUPILS INTERESTED IN HANDLING THEIR CROPS



LADA SOLOK  
PUPIL REAPS THE CROPS



ORGANIC CABBAGE

# THE EFFECTIVENESS OF I-FLASH CARD IMPROVING THE MEMORY OF COMMON SURAHS OF FORM 2 SPECIAL NEEDS STUDENTS IN SMK KALUMPANG

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## ABSTRACT

The aim of this study was to see how successful the use I-Flash Card in helping students in the Special Education Program in the Islamic Education subject in memories and recital the verses memorized from the Al-Quran in common surahs. This research included a total of 2 students in special need as participants. The first step in action planning was to recognize students who struggle in memorizing and reciting memorized common surahs with minimal errors in pronunciation. This research also aims to ensure that students are not bored during the learning process and to encourage students to memorize the Quran's surah. This research was carried out using diverse teaching methods and resources by using Interactive Flash Card, a digital process that replaces the previous handmade cards (traditionally). Sentences are typed on a computer with using MS Word and the card's background are made colourful. Each card includes sentences that have been cut short based on the student's skill. The respondents were given a pre-test and post-test. The result of the study (post test) showed that 2 students were able to memorize the traditional surahs more effectively after the intervention. As a result using I-Flash Card in the classroom is successful in enhancing students' memorizing and reciting with minimal errors in pronunciation once it is introduced.

**Keywords:** Memorize, pique interest, digital process, slow learner

## 1. Introduction

The Qur'an which was sent to the Prophet Muhammad s.a.w. is the last book revealed by Allah s.w.t. the Qur'an was revealed as a guide and reference for Muslims worldwide. Although Muslims come from various races and backgrounds, they are able to read and understand the Qur'an written in Arabic. However, for the disabled, the approach to reading or memorizing requires help for this group to more easily understand the contents of the Qur'an. The rapid advancement of technology has now greatly helped these disabled people in their daily lives. The use of technology in Education helps teachers a lot to educate students with special needs in school. Teachers use technology as a facilitator to build teaching aids that are more efficient and appropriate to students' problems.

Through studies involving students with special needs with learning difficulties. Pupils in this category need methods that are appropriate to their learning, especially in memorizing and remembering lessons. A learning disability is a neurological disorder. In simple terms, a learning disability results from a difference in the way a person's brain is "wired." Children with learning disabilities are as smart or smarter than their peers. But they may have difficulty reading, writing, spelling, reasoning, recalling and organizing information if left to figure things out by themselves or if taught in conventional ways.

Memorizing the Al-Quran is a need for all Muslims and should be passed down to all Muslim students, especially for students with special needs. However, special need takes so long time to memorize a surah in the Quran due their conditions. Children with special needs are often referred as "intellectually disabled" due to significant limitations both in intellectual functioning and adaptive behavior. Hence, children with intellectual disabilities have much more difficulty learning new things, understanding concepts, solving problem, concentrating and remembering than their peers (Harris, 2015).

## **2. Problem Statement**

One of the weaknesses found is special need with learning disability are quite weak in memorizing the Al-Quran and this makes them to be easily bored and less interested in the Al-Quran. In addition, the other weakness of special need students is unclear pronunciation of certain verses in Surah Al-Asr and this makes them to feel ashamed and inferior. Long sentences made difficult for special need students to memorize some common surahs. In addition to learning problems, slow learning children also face behavioral problems. Problems slow learner child's behavior caused by the limitations of psychological skills, including a) a limited mechanical skills; b) low self-concept; c) an immature interpersonal relationships; d) communication problems; and e) an understanding of the social role that is not appropriate (Malik, Rehman and Hanif, 2012: 136).

Therefore, various ways and methods used to help the special need in solving such problem Due to this weakness the teachers as a facilitator decided to assist special need student in solving the problem. Through this approach, teachers and also special needs students are able to overcome the problem. This teaching and learning of teachers in the classroom was designed to be creative and innovative to attract the interest of special need students and make them love the Quran. Generally, this study is to see the effectiveness of I-flash card common surah to students with special needs with learning difficulties. The first objective was to identify the level of effectiveness of the I-Flash surah Al-Asr card for students to memorize and remember common surahs. The second objective is to see the effectiveness of students reciting verses in Surah Al-Asr with minimal errors while memorizing.

Therefore, the idea to help special need students in memorizing and reciting the memorised verses of common surahs with the minimal errors in pronunciation brought forth to the introduction of I-Flash Card. These cards aim to aid teachers and special need students to overcome their challenges.

### **3. Literature Review**

Researchers will briefly discuss the findings relevant to the topic in order to support this study. In addition, this section will discuss opinions that emphasize the use of I-Flash card is appropriate in helping students with special needs with learning difficulties in memorizing surah Al-Asr. A study was conducted on the frequency of reading the Qur'an among the visually impaired. The findings of the study found that the frequency of reading the Qur'an brings significant results in determining the level of mastery of the visually impaired. In addition, in the same study, the emphasis on the use of teaching aids (BBM) greatly influenced the achievement of mastery of the Qur'an by OKUMP students. This provides space and opportunity for OKUMP students to play an active role in their learning as they can repeat the learning until they understand it (Ab. Halim Tamuri, 2010; Fatimah, 2013; A. Rahman et. Al. 2010). Indeed, the use of teaching aids for students with special needs will give a good impact to this group, including students with special needs with learning difficulties. There are several learning theories that help strengthen the argument that the use of scan cards can help in teaching and learning sessions.

#### **3.1. Cognitive Learning Theory**

According to this theory, Snowman and Biehler (2006) explain that adaptation is the process of creating a “good fit” between the students’ conception of reality and the new experience the students encounter in a classroom. The teacher plays a major role in this adaptation, when they introduce a new experience to the special need students as the teacher can facilitate the assimilation of this new experience so that it fits into the special needs students existing scheme or the teacher may have to change the cognitive thinking of the special need students by changing an existing scheme to incorporate the new experience. This process is referred to as accommodation (Pressley & McCormack, 2007). The tendencies of organisation and adaptation are progressed through the special need students’ interaction with their environment and Piaget believed that people have a desire to organize their schemes to achieve the best possible adaptation to their environment this process is referred to as equilibrium. During a person’s search to achieve equilibrium they must find themselves in a state of disequilibrium, a perceived discrepancy between a person’s existing scheme and a new experience (Snowman & Biehler, 2006). This concept outlines the need for the teacher to create cognitive conflict with the special need students through education in the pursuit towards equilibrium. Pressley and McCormack (2007) outline the process for the teacher to provide educational support in overcoming special need students’ misconceptions.

#### **3.2. Multiple Intelligences Development**

According to Howard Gardner, intelligence is a combination of psychologist and biological characteristic that enables individual to solve problem or create product that are valued in one or more cultures. Rubado (2002) worked with a group of 17 middle school students who were having difficulty learning the general education curriculum and were at risk of failing, but were not being served by the traditional special education program. To meet their needs, she began integrating MI into her instructional practices and found that students naturally began to identify their intelligences. It was found that students, through the process of self-reflection, began to identify their areas of strength in the context of MI and were able to identify which intelligences would enhance their performance. Through the use of a self - evaluation rubric, the students, many of them with special needs, discovered that they were using all the intelligences effectively, depending on the situation and realized that they were better-rounded than they had initially believed.

### **3.3. Learning Through Behaviour**

According to Thorndike (1949), teachers need to constantly assess students 'readiness' (psychomotor, cognitive and affective readiness). Teachers can use colourful stimuli to engage students. In addition, teachers can provide positive rewards or reinforcement as well as provide a conducive and ready learning environment for students to learn.

### **3.4. Media Learning (Flash Card)**

The use of Flash cards in the teaching and learning of students with special needs is good and will make it easier for students to understand the lessons given by the teacher. History of flash card goes back to 1834. Favell Lee Bevan wrote a book called *Reading Disentangled*, which included illustrated cards that some credit as the first modern flashcards. The cards were used for reading instruction, primarily to teach children phonics. The cards had illustrations of words and the first letter of each word.

According to Arsyad (2011) a flashcard is a small card that contains a picture, text, or symbol that can remind or guide to something related to the picture. This media has attractive colours that can be made as a game so as to attract the interest of children to better understand the material presented. Pictures on flash cards are collected, among others, a series of animals, fruits, clothes, colours, shapes of figures and so on according to the level of development to be achieved. Flashcard media has a positive effect on recognition, the implementation process of understanding the concept of numbers will make it easier for children to understand it more quickly through flashcard learning. This is supported by Ratnawati in Susanto (2011), stating that flashcard media can stimulate children to recognize numbers more quickly, making children's interest stronger in mastering number concepts and stimulating children's intelligence and memory. The use of flashcard media in addition to introducing numbers more quickly, children can also explore using these cards so as to stimulate various aspects that exist in children.

### **3.5. Slow Learner**

Slow learners are a group of learning disabilities (LD) children who are being unable to learn which consists of mild cognitive disabilities, incapable to learn something in the amount of time assigned for the actual learning. Slow learners are having limited cognitive capacity or low in intelligent quotient (IQ), information processing weakness, poor in memory or short-term memory ability, lack of concentration with short attention span, having difficulty in abstract thinking which leads to inability to express ideas and deprived of attention abilities. Slow learners is a term that is sometimes used for low ability students, with IQ between 70 and 85. These individuals make up approximately 14.1% of the population, larger than the group of children with learning disabilities, intellectual disabilities and autism combined.

According to Chauhan (2011), Malik (2009), and Shaw (2010), a slow learner child having an IQ in between 76 and 89 with slightly differ from the normal children and limited ability in solving problem. They grasp the skills and concept even slower than is expected for children in general. The slow learner are mostly identified as low ability in reasoning on particular situation as well as to deal with abstract and symbols, such as in languages, numbers and concepts (Chauhan, 2011). Their limitation has also giving a great impact in dealing with complex problems and learning. This has leads slow learners to the situation of 'backward' performance in school who have very limited cognitive ability (Reddy, Ramar, & Kusuma, 1997).

## 4. Methodology

This study is a study on the effectiveness of the use of I-Flash Card in common chapters for Islamic Education subjects. This study emphasizes on the pronunciation and memorization of students with special needs. This study was conducted qualitatively in the form of observations and checklists. Abdul Sukor Shaari et al (2011) in his study described that the use of case study design using qualitative data is suitable for use when a study involving the observation of an individual or unit and a group of people. The target of this study is to consist of form two Muslim students with learning difficulties at SMK Kalumpang. Hafazan is one of the parts contained in the field of Al-Quran. This field of Al-Quran has three parts that require students to master those parts. In addition to memorizing, students also need to read the Al-Quran correctly and understand the verses in selected surahs of the Al-Quran. Thus, through this approach, researchers take incentives to help students with special needs with learning difficulties to read, memorize and understand sentences read with the help of i-Flash cards.

This study uses a structured observation method in which the researcher will observe, listen, and record information based on the test to be performed. In this case the researcher will make observations of the student's behavior whether focused or not while the teacher conducts the test to be conducted. Accordingly structured observations were performed along with a brief checklist. This study involved only two students with special needs with learning difficulties. At the beginning of the study students will pre-test by reading the usual surah (Al-Asr) without using a scan card for a week. During the first week of the study the students will be interviewed by the teacher to see the level of knowledge of the students. During the week students will be called for 3 times for a session to read surah Al-Asr. As students read the surah a checklist will be made to see the level of students remembering the surah. The method used by the teacher during the pre -test is traditional by simply asking students to memorize the entire surah each time they are called to read the surah. In the second week of the study, teachers began to make interventions using the scan card method for surah Al-Asr. At the beginning the teacher uses the card as a teaching aid while in class for the subject of Education. The teacher will read and recite the scan card of surah Al-Asr using the card and followed by the student. Pupils will also be called 3 times to read the surah scan card in front of the teacher. The teacher's target in the second week of the study was to help students pronounce with minimal errors. The teacher will focus the student to pronounce the sentence correctly before remembering it. In the last week of the study, students will be called by the teacher with the scan card to remember the surah Al-Asr as a whole.

Case studies used in this study to help researchers on identifying the effectiveness of the use of flash cards in helping students with special needs to memorize and pronounce the memorized surahs with minimal errors. To obtain complete data as well, researchers collected data from various sources such as interviews and observations during the teaching and learning process took place to get a complete picture and gain a deeper understanding of a research. The population selected for the study was students with special needs who study in one of the schools in the district of Hulu Selangor. The special needs students are fourteen years old and once had the knowledge of recognizing the letters in the Al-Quran.

Data were obtained through observations and checklists between the researchers and the respondents involved. A total of two fourteen -year -old special needs students were involved in this study. The sample selection technique were done at simple random while the schools are selected based on logistical factors. In order to obtain data, continuous observations were conducted throughout the specified period. Observations were conducted as the face -to -face school session begins. Pre-tests were done to see the students' mastery of common surahs and recognize the letters of the Quran. The research process

took three weeks in teaching and learning sessions in the classroom. During the observation process, the researcher also looked at the character of students with special needs as a whole.

The use of diagnostic tests was to measure the level of mastery of students during the pre -test as well as after the intervention was performed. The question paper contains filling in the blanks by writing the answers based on the sentence order from the selected surah. Pupils were given answers randomly and in sentence order. Each blank space provided by students were given two marks. Question papers were administrated after the intervention and each student's mistakes were assessed and recorded.

The surah scan card design is a scan card that has been innovated by researchers using MS word to build the scan card. The scan card used in this study involved surah Al-Asr. This surah has 3 verses that are quite long and it is difficult for students with special needs to memorize and recite. Therefore, the surah will be divided into twelve verse cutout cards. Each verse in surah Al-Asr will be cut or divided to make it easier for students to memorize and recite in minimal mistakes. The scan card will represent a single sentence that will make it easier for students to read and memorize. In addition, this scan card is mobile and easy for students to read and memorize the scan card. This scan card is half the size of an A4. This scan card usage manual, the teacher can show the scan card one by one to the students. Teachers need to make sure students to correctly pronounce each scan card of the surah. The teacher can also show the next card when the teacher is satisfied with the student's pronunciation. The teacher can use this during the session to correct the student's pronunciation in the reading of the surah. To attract the interest of students, the use of color in distinguishing each sentence is very helpful for students with special needs with learning difficulties. Flashcards system would be an excellent example for repetitive instruction as flashcards have been suggested as an easy way to teach students discrete skills (Cravalho et al., 2014).

## 5. Finding and Discussion

The results of a study for three weeks to see the effectiveness of the use of i-flash card surah Al-Asr has shown good results. Information before the study made by the teacher has identified the level of knowledge of students about the recitation of the Qur'an. Through the interview, the teacher found that these two students had the experience of hearing and reading the surah. However, the teacher found that there were many errors in pronunciation and sentence order that did not follow the sequence in the reading. In the first week of the study, the teacher asked the students to recite surah Al-Asr in the form of a long verse. The first time pupil K could not read the surah compared to pupil D. Pupil K was a bit confused with the letters in the surah. Pupil D can read well in the first sentence and is limited in the next sentence. The following is a table of the results of the checklist of student K and Student D during the study.

The table below shows the pre-test data that have been conducted without involving the use of I-Flash Card.

Table 1: Pre test result without I-Flash Card

Memorize	Student D	Student K
Sentence 1	1	1
Sentence 2	0	0
Sentence 3	0	0

*Table 2: Pre test result without I-Flash Card*

Pronouciation	Student D	Student K
Sentence 1	1	1
Sentence 2	1	0
Sentence 3	0	0

Based on the observation, Pupil K initially showed high confidence when asked to read the surah. However, when entering the second and subsequent sentences, the students' confidence began to fade and the students began to be confused with the letters and order of the verse. For pupil D the behavior is more careful in reading the surah and takes quite a long time to read the next verse. The careful attitude of pupil D was able to read up to the second sentence only and began to get confused for the next sentence. Based on observations regarding the behavior of students when they want to read a surah when called by the teacher. They often avoid reading first. Their efforts to give their best in reading the surah should be commended as they are diligent in reading it well.

Looking at the second week of the study, the teacher had used the surah scan card and the teacher's target at this point was to correct pronunciation errors with minimal errors. It turns out that through the intervention performed by the teacher, the results of the student study have shown a good improvement.

*Table 3: Pronouciation result with I-Flash Card*

Pronouciation	Student D	Student K
Card 1	1	1
Card 2	1	0
Card 3	0	0
Card 4	1	1
Card 5	1	0
Card 6	0	0
Card 7	0	0
Card 8	0	0
Card 9	0	0
Card 10	0	1
Card 11	1	0
Card 12	0	0

Based on the observation of students' behavior when the teacher gave the intervention by showing the scan card, students were seen to show interest in reading the surah. Pupils can easily make the most of the use of the scan card. In the second week, the teacher gives the students the opportunity to take home the scan card to practice memorization. Based on the observations conducted in the second week of the study the students were very interested in the design of the scan card. The clear writing and use of color on each of the scan cards attracted students to read. The shortened sentence division factor also helps students in reading with minimal errors.

In the final week of the study the teachers used scan cards to help the students to remember and pronounce with minimal errors better. Teachers have planned workstation themed lessons during the teaching sessions in the classroom. Students will be asked to move to each of the sentence cards and ask to say it with minimal mistakes. This activity was one of the methods used by the teachers during the last week's study. The results of the study showed that students got good scores for both parts.

*Table 4 : Pre test result with I-Flash Card*

Memorize	Student D	Student K
Card 1	1	1
Card 2	1	1
Card 3	1	1
Card 4	1	1
Card 5	0	1
Card 6	0	1
Card 7	1	0
Card 8	1	0
Card 9	1	0
Card 10	1	0
Card 11	0	0
Card 12	0	0

*Table 5 : Pre test result with I-Flash Card*

Pronunciation	Student D	Student K
Card 1	1	1
Card 2	1	1
Card 3	1	1
Card 4	1	1
Card 5	0	1
Card 6	0	0
Card 7	0	0
Card 8	1	0
Card 9	1	1
Card 10	1	1
Card 11	1	1
Card 12	1	1

Significant results can be seen to students after the use of scan cards that teachers use to students during teaching classes. Pupil D can almost memorize surah Al-Asr so well than before. While for student K also showed a good improvement from the next. Through the observations made in the last week, the students became confident in reciting and memorizing Surah Al-Asr well. These scan cards give good help to them in learning activities. While the teacher used this scan card, students K and D showed good interest and competition in pronouncing and memorizing better than their other peers. Thus, the use of this scan card helps students with special needs with learning difficulties to learn and thus provide added value to their self-confidence.

Through the findings of this study, it can be concluded that the effectiveness of the use of i-flash common surah cards helps to improve students' skills in remembering and pronouncing minimal mistakes. There are several factors that drive the success of students in mastering these skills. Among the main factors is the role of teachers in planning good teaching and learning and appropriate to the needs of students. Planning in teaching and learning during the class contributes to the ability of students to learn. This argument can be further strengthened by Snowman and Biehler (2006) The teacher plays a major role in this adaptation, when they introduce a new experience to the special need students as the teacher can facilitate the assimilation of this new experience so that it fits into the special needs students existing scheme or the teacher may have to change the cognitive thinking of the special need students by changing an existing scheme to incorporate the new experience.

The second factor on the effectiveness of the use of this i-flash card is the nature of the scan card is designed according to the needs of students with special needs. The scan card design is easy to carry anywhere and can be used as material for flexible learning activities. In addition the cost to build this scan card is cheap and can be adjusted according to the level of the student. The division of sentences in each piece helps students to easily remember and pronounce. Problems slow learner child's behavior caused by the limitations of psychological skills, including a) a limited mechanical skills; b) low self-concept; c) an immature interpersonal relationships; d) communication problems; and e) an understanding of the social role that is not appropriate (Malik, Rehman and Hanif, 2012: 136).

## 6. Conclusion

Overall, the use of I-Flash card can improve the mastery of students with special needs in memorizing and pronouncing in minimal errors well. This research highlights several values that can be applied. The first is communication whereby students will be more daring to interact in memorizing the surah Al-Asr chosen by the teacher. In addition, the value of cooperation and mutual help between teachers and students or students with students. The next value is the students' self -confidence in memorizing and pronouncing with minimal mistakes increases.

The strength of the use of I-flash cards are teachers can use them as teaching aids during teaching sessions. Teachers can create activities in groups or in pairs as an innovation in the teaching of teachers, especially in Islamic Education subjects with children who have learning difficulties. Hopefully this method will be able to be applied to all schools that caters for Special Education Integration Programs in the subject of Islamic Education. Further research can be conducted to see the effectiveness of students with special needs in other common chapters.

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# A SYSTEMATIC REVIEW OF THE INFLUENCE OF TEACHERS' KNOWLEDGE ON THE USE OF ASSISTIVE TECHNOLOGY

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## ABSTRACT

Assistive technology is an essential tool that supports students in their learning participation and provide opportunities for their education, social interactions and social relationship. Teachers' knowledge in assistive technology has consistently shown to be required for them to come out with proper modification and differentiation using assistive technology for students with special educational needs in inclusive education. There are numerous studies aimed at reviewing the impact of teachers' knowledge on the use of assistive technologies among elementary and secondary school teachers. This review intended to summarise the context of teachers' knowledge in the domain of general inclusive education and explore the instrument used, sample selection, validity and reliability as reported in the related studies. Electronic database includes Education Source, ERIC (Educational Resource Index and Abstracts), EBSCOhost by Elton B. Stephens Company and Scopus were systematically searched, reviewing published studies from January 2011 to January 2021 with the inclusion criteria selecting any study which focused on teachers' knowledge and their use of assistive technology with special educational need students in inclusive education. Of the 6 reviewed published studies, teachers' knowledge reported to have a positive impact on their use of assistive technology and have an influence on their level of confidence in integrating assistive technology in teaching. Recommendations for future studies include preparedness of pre-service teachers for assistive technology use in inclusive education to ensure they have sufficient knowledge for the use of assistive technology in teaching.

**Keywords:** Assistive Technology, Knowledge, Teacher, Inclusive Education

## 1. Introduction

In the 19<sup>th</sup> century, subject content knowledge was strongly being emphasised and it was known as an important element in teaching (Shulman, 1986; Thinzarkyaw, 2020). Towards the beginning of the 20<sup>th</sup> century, there was a switch in evaluating teachers' competencies, shifting its focus fundamentally to pedagogy (Shulman, 1986; Mishra & Koehler, 2006). Content and pedagogical knowledge cannot be mutually exclusive, there is an intersection point between these two elements, where good teachers need to confront these both issues concurrently to make the topics or content that they want to teach understandably to learners (Shulman, 1986). The blend of Pedagogical Content Knowledge (PCK), which goes beyond teachers' knowledge of the subject matter but the teachability of it, the knowledge of coming out with strategies to ease the learning process with their understanding of what makes the certain topic easy or difficult to be understood by learners (Shulman, 1986). Teachers need to be able to engage students in ways that align with the specific content being taught not just the content knowledge

in this context but also the way of delivering the content plays an important role (Redford, 2019). In the 1980s, technological knowledge was still not being emphasised as to how they are being foregrounded today due availability of technology, primarily digital technologies were not as commonly found nor used (Mishra & Koehler, 2006). However, textbooks, projectors, typewriters, highlighter, enlarged printed paper and many more, which were considered as low technologies, were being used by teachers in traditional classrooms. Often, low-tech technologies which can be conveniently found in today's classrooms were not even being considered as technologies (Mishra & Koehler, 2006).

In this contemporary era, the rapid development of technology has changed human work in many ways which include the world of education. These changes brought into the introduction of technology in education resulted in the trend towards more access to digital technologies given to students with educational needs and support their learning which symbolised the starting point of school ed-tech strategies. (Redford, 2019; Cranmer, 2020). The hardware, software, educational games and apps are one class of educational technology that has delivered on the promise to revolutionise teaching and learning (Redford, 2019). Mishra and Koehler (2006) introduced technological knowledge as the new domain and formed Technological Pedagogical and Content Knowledge (TPACK) model due to the immersed of role of the technologies, particularly in education. Research findings have shown, in order for teachers to make appropriate use of assistive technology, they need to acquire technological knowledge in order to use assistive technology to improve students' learning outcomes as it influences how teachers effectively integrate technologies in teaching (Hutchison, Beschorner, & Schmidt-Crawford, 2012; Edyburn, 2013).

### **1.1. Technological Knowledge in Assistive Technology**

A functional understanding of technological knowledge justified its resistance to the changes in technology tools (Voogt, Fisser, Roblin, Tondeur & van Braak, 2013). Shulman did not specifically emphasised on technological knowledge but he explained how teachers can use different representatives in explaining specific topics/concepts when they teach in class as an extension of explanation for pedagogical knowledge. Furthermore, Mishra and Koehler (2006) stressed on how the low-tech tools are commonly found in the classroom and therefore being considered as "transparent" and sometimes not even being referred to as technologies. They argued and defined technological knowledge as the knowledge of how to use, install, operate and remove software or assistive devices, and most importantly adjusting these technologies into their classroom teaching (Mishra & Koehler, 2006; Cox & Graham, 2009).

Mishra & Koehler's TPACK framework being commonly used and researched, technological knowledge was being defined differently by different researchers. The definitions of technological knowledge are different in what are the technologies being included and the types of knowledge in this domain (Voogt, et al., 2013). Technological knowledge refers to the knowledge of technologies ranging from low to high tech, which includes books, pencil, lined papers to digital devices, the internet, interactive whiteboard (Schmidt, Baran, Thompson, Mishra, Koehler, & Shin, 2009). On another hand, Cox and Graham (2009) defined technological knowledge as knowledge on using emerging technologies; emerging technologies are defined as the new technologies that have not been treated as "transparent" in an educational setting and argued that digital technologies appeared to be the commonly found emerging technologies. While some defined technological knowledge as the knowledge of ICT technologies, for example how iPad, computers, cartoons, audiobooks, games, animations and

apps can be used to support student learning and their social life (Bower, Hedberg & Kuswara, 2010; Lee & Tsai, 2010; Hutchison, et. al., 2012; Demirok & Baglama, 2018).

The diversity of assistive technologies in this modern age make wonders as they take the needs and interests of individuals into account and drew attention to how they can be used to support and serve students with special educational needs (Arouri, Attiyah, Dababneh & Hamaidi, 2020). For students with special educational needs teachers' technological knowledge in assistive technology makes a huge difference in opening the door of learning, participating, socialising, building the relationship and providing equal opportunities for learning in class with their able peers. The technological knowledge from low to high tech assistive technologies; from using to adjusting these technologies for their learning are essential in supporting their needs in many different areas. With the availability of assistive technologies in today's world, teachers will need to carefully plan and incorporate these technologies to empower students with special educational needs in class. Teachers' knowledge is essential because it helps in identifying the right tools to be used in teaching for the benefits of students with special educational needs. Successful use of assistive technology is associated with teachers' realisation of the benefits of these technologies in teaching students with needs and the key of it is teachers need to have the knowledge about the tools and how to use them in accommodating students' needs and supporting students' learning which allow them to be more competent and more involved in the application and implementation of the technologies (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur and Sendurur, 2012; DePountis, Pogrund, Griffin-Shirley, & Lan, 2015; Siyam, 2018; Arouri, et. al., 2020). This basic domain influence teachers' use of assistive technology but it influences the whole learning experiences, it offers powerful possibilities in improving students' learning and lives inside and also indirectly outside of the classroom. Therefore, teachers need to have sufficient knowledge about low-tech and high-tech assistive technology, knowing how to match it with students' needs or their learning environment (Jones & Hinesmon-Matthews, 2014).

## 1.2. Use of Assistive Technology

Assistive technology is being used in inclusive education to train, rehearse and enable learning (WHO, 2015; Ahmad, 2015). The use of assistive technology helps to bridge the gap between the able and disable kids in the same classroom, helping them to learn the similar topic/concept in a different way which they can understand by removing the barriers in learning and compensating for their lack in certain abilities, and work on their strengths. Assistive technology provides alternative ways for students to learn, show their learning and complete the works given by their teachers and increase the independence. Consistent with the findings in previous literature reviews, assistive technology found to have several benefits for students with special educational needs and should be taken note of by teachers.

First and foremost, use of assistive technology can increase students' engagement either in individual academic work or collaborative work with peers instead of waiting passively for teacher's support and this open up access and allow students to participate fully in an inclusive classroom (Pilgrim, Bledsoe, & Reily, 2012; Atanga, et. al., 2019). In addition, there is increasing evidence that these practical tools connect students' cognitive abilities with their learning opportunities and provide accessibility in classroom learning (Nkwoagba, 2011; Ahmad, 2015). Interestingly, Shapley, Sheehan, Maloney, & Caranikas-Walker (2011) found that teachers with the use of assistive technology managed their class differently, where special educational needs (SEN) students found to have better interaction which resulted in greater school attendance of students and they also reported to have less disciplinary actions. Different

areas of functions need different types of assistive technology in compensating the lack of abilities, for example, students with difficulties in decoding can use text to speech software to help them with reading; students with limitations in executive functioning can use a graphic organiser or work clock to serve as their organisation tools; word processor or speech to text as the assistive technologies for students who struggle with writing or spelling (Ahmad, 2015; Park, Takahashi, Roberts, & Delise, 2017). With the use of these tools, students with special educational needs will be able to accomplish tasks that are difficult or seem impossible for them, it encourages them to continue trying and learning. Ertmer and Ottenbreit-Leftwich (2013) also supported that the use of technology will help students learning in the classroom but instead of focusing on the technology integration, they focused on the pedagogical approach where technology can be used as a cognitive tool that helps students in authentic learning and called for a shift from technology integration to technology-enabled learning.

### **1.3. Teachers' Knowledge and The Use of Assistive Technology**

Teachers must have sufficient knowledge in ensuring assistive technology has been used successfully for students with learning disabilities (Tony, 2019; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur and Sendurur, 2012; Arouri, et. al., 2020). The teacher who is equipped with technological knowledge effectively use assistive technology in their teaching instruction and supporting students' learning (Flanagan, Bouck & Richardson, 2013). The success of inclusion needs students with special educational needs to be included academically and socially with the help of assistive technology (Chmiliar, 2017; Erdem, 2017; Chambers, 2019). While the literature demonstrates that teachers' knowledge as an important factor in influencing their use of assistive technology, it also shows lacking of knowledge in teachers cause them to be incompetent, influence their confidence level and also influence the frequent use of assistive technology in class (Alkahtani, 2013; Yamamoto & Yamaguchi, 2017; Chukwuemeka & Samaila, 2020; Thurm & Barzel, 2020). Furthermore, studies found that lacking knowledge in teachers caused the assistive technology to be underused as teaching using technology is not a straight forward task, teachers will need the knowledge in understanding the digital tools techniques (Drijvers, 2019; Chukwuemeka & Samaila, 2020). With the technology has not been utilised and incorporate in the inclusive classroom, it will affect students' learning and widen the achievement gap between the able and disable kids in an inclusive classroom.

Comparatively, most of literatures demonstrate that assistive technology helps SEN students in learning, to engage and collaborate with peers from students' perspectives and this shows that there is a dearth of literature directly targeting teachers' perspectives of their knowledge and use of assistive technology, particularly in inclusive education. This means that there is a lack of systematic research on teacher knowledge and their use of assistive technology in relation to the inclusive education context. Teachers' experiences in using assistive technology which build or enhance this positive learning environment can enhance the essence of assistive technology immersion which allow the researcher to see the context from a different perspective. Thus, systematic review is needed to report the current understanding as well as fill the gap in current research on the influence of knowledge on teachers' use of assistive technology.

## 2. Method

This study aims at analysing studies of the Influence of teachers' knowledge on the use of assistive technology primarily in the inclusive education through systematic review. Systematic review designed to be comprehensive, robust, inclusive, transparent, and reproducible when bringing together the evidence to answer a research question and it is a scientific tool that can be used to select the relevant studies in all design, then summarise, appraise and communicate the results of these unmanageable studies in answering a particular research question (Petticrew & Roberts, 2006; Bethel, Rogers & Abbott, 2021). Thus, a systematic review of the influence of teachers' knowledge on the use of assistive technology is important in identifying, evaluating and summarising all the relevant studies, provide an authoritative overview of current studies that are related to teachers' knowledge and the use of assistive technology and making the available evidence more accessible to teachers and decision makers in inclusive education.

The review is guided by the following review question: "What is the influence of teacher knowledge on the use of assistive technology?" The synthesis of this review went through seven stages as guided by Petticrew and Roberts' framework included defining review question, determining the types of studies needed to answer the review question, carrying out the literature search, screening the references and assessing the remaining studies against the inclusion/exclusion criteria, critical appraisal, synthesis of primary studies and considering the effects of publication bias and other internal and external biases (Petticrew & Roberts, 2006). A search by employing keywords such as technological knowledge, knowledge, assistive technology, adaptive technology and teacher in the electronic database included ERIC (Educational Resource Index and Abstracts), EBSCOhost by Elton B. Stephens Company and Scopus. Furthermore, several Boolean phrases were used, such as AND, OR, NOT, to reduce the duration of seeking for the relevant studies for the research aim. Qualitative and quantitative studies which collected data on teachers' perception about their knowledge and their use of assistive technologies have been included in this study to include broader range of evidence and reduce the risk of biased conclusions.

### 2.1. Inclusion and Exclusion Criteria

The inclusion criteria for this initial search to look for relevant studies were:

- i. the study must be published in English
- ii. the study must include the specific keywords mentioned above, published between January, 2011 and January, 2021
- iii. participants must be a teacher with no age limit, either from primary or secondary school
- iv. all gender and any country
- v. Teachers' knowledge and the use of assistive technology must be the key measurements/assessments, with evidence.

In order to refine search result, four exclusion criteria were used considering the review question. Important to noted that, if a study that had been published in other types of publications (books, books chapter, conference paper and dissertations), did not include the use of assistive technology as a teaching tool, published in another language other than English and was not an empirical study were excluded. Following this process, 131 articles were extracted from ERIC, 324 articles were extracted from EBSCOhost, and 311 articles were extracted from the SCOPUS database. After reading the abstract, 45 articles were selected for screening process. Among the remaining 45 articles, 9 duplicate records were omitted for full texts articles assessed for eligibility. For eligibility and fulfilment of the requirements based on the inclusion

and exclusion criteria for this review, researcher successfully yielded 11 relevant studies which were selected to be included in this review. Next, an additional inclusion criterion which was the influence/relationship between teacher self-efficacy and use of assistive technology had to be measured. With this, 6 studies were left and included for in depth review.

### **3. Data Extraction**

The 6 studies were systematically reviewed and relevant information from the studies were extracted. The types of data extracted from the identified relevant studies were based on the review question. As this review aims at addressing the influence of teachers' knowledge on the use of assistive technology in the inclusive education context, data included the sample population, country where the research was conducted, year of publication, number of participants, research method, sampling method and finally research findings were the relevant information extracted from the articles and were tabulated in table 1 below.

*Table 1 General Characteristics of the Studies*

Authors	YOP	Country	Method	NOP	SM	SP	TK	Findings
Atanga, Jones, Krueger & Lu	2019	USA	Quantitative	62	Random	PST SST	limited	Knowledge +ve use of AT
Lamond & Cunningham	2019	Canada	Mixed Method	24	Non Random	PST SST	Adequate	Knowledge +ve use of AT
Flanagan, Bouck & Richardson	2013	USA	Mixed Method	51	Random	SST	Lack	Knowledge +ve use of AT
Alkahtani	2013	Saudi Arabia	Mixed Method	127	Random	-	Lack	Knowledge +ve use of AT
Fernández-Batanero & Lopez	2019	Spain	Quantitative	777	Non Random	PST	Sufficient	Knowledge +ve use of AT
Abed	2018	Saudi Arabia	Qualitative	20	Non Random	-	Lack	Knowledge +ve use of AT

Note. YOP= Year of Publication; SP= Sample Population; SM= Sampling Method; NOP= Number of Participants; PST= Primary School Teachers; SST= Secondary School Teachers; TK= Teachers' knowledge; AT= Assistive Technology; +ve= positively influenced; -ve= negatively influenced

Followed by data extraction, the quality of the studies was analysed using the EPPI-Centre Weight of Evidence (WoE) tool by Gough (2007). Initially, the quality of the study was being analysed from the three different perspectives which included the coherency and integrity of the study (WoE A), the appropriateness of the form of evidence (WoE B) and the relevance focus of the evidence in answering the review question (WoE C). In order to make a final decision deciding the quality of the study, an overall assessment was done (WoE D), compiling the three separate judgements.

As the analysis shown in Table 2, two of the studies were rated as high-quality research due to one of their primary focus of the studies looking at the impact of teachers' knowledge on the use of assistive technology, design of the study and the process of recruiting participants were clearly explained, limitations of the studies were cited and have the reliability of measurements indicating high coherency and integrity while evidence in the studies were found to be relevance and appropriate in answering the review question (Lamond & Cunningham, 2019; Flanagan, et. Al., 2013). On the other hand, the integrity and relevance focus of the evidence are not as convincing when the limitation of the study was not mentioned (Alkahtani, 2013), small sample size was used (Atanga, et. al., 2019) and the influence of teachers' knowledge on the use of assistive technology but was not the main focus of the study (Atanga, et. al., 2019; Fernández-Batanero & Lopez, 2019) which affected the quality of the studies. The overall WoE for the studies done by Abed (2018) was rated as medium quality research due to the lack of clarity in how the participants were recruited, limitation of the study did not mention and the interpretations of the result for his qualitative study without the use of verbatim quotations from the participants.

*Table 2: Analysis of the Quality of the Studies using Weight of evidence (WoE) Framework*

Study	WoE A	WoE B	WoE C	WoE D
Atanga, et. al. (2019)	High	Medium	Medium	Medium/High
Lamond & Cunningham (2019)	High	High	High	High
Flanagan, et. al. (2013)	High	High	High	High
Alkahtani (2013)	Medium	Medium/High	Medium/High	Medium/High
Fernández- Batanero & Lopez (2019)	High	Medium	Medium	Medium/High
Abed (2018)	Medium	Medium	Medium	Medium

## 4. Discussion

The overall review and synthesis of the studies have revealed that teachers' knowledge has a positive influence on the use of assistive technology among primary and secondary teachers. This finding is also consistent with the findings in previous studies where teachers' knowledge was found to be crucial in allowing them to be more involve and competent in using assistive technology (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur and Sendurur, 2012; DePountis, Pogrund, Griffin-Shirley, & Lan, 2015; Siyam, 2018; Arouri, et. al., 2020). Interestingly, even for teachers who are lacking of technological knowledge, they do agree that with more knowledge, they will be more confident in using assistive technology (Atangan, et. al., 2019; Flanagan, et. al., 2013; Alkahtani, 2013; Abed, 2018). Relatedly, despite having lesser years of experience, younger teachers were reported to have higher level of technological knowledge due to the training and exposure on assistive technology that they have exposed to during their preservice teacher education program (Lamond & Cunningham, 2019; Fernández-Batanero & Lopez, 2019). Next, from the 6 articles that had been reviewed, most of the studies were carried out in the developed countries like USA (n=2), Canada (n=1) and Spain (n=1) (Atanga, et. al., 2019; Lamond & Cunningham; 2019; Flanagan, et. al., 2013; Fernández-Batanero & Lopez, 2019). This also shown that studies on the influence of teachers' knowledge and the use of assistive technologies were lacking in the Asia context, let alone Malaysia.

Besides, sample sizes of the studies varied widely from 20 participants to 777 participants. In relation to the methodologies employed by the studies reviewed, it was found that most of the researchers employed mixed-method study which indicated researchers began to value and aim to gain more insight around issues related to teachers' knowledge and their use of assistive technology from teachers' perspectives in the inclusive education context (Lamond & Cunningham, 2019; Flanagan, et. Al., 2013; Alkahtani, 2013). Survey and questionnaire were used as the major data collection tools in most of the studies (Atanga, et. Al., 2019; Lamond & Cunningham, 2019; Flanagan, et. Al., 2013; Alkahtani, 2013; Fernández-Batanero & Lopez, 2019). Besides using survey and questionnaire, the mixed-method studies and the solely qualitative study also used open-ended questions or interview to collect in-depth data, exploring teachers' technological knowledge and their use of assistive technology (Lamond & Cunningham, 2019; Flanagan, et. al., 2013; Alkahtani, 2013; Abed, 2018).

On the other hand, analysing the gender of participants who took part in the studies, five out of six studies had a female-dominated sample (Atanga, et. Al., 2019; Flanagan, et. Al., 2013; Fernández-Batanero & Lopez, 2019; Alkahtani, 2013; Lamond & Cunningham, 2019). Therefore, as for recommendation, more studies can be done which involve more male teachers where comparison of their level of knowledge and the use of assistive technology can be done between male and female teachers. As there is lacking of studies being done solely either in primary or secondary school, considering only the primary school or secondary school context could potentially yield an interesting finding. While the systematic review shows that most of the teachers were lacking of technological knowledge, perhaps for future recommendation, researchers can look into preparedness of pre-service teachers for assistive technology use in inclusive education to ensure they have sufficient knowledge for the use of assistive technology in teaching. It will be interesting to explore how knowledge of assistive technology of teachers change or develop from preservice to in-service teacher and looking at how or where is the area which can further be improved to help the implementation of assistive technology in teaching students with special educational needs in an inclusive classroom.

## 5. Conclusion

Assistive technology knowledge encourages teachers' use of assistive technology and increase their self-rated proficiency, in another word believe that they are more skillful in using assistive technology (Atanga, et. Al., 2019; Lamond & Cunningham, 2019; Flanagan, et. Al., 2013). Therefore, it is rational to suggest that teachers' knowledge, which defined as technological knowledge in the TPACK framework, have a positive influence on the use of assistive technology. With adequate knowledge in assistive technology, teachers will be more confident in ICT adoption and assistive technology implementation which allow learners to be supported with the learning aids. The present systematic review of 6 studies on teachers' knowledge and the use of assistive technology has revealed to us that there are areas around issues of teacher self-efficacy and use of assistive technology that need to be researched. Firstly, ways to increase teachers' knowledge as this is not only influencing their use of assistive technology but also their confidence level in assistive technology. Secondly, trainings in the area of assistive technology can be explored further as this was also being requested by teachers or suggested by researchers in a few studies (Lamond & Cunningham, 2019; Abed, 2018; Flanagan, et. Al., 2013; Fernández-Batanero & Lopez, 2019). There are a few limitations of this study which include the variability of the measures used for teachers' knowledge and their use of assistive technology. Searches of studies, screening of references and quality rating were done by one researcher which might result in reporting bias. In conclusion, this review has presented findings and recommendations to assist researchers in the overall understanding of the current literature on teachers' knowledge and the use of assistive technology and have suggested a few recommendations for future studies.

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# THE LEVEL OF PROBLEM-SOLVING SKILLS OF GIFTED STUDENTS IN JORDAN, A COMPARATIVE STUDY BETWEEN THE SCHOOLS OF EXCELLENCE AND THE JUBILEE SCHOOL

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## ABSTRACT

Problem-solving skills are considered one of the essential skills of the twenty-first century because nations and individuals face various problems. This study aimed to determine the level students of grade nine of King Abdullah II schools for excellence and Jubilee school in Jordan in Problem-Solving skills and a comparison between the levels of the two groups in these skills. The study sample comprised 23 students from the Jubilee School in Amman (Private school) and 30 students from Schools of Excellence in Madaba Governorate (Government school). They were randomly selected from the study population. The research used the Heppner test to determine the level of students' possession of problem-solving abilities. This tool was chosen because of its scientific fame, Arabization, and suitability for the Jordanian environment. The validity and reliability of the instrument have been verified. To reach the results, the researchers used the Statistical Package for Social Sciences SPSS version 25. Descriptive statistics were used, and an independent T-test was used to determine whether there were statistically significant differences between the averages of the two groups. The results showed that gifted students in the two groups possess good skills in solving problems. The results also showed that the Jubilee School students outperformed their counterparts in Schools of Excellence in these skills. The paper suggested recommendations regarding the results of the study.

**Keywords:** Problem-Solving, Gifted students, Jubilee School, King Abdullah II Schools for Excellence, Heppner Test.

## 1. Introduction

Educational systems are keen to build learner awareness what he performs in terms of tasks, developing his efficiency and ability to think, creativity, innovation and imagination, and finding solutions to the various problems he faces and which make up an obstacle to his progress and achieving his goals (Bubakri & Neama, 2020).

Countries at the global level have been keen on developing the skills of their members in line with the spread of problems, their diversity, and depth, and Jordan has endeavored to create the capabilities of its students in the skills related to the twenty-first century, which includes the ability to solve problems by providing schools dedicated to the care of the gifted, whether in public or private schools. The rapid change in the world demands attention to different skills than previously (Ministry of Education, 2019).

The skills of problem-solving are essential because they are linked to many desirable characteristics in any society, as it develops self-confidence (De Fleith et al., 2002; Farahat, 2015), encourages the student to build his knowledge (Zaytoun, 2004), and prompts the student to reach his goal with confidence and distinction (Abu Qurah, 2012). Also, the ability to solve problems by developing the student's scientific skills (Abu Rayyash & Qutait, 2008; Zaytoun, 2004), and improving his relationships with others such as his family, colleagues, teachers, and members of his community (Daunic et al., 2000), also it helps in maintaining community security and reducing crime (Ahmad, 2010), besides, it emphasized some positive impact of problem-solving ability on students' mental health (Asimopoulos et al., 2018). The ability to solve problems is also an essential motivation for thinking (Al-Zayyat, 2001). This ability benefits the student and benefits his community (Al-Tabeeb & Al-Malool, 2016). On the other hand, Makhlofy and Budiaf (2017) indicated that problem-solving technique helps develop creative thinking skills. The importance of problem-solving ability is also evident at the top of the learning pyramid. The student uses his skills and experiences to reach a creative solution to the problem he faces (Melhim, 2002). In the same context, Farahat (2015) indicated that providing students with the problem-Solving skills leads to developing their affiliation with their religion and homeland, increasing students' self-reliance, increasing confidence in their abilities, and respecting themselves.

Amidst global interest in twenty-first-century skills, including thinking skills and the ability to solve problems, Jordan seeks to provide its students with the skills needed for the twenty-first century by providing them with a suitable environment to train on these skills, and Jordan is considered one of the first countries interested in developing thinking skills. Interest in this category began in the seventies of the last century and the formation of the Arab Council for the Gifted and Talented, which is based in the Jordanian capital, Amman.

One of the manifestations of this interest is the establishment of the Jubilee School, as this school was the first school specialized in nurturing the gifted in the Middle East and the Arab world (Jubilee School, 2020). Then, the pioneer centers were established that work to promote the gifted outside the official working hours of the schools and the support classes that were allocated to the gifted and take care of their needs, and the King Abdullah Schools of Excellence (Ministry of Education, 2018).

This study aims to determine the ability of gifted students to solve problems in the Jubilee School and King Abdullah II Schools for Excellence and to compare the averages of students' scores in problem-solving skills adopted by Heppner assessment, namely: Problem Identification, outlining of problem, Construction of alternatives, Making decisions, and Assessment.

It is expected that this study will open the way for other research related to developing students' skills in the ability to solve problems, discuss ways of cooperation between schools specialized in caring for the gifted and talented, in making the most of the expertise available in these institutions.

## 2. Background and Rationale

In a study conducted by Saygili (2014) aimed to compare the average performance of gifted and ordinary students in the ability to solve problems, the study results showed no statistically significant differences between the performance of the two groups.

Dreeb (2014) conducted a study aimed at comparing the performance of gifted and ordinary students in problem-solving skills. The study sample consisted of 240 male and female students from the fifth grade of high school from gifted and ordinary students classified according to their schools. The researcher concluded that The level of gifted students in the ability to solve problems was also average. In the same context, Ucar et al., (2017) study determine the extent to which gifted students in Turkey possess problem-solving skills; the study results showed that the level was not high and that student ownership was not as expected from this category.

The results of these studies are in line with the results of the Al-Fasatlah (2015)study, which aimed to study the extent to which students of King Abdullah II Schools for Excellence possess the skills of problem-solving ability, as the results showed the level of students in these skills was average, which is below the expected level for this influential group in society. In the same context, Hasoon (2019) conducted a comparative study on the extent to which gifted and ordinary students possess the ability to solve problems. The study sample consisted of 240 ordinary students and 138 gifted students. The study concluded that there are no statistically significant differences in the average students' scores in skills Ability to solve problems attributable to classification (gifted, ordinary).

After a review of the theoretical literature, few studies are concerned with measuring problem-solving ability. It also appears from the results of previous studies that insufficient attention is paid to developing the ability to solve problems among gifted students at the global and local levels. Nevertheless, the Jordanian Ministry of Education is striving to develop the skills of its gifted students, whether through private schools such as the Jubilee School and the government schools such as King Abdullah II Schools of Excellence.

Several studies indicated that gifted students lack problem-solving skills, such as the study of (Al-Fasatlah, 2015; Dreeb, 2014; Hasoon, 2019; Ucar et al., 2017), this study seeks to know the level of gifted students in Jordan (in public and private schools) in these skills and opens the way for decision-makers to cooperate between administration private and government schools to transfer experiences to enrich the educational process associated with gifted students and develop their skills. Besides, this research paper also seeks to compare the

performance of the students of the two schools in the ability to solve problems so that the educators in the schools and decision-makers can overcome the difficulties for cooperation between the specialized schools that take care of the gifted and benefit from the experiences carried out by both private and government schools, which helps in developing the performance of gifted students and allocating support programs for them. Determining the level of gifted individuals possessing the skill of problem-solving ability will help all parties to the educational process to develop the gifted skills and achieve the strategic goals of the Jordanian Ministry of Education and build training programs for teachers, students, and parents to achieve this strategy.

### **3. The Study Terms**

In this paragraph, researchers will review the study concepts as below:

#### **3.1. Problem-solving Skills**

Problem solving skills are among the most important skills of the twenty-first century that the educational system must provide to students(Gravemeijer et al., 2017; Hokanson, 2017). Jarwan and Alabbadi (2010) defined problem-solving as a complex process in which an individual uses his skills and experiences to address a specific situation to reach his goal. Besides, Daunic et al., (2000) mentioned that students' possession of this skill improves their self-confidence and develops their social relationships and intellectual abilities. Furthermore, providing learners with complex problems and training them to deal with them in the classroom and outdoor activities enhances self-confidence and awareness of the actual world(Ukobizaba et al., 2020).

#### **3.2. Gifted Students**

Jøsendal et al., (2016) indicated that gifted children are children with unusual and high educational potential. Besides a gifted student is defined as one who surpasses his classmates in one or more fields, provided that this distinction is of value in the society to which the student belongs (Reis & Renzulli, 2004); a person gifted in one culture may not be seen as gifted in another (Dai & Chen, 2013).Besides, gifted students are the hope of nations and the source of their advancement (Al-Qummarsh & Al-Maayyah, 2014); therefore, it seeks Countries to take advantage of this category to achieve their goals (Al-Tabeeb & Al-Malool, 2016).

#### **3.3. King Abdullah II Schools for Excellence**

Because of the importance of nurturing gifted students globally and regionally, a royal decree was issued in the year 2000 to establish King Abdullah II Schools for excellence that aims to develop the capabilities of gifted students and benefit from their potential. The gifted students are selected from regular schools; they take tests to measure their abilities and personal interviews who meet the affiliation requirements. Students are offered special sponsorship programs and the Ministry of Education curriculum, such as leadership programs, programming training, and community service programs (Ministry of Education, 2015).

### **3.4. Jubilee School**

A non-governmental school whose establishment was announced in 1977 and the school was launched in 1993/1994 as the first institution specialized in teaching academically gifted and talented students in the Arab region. The school cooperates in its programs with the Ministry of Education and implements special academic, cultural, and social programs for students affiliated with it (Jubilee School, 2020).

## **4. Objectives of The Paper**

This study seeks to achieve the following objectives:

- To examine the problem-solving skills of gifted students at King Abdullah II schools for excellence.
- To examine the problem-solving skills of gifted students at Jubilee School.
- To determine whether there are any differences between gifted students at King Abdullah II schools for excellence and gifted students at Jubilee School in the solving-problems skills.

## **5. Hypotheses**

The article covers the following hypotheses:

- 1) There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Problem Identification.
- 2) There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of outlining of problem.
- 3) There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Construction of alternatives.
- 4) There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of making decisions.
- 5) There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Assessment.

## **6. Limitations of The Study**

The study is limited to:

The study sample consisted of gifted ninth-grade students affiliated to the Jubilee School in the Capital Governorate and King Abdullah II Schools of Excellence in Madaba Governorate. The King's Schools Affiliates. Data were collected in the first semester of the 2019-2020 academic year, using the study tool, which is the Heppner problem-solving assessment.

## **7. Methodology**

### **7.1. Paper Approach**

This paper used the descriptive and analytical approach; to examine the level of problem-solving ability of gifted students in King Abdullah II schools for excellence and the Jubilee School and to determine whether there were statistically significant differences in those skills between students in the two schools.

### **7.2. Participant:**

The study sample consisted of 30 male students from Schools of Excellence in Madaba Governorate and 23 students from Jubilee School, who were randomly selected. The students from grade nine. The research paper included students affiliated with these schools in the first semester of the academic year 2019/2020.

### **7.3. The Instrument**

To achieve the research objectives, which is to determine the level of gifted students in the Jubilee Private School and the King Abdullah II School of Excellence in Madaba Governorate in the ability to solve problems, the Heppner test, translated by Hamdi(1998) which was adapted to Jordan environment, was used. The questionnaire includes five areas, and each area includes eight questions that the student answers according to what suits his situation when confronting the problem. The answer includes four levels: apply completely to me, apply to me to a moderate degree, apply to me in a weak degree, do not apply to me at all. The student gets scores 4,3, 2, and 1, respectively. A student who scores 80 points or more has an adequate problem-solving ability, and a student whose total score is less than 80 lacks problem-solving skills.

The study tool was presented to ten university professors and experts in giftedness and creativity to verify the tool's validity. The Alpha Cronbach equation was used to ensure the reliability of the tool. The reliability value between all paragraphs was (0.86), an acceptable percentage for adopting the tool.

The tool developer-approved correction guide has been relied upon to achieve objectivity. The tool included forty paragraphs divided into five domains names: Problem Identification, outlining of problem, Construction of alternatives, Making decisions, and Assessment, where the student answers each paragraph with one of the answers: Applies to me with a high degree, applies to me with a medium degree, applies to me at a weak degree, does not apply to me. After collecting the data, the Statistical Package for Social Sciences(SPSS) version 25 was used to extract the results and used t-test for two independent groups.

## 7.4. Data Analysis

Descriptive statistics were used as the mean and the standard deviation to determine the level of gifted students in both schools in the ability of problem-solving skills. The study also used SPSS version 25 to achieve the second objective, using the independent t-Test to study whether there were statistically significant differences between the students' averages of scores from each problem-solving skill.

# 8. Findings

Based on the objectives of the study, we can detail the results as follows  
Results related to the first objective:

## 8.1. First Objective:

*To examine the problem-solving skills of gifted students at King Abdullah II schools for excellence.*

After collecting data related to performing gifted students in King Abdullah Schools for Excellence in Madaba according to the Heppner test, the results showed that the average score of students reached 75.53, a level close to the acceptable level for these skills according to the correction guide.

## 8.2. Second Objective:

*To examine the problem-solving skills of gifted students at Jubilee School.*

The answers of the gifted students in the Jubilee School were dealt with the same way as the answers of the students of the King Abdullah II School for Excellence, where the average score of the students in Jubilee school was 78.17, which is also a level close to the acceptable level of skill.

This result is in agreement with the studies of (Al-Fasatlah, 2015; Dreeb, 2014; Hasoon, 2019; Ucar et al., 2017), Where they indicated that students' results on the test of problem-solving ability do not match the skills of gifted students.

This result confirms the need to pay attention to this skill in an organized scientific manner, and teachers must be trained in this skill by competent specialists.

And to find out if there are statistically significant differences between the mean scores of the students in the total of the test, the independent T-test was used for the two independent samples, and the results were as in (Table1)

*Table 1: Results for independent t-test for overall Heppner test for Excellence school and Jubilee school*

Groups	Excellence S		Jubilee S		Mean diff	t value	p-value
Over all scores on Hepp.	Mean	(±SD)	Mean	(±SD)			
	75.53	4.13	78.15	4.37	2.64	19.342	0.029

The results in the table show that there are statistically significant differences between the mean scores of students in the results of the overall Heppner test for the ability to solve problems in favor of students in the Jubilee School, as the p-value is less than (.05). The average score of students of the Jubilee School is greater than the average score of students in Schools of Excellence.

This result is in agreement with the studies of (Al-Fasatlah, 2015; Dreeb, 2014; Ucar et al., 2017), Where they indicated that students' results on the test of problem-solving ability do not match the skills of gifted students. This result confirms the need to pay attention to this skill in an organized scientific manner, and teachers must be trained in this skill by competent specialists.

### **8.3. Third Objective**

*To determine whether there are any differences between gifted students at King Abdullah II schools for excellence and gifted students at Jubilee School in the solving-problems skills.*

To achieve this objective, five hypotheses emerged that must be tested:

#### **8.3.1. Hypothesis One:**

*There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Problem Identification.*

A suitable statistical test to test this hypothesis is the two independent samples T-Test. Table (2) shows the test results:

*Table 2: Results for independent t-test for Problem Identification in Heppner test for Excellence school and Jubilee school*

Skill	Excellence Sch.		Jubilee Sch.		Mea	t	p-
<i>Problem Identification on of Hepp.</i>	Mean	±SD	Mea	±SD)	2.64	9.30	0.00
	15.20	1.66	20.8	2.70			

This hypothesis was rejected because the statistical test results show that there are statistically significant differences between the averages of the students in the two schools in favor of the students of the Jubilee School, as the value p-value is 0.00, which is less than .05. The average score of the students of the Jubilee School is higher than the average scores of the students of the School of Excellence.

### **8.3.2. Hypothesis Two:**

*There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of outlining of problem.*

Also, for this hypothesis, the suitable statistical test is the two independent T-Test. Table (3) shows the test results:

*Table 3: Results for independent t-test for Outlining of Problem in Heppner test for Excellence school and Jubilee school*

Skill	Excellence S		Jubilee S		Mean	t value	p-value
	Mean	(±SD)	Mean	(±SD)			
	15.46	1.50	22.04	2.60			

Also, this hypothesis was rejected because the statistical test results show that there are statistically significant differences between the averages of the students in the two schools in favor of the students of the Jubilee School, as the value p-value is 0.00, which is less than .05. The average score of the students of the Jubilee School is higher than the average scores of the students of the School of Excellence.

### **8.3.3. Hypothesis Three:**

*There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Construction of alternatives.*

The suitable statistical test for this hypothesis is the independent T-test; table 4 shows the test results.

*Table 4: Results for independent t-test for Construction of Alternative in Heppner test for Excellence school and Jubilee school*

Skill	Excellence S		Jubilee S		Mean	t value	p-value
	Mean	±SD	Mean	±SD			
	15.40	1.83	22.41	2.66			

This hypothesis was rejected because the p-value less than 0.05. The results also show that the performance of the Jubilee School students was better than the performance of their peers at the King Abdullah School for Excellence.

### **8.3.4. Hypothesis Four:**

*There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Making decisions.*

To test this hypothesis, the independent t-test was used. Table 5 shows the results of the statistical test.

*Table 5: Results for independent t-test for Making a decision in Heppner test for Excellence school and Jubilee school*

Skill	Excellence S		Jubilee S		Mean diff	t value	p-value
Making decisions	Mean	(±SD)	Mean	(±SD)	8.16	10.44	0.00
	15.10	2.35	23.26	3.33			

Since the p-value is less than .05, the hypothesis was rejected. The results also showed that the jubilee students' performance is better than the students in King Abdullah II Excellence school in this skill.

### **8.3.5. Hypothesis Five:**

*There are no statistically significant differences between the average grades of gifted students in the Schools of Excellence and the Jubilee School in the skill of Assessment.*

The suitable statistical test to test this hypothesis is the independent T-test. Table 6 shows the results of the statistical analysis.

*Table 6: Results for independent t-test for Assessment in Heppner test for Excellence school and Jubilee school*

Skill	Excellence S		Jubilee S		Mean diff	t value	p-value
Assessment	Mean	±SD	Mean	±SD	6.32	8.69	0.00
	14.36	2.26	20.69	3.03			

The hypothesis was rejected because the results of the statistical analysis show that there are statistically significant differences in performing the students in the two schools in favor of the Jubilee School, where the p-value was less than .05 and the average grades of students in the Jubilee School were higher than the average of their peers in the King Abdullah II School of Excellence.

Within the knowledge of researchers, there are no studies that compared the performance of gifted students in private schools and public schools in the skill of problem-solving ability. However, several studies compared the performance of gifted students and ordinary students as the study of Saygili (2014). In his study, he concluded that there are no statistically significant differences between the average grades of gifted students and ordinary students in the skill of problem-solving ability. The results confirm the preference of gifted students in the Private Jubilee School over gifted students in the School of Excellence in Madaba in the skill of problem-solving ability. These differences may be how students are selected in the Jubilee School and the nature of the enrichment

materials provided to students, and the training component for teachers may have a role in developing these skills. Maybe the examinations deprive students of many skills because the learning will aim to memorize the content of the subjects without concern for developing their skills.

## **9. Discussion**

The results of the study concluded that the level of gifted students in the two schools (Jubilee and Excellence schools) is close to the acceptable level; This level does not correspond to the abilities that gifted students usually possess. These results are in agreement with the study of (Al-Fasatlah, 2015; Dreeb, 2014; Hasoon, 2019; Ucar et al., 2017), the researchers explain these results because problem-solving skills, like other skills, need to be nurtured and trained, and not paying attention to them leads to losing them(Mohamed et al., 2019). Also, one of the reasons for this result is the excessive interest, whether from teachers or school administration and parents, in academic achievement without taking care of developing the necessary skills such as thinking skills and the ability to solve problems. Besides, teachers are generally keen to finish the curriculum without paying attention to the way in which the content should be dealt with educational(Ayasreh & El-Omari, 2016). The lack of clear programs to train teachers on these skills may also have a role in the weakness of these skills (Mahmoud et al., 2020). We can add also the low care of currecullum for these skills (Abdelkader et al., 2020; Dahalan, 2020).

On the other hand, parents neglect to take care of these skills and are keen on academic achievement only, due to the nature of the tests performed by children that are based on knowledge and do not care about skills.

## **10. Conclusions and recommendations**

The study aimed to determine the skill level of problem-solving ability in King Abdullah II Governmental Excellence Schools and the Jubilee Private School. It also aimed to compare the performance of gifted students in the two schools in problem-solving skills. The results showed that the level of students in the two schools is close to the acceptable level. However, the Jubilee School students outperformed their colleagues in King Abdullah Schools in the general average for testing the ability to solve problems. The results also showed that the Jubilee School students excelled in the five skills measured by the study. These skills are Problem Identification, outlining of problem, Construction of alternatives, Making decisions, and Assessment. In the same context, the results of this study are limited to a small sample of the two schools and to the temporal-spatial conditions in which the Heppner test was applied. The results of this study help decision-makers, school principals, teachers of gifted students, parents, and gifted students to develop the capabilities of gifted students and develop their orientations towards essential life skills such as the ability to solve problems. This study also helps principals cooperate to transmit experience and benefit from experiences for both public and private schools. The researchers recommend training teachers, students, and parents on this important skill and exchanging visits between teachers in different schools to exchange experiences and successful experiences. This study opens the way for researchers to determine the reasons for distinguishing students from some schools over other schools. It also opens the doors to other studies related to designing joint training programs between schools and studying their impact on developing gifted students' abilities.

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## EFFECTS OF VIRTUAL REALITY ROLE-PLAY ON SOCIAL COMMUNICATION SKILLS OF CHILDREN WITH AD/HD

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### ABSTRACT

The study used mixed methods that aimed to determine the effects of Virtual Reality Role-Play (VRRP) on social communication skills. Purposive sampling was used to choose three male students diagnosed with AD/HD where in one with comorbid ASD, with ages ranging from 9-11 years old. Social communication skills of the participants were measured using Social Communication Score Scale where in scores were computed. Each participant was observed in two contexts such as virtual reality sessions and real-life setting. Field notes and a recording camera were used to capture the observations in both settings. Patterns of behaviors, activities and events were noted down. Specifically it sought to answer the two questions: What were the effects of VRRP on the social communication skills of children with AD/HD during intervention in VR and RL; and what were the effects of the VRRP on the SCS of children with AD/HD after the intervention in VR and RL. VRRP included teaching SCS through conversations with a virtual peer by role-play activities in a monitor-based 3-D environment. Human avatars represented students who were conversing in real-time. Social Communication Score Scale was used to measure the participants' SCS by retrieving video recordings used in all observations in the VR context and RL settings of each participant. Field notes were used to note down themes that emerged in the study. Results showed that children improved in social communication skills but they varied in terms background specifically, behavior, comprehension skill and an uncontrolled variable was also identified; structure is needed to develop and demonstrate the social communication skills in the classroom; skill in ending a conversation in the RL was not common; the presence and prompts of the teacher beside each child during was needed; explicit instruction design in different stages was beneficial; the role-plays with combination of scaffolding and 3-D features of the software promoted interest and was helpful; and repetitions of activities could lead to boredom and would affect the child's social communication skills. Recommendations included promoting and creating a structured environment to enhance SCS and creating a software for children and teachers.

**Keywords:** AD/HD, Social Communication Skills, Virtual Reality

### 1. Introduction

The competencies identified for the new K to 12 curriculum have shifted its focus to 21<sup>st</sup> century learning and skills. Students these days are more familiar with technology use than in the previous generations. Connecting with friends through e-mails, instant messages and online chatting has become the norm. The use of virtual reality in educating children could be considered as a timely strategy in teaching this population of learners. Virtual reality could be a communication means that would complement the present-day needs of learners since "to be effective in the 21st century, citizens and workers must be able to create, evaluate, and

effectively utilize information, media, and technology" (Framework for 21st Century Learning - P21, n.d.). Communication and collaboration are integral parts of its framework as well. Basic interacting skill is fundamental in order to achieve excellent communication and collaboration which is the essence of this study.

Children with attention-deficit/ hyperactivity disorder (AD/HD) exhibit social skills difficulty such as interacting or establishing friendship with their peers. Literature reviewed indicate deficits in adaptive functioning (Ashwood, Tye, Azadi, Cartwright, Asherson, & Bolton, 2015) and impairment of social functioning (Ronk, Hund, & Landau, 2011; Staikova, Gomes, Tartter, McCabe, & Halperin, 2013). They are often characterized as having low self-esteem and presents difficulty executing appropriate behaviors when it comes to communicating or relating with peers. Additionally, as a result of communication problems related to expressive speech and language skills, individuals with AD/HD may display inappropriate pragmatic behaviors in conversational interactions (Kim & Kaiser, 2000). Even without diagnosed language disorders, children with AD/HD exhibit various kinds of communication difficulties (Väisänen, Loukusa, Moilanen & Yliherva, 2014). Pragmatic language difficulties which are connected with deficits in executive function is usual for these group of learners (Green, Johnson & Bretherton, 2014). Other than the apparent behavior challenges such as inattention and impulsivity in children with AD/HD, social skills particularly interacting with peers should become a target of intervention.

Role-playing has been widely applied as an intervention to improve social skills. It is viewed as an effective active learning strategy as it encourages participation among passive learners, adds dynamism to the classroom, and promotes the retention of material (Stevens, 2015). Role-play is often used to teach behavior and communication skills by simulating situations making language learning more relevant (Luiz Adrian, Zesztarski & Ma, 2015). A different form of simulation may be through the use of virtual reality.

Virtual reality (VR) is defined as a three-dimensional (3-D) interactive program that immerses the individual in a computer-simulated world. The virtual immersive environments are now used as educational simulations in schools, colleges and universities (Ludlow, 2015). It is a potential teaching strategy for social skills learning to all students, including those with behavior and social dysfunction (Miller & Bugnariu, 2016; Muscott & Gifford, 1994; Rus-Calafell, Gutiérrez-Maldonado & Ribas-Sabaté, 2014). Freina and Ott (2015) and Chow (2016) noted that the features of VR such as images, sounds and other stimuli and spatial immersion are its essentials. It can further be used as a medium through which individuals express ideas, and learn about communication through guided training and rehearsal in simulated social scenarios (Cobb, 2007), thus, the concept of the intervention included communication, role-play and VR.

This research studied the effects of role-play using VR to teach social communication skills to children with AD/HD. Role-play activities were done in an environment using VR, which simulated a real world in the computer where human avatars represented people who were conversing in real-time. The environment served as a structure for avatar interaction. Conversations using voice chat was the main component of the intervention with another person in a human-child avatar form conversing with the focus children in real-time. A private 3-D online software called Edorble purposely built for online education was chosen as a platform to conduct the virtual reality role-play (VRRP). The intervention targeted social communication skills such as initiating, responding and ending the conversation, which are essential for daily interactions of children with their peers. The study determined how Virtual Reality Role-Play (VRRP) affected the social skills of children with AD/HD particularly initiating, responding and ending a conversation. Specifically it sought to answer the following questions: What were the effects of virtual reality role-play on the social communication skills of children with AD/HD during intervention in virtual reality and real-life? What were the effects of the virtual reality role-

play on the social communication skills of children with AD/HD after the intervention in virtual reality and real-life?

The study targeted the social communication skills of children with AD/HD through a VRRP intervention. Social communication skills were narrowed into steps in making a conversation such as initiating, responding and ending the conversation.

### **1.1. Attention-Deficit/ Hyperactivity Disorder**

The definition of attention-deficit / hyperactivity disorder has evolved over time (Lougy, DeRuvo, & Rosenthal, 2007), however, what remains unchanging is how it is characterized as “chronic, neurologically based syndrome” (AD/HD Institute, 2016). In a population of children, 5% is affected while, 2.5 % in adult cultures (American Psychiatric Association, 2013). In the Philippines, an estimate of 3 to 5 % of the population of individuals age 0-14 are affected (AD/HD Society of the Philippines, n.d.). Deficits of the executive functions have been considered as root problems in AD/HD. Weaknesses in some of its domains are linked with AD/HD (Brown 2013; Dovis, Van der Oord, Wiers, & Prin, 2015; Vinson, 2007; Willcutt, Doyle, Nigg, Faraone, & Pennington, 2005). In their study, Skogli, Teicher, Andersen, Hovik, and Øie (2013) distinguished participants with AD/HD from healthy controls through measuring executive function ratings and executive function measures. Ezpeleta and Granero's (2015) findings show that executive function problems are present at age 3 for children with AD/HD. Deficits on executive function result into difficulties in the life of children with AD/HD as it has been found to affect the students' strategic planning, goal setting, and persistence negatively (Johnson & Reid, 2011). It was also found to affect inhibition, working memory (Skogan et al., 2015), and self-regulation (Moore, 2010). Deficits in these may cause individuals to display impulsive and erratic behaviors that can be misinterpreted as incompetence. The DSM-5 (APA, 2013) stated that AD/HD is commonly diagnosed in the elementary years as inattention is recognizable in a child's everyday functioning. However, it may not be advisable to identify the disorder for children before 4 years of age as behavior they exhibit may be usual for their age.

Having considered the deficits in executive function, social communication skills can also be affected. Kofler, Rapport, Bolden, Sarver, Raiker, & Alderson (2011) specified that while there are different social cues happening in the environment, there is a problem in working memory to attend to all these. This results to deficit in social interaction. They further concluded that central executive impairment had an effect on social problems. Karasinski (2015) concluded that language ability was connected with attention problems in school-age children, not with internalizing and externalizing problems in behavior. Behavior problems however, are attributed to problems with inhibition. Bruce, Thernlund, and Nettelbladt (2006) concluded that pragmatic problems in majority of children are connected with some aspects of AD/HD symptoms, particularly inattention and impulsivity. With regard to language, Schuch, Utsumi, Machado, Thaís, Kulikowski, & Muszkat, (2015) mentioned that the areas of the brain of individuals with AD/HD for language and attention/ inhibition are impaired. Hawkins, Gathercole, Astle, and Holmes (2016) however noted that there is less evidence on the relationship of behavior and pragmatics despite the problems of behavior and pragmatics were evident in the study. They further interpreted that executive function impairments increases problems in behavior and social communication, and problems with other cognitive abilities affect the development of structural language skills.

Mancil, Conroy and Haydon (2009) study on effectiveness of combining milieu therapy and functional communication training showed that there was an aberrant behavior decrease

concurrent with an increase in total percentage of communication responses in preschool or elementary aged children with Autism Spectrum Disorders. Maintained communication and low rates of aberrant behavior were seen and communication was generalized from the home to the classroom.

## **1.2. Social Communication Skills**

Communication is defined as a process (Berko, Bostwick, & Miller, 1989; Person, Nelson, Titsworth, & Hartern, 2011). Berko et al. (1989) emphasized the series of actions in sending the information, feelings and ideas. Person et al. (2011) highlighted this as using messages to generate meaning. This meaning may parallel to the statement of Berko et al. (1989) on mutual understanding and connectedness of two conversing partners. Person et al (2011) noted communication as dynamic and active. This may be elaborated by looking into the different components of social communication. Social communication is the use of language in social contexts that includes social interaction (American Speech-Language-Hearing Association, n.d.). It is also defined as communicating and engaging in conversations (NHS Worcestershire Health and Care, n.d.). In a conversation, Person et al. (2011) noted the importance of messages in order to draw meaning delivered through messages as verbal and nonverbal symbols, signs, and behaviors. This is similar with the description of Loftin, Odom and Lantz (2008) definition of messages which are verbal and non verbals [sic]. Positive peer interactions in childhood advantageous to children in order to establish and improve friendships in their socialization with others (Biggs, Carter & Gustafson, 2017; Hadley & Schuele, 1998) For its effectiveness, Battaglia and Radley (2014) proposed a careful selection of peers to match the specific deficit of children with special needs.

### **1.2.1. Skills in Social Communication**

The beginning and ending of a social interaction is marked by interaction begins, interaction continues and interaction ends (Jones & Schwartz, 2009). This can be done by the following social communication skills such as initiating, responding, maintaining and ending a conversation. Danby, Thompson, Theobald and Thorpe (2012) noted the importance of understanding or having social knowledge as there are many aspects involved in building relationships.

#### **1.2.1.1. Initiating**

Beginning an interaction can be through initiating. Stanton-Chapman, Kaiser, Vijay and Chapman's (2008) study showed initiating were frequently more evident than the remaining social communication strategies. In an ongoing conversation, initiation is distinguished when the utterance was made after a minimum 3-second pause after a peer's previous statement (Spohn, Timko & Sainato, 1999; Thiemann & Goldstein, 2004). Requesting attention can also be made in initiating. In the study of Thiemann & Goldstein (2004) securing attention means indirectly requesting attention or acknowledgement from peers (e.g., "Hey!" "See this?" "Look"). Craig-Unkefer et al. (2002) identified this as requests – yes-no questions, which are requests that require acknowledgment response (e.g., "Did you see that?"). Calling the name of the peer or tapping a peer on the shoulder are also examples (Thiemann & Goldstein, 2004).

### **1.2.1.2. Responding**

Response is a verbal statement related to some prior initiation and served to sustain the topic of conversation (Spohn et al., 1999). An indicator of response is a contingent utterance. Some examples are simple contingent, back channel, fillers and compliments. Simple contingent was defined as an immediate utterance without additional information, typically a response to a question or “personalization” (e.g., “I have a green house; mine is blue.”) (Mathinos & Wypych, 1988) while a back channel response is an agreement to what was previously uttered and used as a mechanism for not taking a turn (Turkstra, Ciccia, & Seaton, 2003). Fillers, false starts and compliments are defined in the previous section. Another kind is an elaborated response, defined as giving an on-topic response to the partner’s question and expanding by adding relevant on-topic information. This is for the purpose of maintaining a conversation (Koegel, Park & Koegel, 2014; Mathinos & Wypych, 1988). Mathinos and Wypych (1988) defined this as contingent response with expansion wherein the utterance goes beyond the minimum expected response by adding information about the topic. On the contrary, reject is different. Reject is a refusal to acknowledge a *bid* or doing the opposite of what was asked even though it was clearly heard. Often, it is in a nonverbal form. Ignore is ignoring the initiator and not doing what was asked. Ignore or no response on the other hand is when there is no response from the partner even though it was heard and a statement was uttered with a new topic (Jones & Schwartz, 2009).

### **1.2.1.3. Maintaining Conversation**

Maintaining conversation is described as reciprocal conversation with another peer or group of peers with knowledge of the topic (Sansosti & Powell-Smith, 2006). Krebs, McDaniel, & Neeley (2010) included the importance of maintaining eye contact or directional gaze, maintaining close proximity to peer while interacting, directing or initiating conversation with the peer and maintaining the topic while keeping the conversation going. Commenting can be done to provide opportunity to continue the interaction by giving statements connected on events that happened during the interaction (Jones & Schwartz, 2009; Morrison, Kamps, Garcia, & Parker, 2001; Stanton-Chapman & Brown, 2015) (e.g., “This game is hard, right Erin?” “Melissa, I have this game at home.”) (Morrison et al., 2001). It can be by giving personal observation (e.g., “Sammy is in kindergarten”) (Jones & Schwartz, 2009). An on-topic comment can be an utterance about the topic but is not contingent on the preceding utterance which often happens when the interaction is shifted to a new sub-topic or theme (Mathinos & Wypych, 1988). While effective commenting indicates engagement between the conversing partners, the lack of commenting shows ineffective turn-taking skills (Jones & Schwartz, 2009). Another way to maintain a conversation is by asking a question. Reciprocal *question-asking* was defined as asking a question that was related to a previous response or initial question by the partner (Koegel et al., 2014; Peters & Thompson, 2015). Peters and Thompson (2015) considered using questions to regain interest if the conversing partner lost the interest. It also gives the conversing partner to have the floor in the conversation. In maintaining a conversation, changing topics can be done. It can be by making a statement regarding something different by giving compliments (Peters and Thompson, 2015). Another way is through an utterance that is not contingent on a peer’s previously mentioned statement (Thiemann & Goldstein, 2004). An example is asking an off-topic question which opens possibilities for an alternative topic of interest (Peters & Thompson, 2015). Acknowledgement can also be used. It is referred as with a turnaround. It is similar to acknowledgement but the *bid* elaborates the same theme, or a new conversation may start (Jones & Schwartz, 2009). Peters and Thompson (2015) identified this as acknowledgment to change the topic for the purpose of making possibilities for the partner to become more

interested. It is not intending for the speaker to own the floor. Reject with turnabout is a refusal to acknowledge but offers another *bid* that elaborates the same theme or starts a new interaction (Jones & Schwartz, 2009).

#### 1.2.1.4. Ending the Conversation

In contrary to maintaining a conversation, no further interaction made despite a response given means end of the interaction with an indicator of 5 seconds wherein no response is made (Jones & Schwartz, 2009). Non-examples of ending the conversation are walking away from an ongoing conversation and not responding to his or her name being called by another peer (Sansosti & Powell-Smith, 2006).

*Table 1. Conversation Skills and The Descriptions*

Skills	Descriptions
Making a conversation	1. Go up to a person 2. Say "hello" 3. Smile 4. Listen to what the person says 5. Respond
Turn-taking	1. Pay attention 2. Wait until the person pauses 3. Say something in return
Listening	1. Keep quiet 2. Listen to what the person says 3. Look at the person
Maintaining a conversation topic	1. Listen carefully 2. Think about what the person says 3. Talk about the same thing
Changing a conversation topic appropriately	1. Keep quiet and listen carefully 2. Wait until the person pauses 3. Say, "Let's talk about something else." 4. Let's talk about _____.

Source: Hsiao & Bernard-Opitz, 2000

Various studies have also used breaking down of skills into steps in order to teach social communication as an intervention. (Beilinson & Olswang, 2003; Brinton, Robinson, & Fujiki, 2004; Koegel et al., 2014; Laugeson & Park, 2014; Spohn et al., 1999; Stanton-Chapman & Brown, 2015).

#### 1.2.2. Social Communication Difficulties of Children with AD/HD

There have been evidence that children with AD/HD have communication related problems. Looking at Table 1, it would seem that some areas such as making a conversation and maintaining a conversation point to additional areas such as responding, aggression, pragmatics and attention.

### **1.2.2.1. Responding**

One of the common difficulties of children with AD/HD is how they respond during conversations. In an assessment by Mikami, Huang-Pollock, Pfiffner, McBurnett, and Hangai (2007) using novel computerized chat room task, with computer-simulated peers, participants were encouraged to converse by typing messages. Interaction was done by freely responding to four computer-simulated peers. Children with AD/HD-inattentive type produced the fewest number of responses and the least memory of conversation. They do not participate or do not attend to the conversation due to their poor memory in conversation content. This type of children are slow-to-warm up, and commonly withdraw at first but may join after watching their peers. AD/HD-combined type gave more hostile responses. Both groups show that responses are off-topic in nature. This is similar to a personal conversation, a video analysis Blomqvist, Augustsson, Bertlin, Holmberg, Fernald, Dahllöf, & Ek (2005). Children with AD/HD were compared to a control group and it was revealed that they had more missing and fewer verbal responses. The interaction showed by children with AD/HD was less two-way communication.

### **1.2.2.2. Aggression**

Problem with aggression and impulsivity were also observed in their conversations. According to Grskovic and Zentall (2010), girls with AD/HD were more verbally impulsive and hyperactive. They were faster in conversations and school related activities. DuPaul, Weyandt, and Janusis (2011) explained that children with AD/HD compared to their classmates responded in an aggressive manner when dealing with interpersonal problems. They raised the need to implement interventions that address peer relations to avoid these communication issues.

### **1.2.2.3. Maintaining conversation**

When it comes to maintaining a conversation, problems are also exhibited. Children with AD/HD have problems with associative control that allows to maintain a conversation by giving relevant statements in a conversation. For a child with ADD or AD/HD, free and erratic ideas are stated in the conversation (Vinson, 2007).

### **1.2.2.4. Pragmatics**

Not only in the communication in general but, different researches have also shown that most AD/HD cases have problems in social communication pragmatics. Literatures state that children with AD/HD commonly possess poor pragmatic skills.

They typically do not respond to environmental cues that serve as regulators for pragmatic interactions with other individuals. They frequently ignore social rules, which further impedes their social adaptations and can result lowered self-esteem owing to the lack of friends. Therefore, it is important to assess the child's pragmatic skills, looking at sub areas such as topic maintenance and topic switching. (Vinson, 2007, p. 308)

Geurts (2010) showed studies that present pragmatic language problems in children with AD/HD. A pile of studies presented by Green et al. (2014) also confirmed that children with AD/HD match in terms of pragmatic language impairment that includes excessive talking, poor conversational turn-taking, and lack of coherence and organization in elicited speech.

Geurts and Embrechts (2008) noted that there are similarities between school-aged children with ASD and AD/HD in terms of language profile. More problems in pragmatics are shown rather than in language structure. Green et al. (2014) added that pragmatic language abilities should be included in the clinical assessment and a focus for intervention since pragmatic language ability is crucial in social and academic functioning of these children.

#### **1.2.2.5. Attention**

In terms of attention, Rasha, Asmaa, Abdel, Amr Abdel, Omnia Raafat, Akmal, & Hany (2013) concluded that impairment in intentional communication is because of their short attention span. According to them, these communicative intentions and engagements relies on shared attention to an object, topic or person, initiating verbal exchanges and responding to initiations by others.

#### **1.2.2.6. Figurative Language**

Bignell and Cain (2007) mentioned that children with poor attention and those with poor attention with high hyperactivity showed impairment in comprehension of figurative language and communication skills. However the study affirmed that there was no impairment in communication for high hyperactivity group.

### **1.3. AD/HD and Computer Technology**

Computer technology can be a solution for difficulties of students with AD/HD pertaining to academic, behavioral and social problems. In their review, Xu, Reid and Steckelberg (2002) grouped the different researches that show variety of applications of computer technology to AD/HD as follows: computer-assisted instruction, computer-based training, biofeedback training, assessment and behavior modification. Applying virtual reality in cognitive training showed better results. Using the training to subjects with social and behavioral problems but not formally diagnosed with AD/HD, cognitive training with the use of HMD and headtracker showed effectiveness in sustaining attention and they distinguish target stimuli more sensitively. (Solomonidou, Garagouni-Areou, & Zafiropoulou, 2004). Drigas and Tourimpampa (2014) noted that given multimedia applications results ease in AD/HD investigation, evaluation of its efficacy still remains challenging for researchers when applied to assessment, intervention and training of attention.

### **1.4. Virtual Reality**

Virtual reality is an environment or computer-simulated physical space which is replicated by information technology. Interactions are described in computer-mediated social space (Virtual Reality, 2008). The immersion happens in an artificial image or environment, which seems real. It projects actual situation that gives the user a feel of a real experience. It provides an experience where the user encounters a more dynamic way of interacting (Aikat, 2007).

In the 1980's, VR was popularized by Jaron Lanier, its proponent. However, the name, "virtual reality" was not yet determined (Sala, 2009). The recognized pioneers were Myron Krueger and Jaron Lanier who introduced it even though there was an evolution of this concept. In a 1965 paper, "The Ultimate Display," Ivan Sutherland introduced the fundamental concepts of virtual reality. He envisioned that computer is a "looking glass to a mathematical wonderland." This signifies that functions of objects will not abide in accordance to nature's

physical properties. Even though, the occurrence is an entire sensory experience that includes all the senses (Virtual Environments, 2008). At present, virtual reality it is widely used as its applications assist the needs in the different fields with more developed features. Freina and Ott (2015) described the evolution of virtual reality where modes change into something close to the real physical world.

There are classifications of VR based on its methods of display. The first one is the Immersive VR which is described as a high degree of interactivity. This includes high cost peripheral devices. One example is the head mounted display. This method uses an avatar which can be in a form of three-dimensional model. This virtual body represents the user (Sala, 2009). The Cave Automatic Virtual Environments (CAVE) uses a room with walls and the floor to display the replicated environment. The user wears 3D glasses which helps him to feel floating and move freely. The Head-Mounted Display (HMD) with headphones helps to create an inward feeling of being in the artificial environment (Freina & Canessa, 2015). The second type of virtual reality is non-immersive VR or the “desktop VR.” The computer monitor displays the environment which serves as the window into a virtual world (Sala, 2009). Both immersive such as a CAVE-like environment and or non-immersive, such as desktop-like displays’ primary aim is to reproduce an imitation of a real environment (Romano, 2005).

Virtual reality can be described as distinctive from other mediums of communication. This human-computer interactions offer qualities such as engagement, immersion, or presence. There is a sensation described as the real experiences in the real environment are similar as replicated in the virtual. This characterizes a successful virtual environment (Virtual Reality, 2005). These can be postulated as primary features VR experience.

VR is always attached with the term “immersion” which is also called “spatial immersion,” the perception of existing in the non-physical environment. Because of the images, sounds and other stimuli, they create an effect of being present in the absorbing environment. Spatial immersion takes place when the simulated world is convincing and looks genuine and authentic. The effect is perceiving that the user is really there in the artificial environment (Freina & Canessa, 2015). Robie and Komar (2007) describe this feature as telepresence. It is the feeling of being present in the computer-generated environment while the user is immersed in the multisensory environment. Telepresence takes place when the user is completely focusing in the virtual world and ignores the idea of having a human-computer interface. The perception of being present in the simulated computer environment is also termed as presence. A universally accepted meaning of presence has not yet been established, however, the descriptions are all directed towards identical conceptions. In consideration of the design and evaluation of a computer-mediated products and interfaces in the wide range areas such entertainment, education, and telecommunication, presence has already been the primary component in the study of virtual reality (So-Yeon & So-Hyang, 2010). Presence in virtual reality is a phenomenon. The virtual environment is a place that is fictitious however it creates an illusion. There is an awareness that the events, what is seen, heard and felt are all artificial however, the user behaves and feels as if incidences really are occurring (Sanchez-Vives & Slater, 2005). In their study on computer games Scoresby and Shelton (2011) stated that the visual and audio aspects greatly contributed to the feeling of presence however presence can be conditional. Those with higher level of immersion, its multimedia feature affect the motivation of users and captures attention for the users (Sampaio, de Freitas, & Cardoso, 2009). Sanchez-Vives et al. (2005) enumerated the contributors to presence: visual realism (graphical representation of the environment), sound, haptics (the sense of being with another person in a virtual environment), virtual body representation and body engagement (includes body movements). According to Chow (2016), presence is determined depending on how well we are connected to or involved in a virtual world. On a different note, Scoresby and Shelton, (2011) perspective of presence is

not only confined in the fully immersed experience. Whether the user is engaged in a real environment, a virtual or a mixed-reality, the user may also be at the level of presence. This means presence manifests in different kinds of environment, real or virtual. It is pertinent that this feature of virtual reality can be maximized depending on appropriateness of application, any simulation whether virtual or a real one.

In application to education, there is evidence that feeling present in virtual environment is one of the factors that aids effective learning (Chow, 2016). A number of studies documented results that show virtual reality is exciting and challenging as perceived by students, for activities that allow them to walk through and interact with the environment and create their own world (Pantelidis, 2009). The interactive graphic technology and the lucidity of sounds can be attractions to children with AD/HD. Because of the feature, presence has been an interest of psychologists (Sanchez-Vives & Slater, 2005). Moreover, not only in the field of psychology, attentions have been drawn to the study of presence from in computer science, psychology, and communication as virtual reality technologies are progressing (So-Yeon & So-Hyang, 2010). Due to the different features of virtual reality, including presence, it provides many advantages both in education and therapies.

#### **1.4.1. Advantages of Virtual Reality and its Educational and Therapeutical Applications**

Virtual reality has been widely used in the different fields of study. It offers features that have been utilized in the military training, training pilots, in the medicine, engineering and numerous studies affirm of its advantages in the variety of fields. It is because the immersion can be described as effective while the interaction and control of the virtual world is dynamic (Aikat, 2007). With this feature, it is therefore, beneficial if maximized as a tool in education.

According to Psotka, (2013) we are in the age where the use of VR environments, games and entertainment offer creative output and a new Renaissance in learning. In line with this, the use of VR in education has naturally evolved (Pantelidis, 2009). The properties of VR may be utilized as it offers propitious benefits. Freina and Ott, (2015) stated the advantages of using of immersive VR in education. It greatly benefits those practices and trainings that are too risky and dangerous. In this manner, the exposure towards crucial components in the training is not compromised. Those events that are not feasible to conduct are still possible through VR. Learning occurs by participating and doing in the virtual worlds (Chow, 2016). Avatars can be used to perform learning activities that are not feasible in the real world. The gaming approach targets the learner's involvement and motivation as well. It also offers support as different learning styles are seen through virtual experiences (Freina & Canessa, 2015). With the accessibility of computers and Internets by teachers and students, online education has become a preference in education. Virtual reality serves best by utilizing collaborative learning environments combined with multimedia (Monahan, McArdle, & Bertolotto, 2008). When compared to traditional face-to-face conversation or videoconference, virtual environment with manners such as verbal and nonverbal with the real-time and multi-user environment is engaging and cost-effective (Tapsis & Tsolakidis, 2015).

A very effective application of virtual reality application is in therapy and people with special needs. With stimuli modified in a controlled virtual environment fit for therapeutic gains, patients are stimulated to respond parallel with real-life. This may be done to whatever types of virtual reality, immersive or non-immersive. Motivations are found from the amusing features of the virtual environment. This results to engagement and compliance to the therapy (Romano, 2005). A controlled environment can be created in the virtual world which is critical to any

therapies. (Hadley, 2011). The most common application of virtual reality is in communication. It lessens communication apprehension anxiety and increased self-confidence. Engagement in their interactions and presentation were shown (North, Hill, Aikhuele, & North, 2008). Comparing interactions using face to face online communication and VR, those who manifest shyness had decreased communication apprehension using VR (Hammick & Lee, 2014). It is also effective for patients with anxiety. In a study conducted, after three months of interaction sessions in VR, lower levels of anxiety were recorded. It confirmed how effective its application is for social interaction therapies (Morina, Brinkman, Hartanto, Kampmann, & Emmelkamp, 2015). According to Riva et al. (2007) it is a very effective interaction medium. Interaction done in an anxious environment creates anxiety, on the other hand, relaxation is drawn from an environment that is relaxed. Using virtual reality role-plays for those with schizophrenia, conversational and assertiveness may show progress (Park et al., 2011). Addressing communication problems, according to Garcia, Rebolledo, Metthe, and Lefebvre (2007), interventions with the use of VR can treat aphasia and other cognitive-linguistic impairment of adults. This may assist also those specializing on deaf as it addresses difficulty in hearing (Zirzow, 2015). To add more in special education application, in VR, a specialized environment can be created for children with disabilities who have limited opportunities in the real world. The manipulation stimulation would allow these children to do specific activities (Reid, 2002). Using VR for social interaction training, the result shows that there were developments in responding, initiation, greeting, and positive conversation-ending which showed improved social competence in children with high functioning autism (Ke & Im, 2013). The study of Didehbani, Allen, Kandalaft, Krawczyk, and Chapman (2016) showed that autism spectrum disorder had improvements on their social skills through VR. This indicates that it may affect their emotion recognition, social attribution and executive function of analogical reasoning. It is proven that the different features of VR have been maximized in the different fields, on the other hand, there are also noted drawback of using this application.

#### **1.4.2. Disadvantages and Dangers of Virtual Reality**

Despite the many advantages and efficacy of VR, there are expected downsides to this technology. For immersive type of experience, the cost of the facilities are too costly. The CAVE-like equipment is very expensive (Romano, 2005). The technology is restricting to a lot of facilities (Reid, 2002). Using the VR equipment for a long time also causes VR sickness, the feeling of vertigo, motion sickness, flashbacks, spontaneous seizures, excessively nervous and antisocial behavior (Romano, 2005). A more accessible type for immersion is the use of HMD which according to Freina and Ott (2015) is also tiring and causes sickness to some learners. For activities that allow students to manipulate and create, there is a need to be familiarized and learn the software which will require time and mastery (Pantelidis, 2009). In application for students with special needs, a lot of researches have been published on how it can teach social skills to those with autism spectrum disorder, however, there are found studies that tell the inability to generalize the learned skills obtained from virtual environments in real-life social situations in K-12 settings (Vasquez III et al., 2015). For using virtual worlds for training like medical, drawing clinical learning and practice can still be limited. Because of a big number of students who are participating, it requires longer amount of time for students exposure to patients, emphasis on patient safety, medical errors, ethical considerations, pandemics; and crisis situations (Chow, 2016).

VR games have drastically attracted the interest of many computer users. A longitudinal analyses showed that teamwork and computation-oriented motives are precise contributors to its quick progression in a game. However, link between problematic use and certain motives like

advancement and escapism have been shown (Billieux et al., 2013). Users need to be mindful of other effects that may result like computer addiction due to prolonged use of VR specifically games oriented. There were also results that show excessive games playing (ECGP) that may be connected to cognitive deficits (Sun, Ning, Min, Chen, & Zhang, 2008).

The massively multiplayer online role-playing game and other environments intended for collaborative communication allow different individuals to access the virtual environment in real-time to hold live conversations and chat. This may be vulnerable to online stranger dangers. Parents are in the best place to protect and monitor children's usage of these applications (Willett, 2015). Internet use is one considerable element in VR applications. Because it is an online activity, there are also studies that show there are users who manifest Internet addictions. There is a prevalence rate between 1.5% and 8.2% survey in US and Europe (Weinstein & Lejoyeux, 2010). Internet addictions are linked to other complications. There is a connection between Internet addiction and affective temperament profiles, especially with anxious temperament. In addition to this, more emotional and behavioral problems occur in adolescents who have problematic Internet use (Ozturk, Ekinci, Ozturk, & Canan, 2013). Reports have shown that Internet addiction is comorbid with other psychiatric disorder, especially affective disorder that includes depression, anxiety disorder (generalized anxiety disorder, social anxiety disorder) and AD/HD (Weinstein & Lejoyeux, 2010). For users with AD/HD, Internet addiction in adolescents shows more impulsivity. They have several comorbid psychiatric disorders seen which can be connected to psychopathology of Internet addiction (Cao, Su, Liu, & Gao, 2007). It was suggested that AD/HD symptoms such as inattention and hyperactivity and hyperactivity-impulsivity domains were linked to Internet addiction severity in children. It can be risk factors of Internet addiction, since AD/HD group was seen with higher Internet addiction scores than non-AD/HD group (Hee Jeong et al., 2004). In adults with AD/HD, the most associated symptom of Internet addiction is deficit in attention, second is impulsivity in adults. It is more significant among female college students (Ju-Yu, Cheng-Fang, Cheng-Sheng, Tze-Chun, & Chih-Hung, 2009). The Internet as well is very prone to cyberbullying. A study of students with AD/HD by Heiman, Olenik-Shemesh, and Eden (2015) showed that girls were more cybervictims than boys, on the contrary, boys were more involved with cyberperpetrators than girls.

#### **1.4.3. Edorble**

It is created as a 3D virtual world to best serve online learning, meeting and webinars with its mission to create a more personal, playful and powerful online learning environment for personal computers, mobile devices and virtual reality headsets. It is a multi-user virtual environment (MUVE) that fosters synchronous communication and online learning that will suit the needs of teachers (Baker, 2015).

#### **1.5. Role-play**

Role-play is very known for its effective way to impart learning because simulation is one of its distinctive attribute. According to Lazar (2014), it gives students an experience that can be defined "almost real" and it can enhance group work practice. Role-playing is an experience outside the classroom. It is an effective strategy where students can be brought in another place or time. Learning is established in scenarios that are believable and the response of participants are necessary in their roles. Simulation takes place with complex interpersonal

interaction. This is where valuable lessons are drawn, not just to teach a topic, but more on how it can be used and how other participants may respond to it (Fanning, 2011).

“Role-play is a type of communication. Like other means of communication, it can be used for messages, expressing or arousing emotion, negotiation and persuasion, or for a variety of other purposes” (Van Ments, 1989, P. 51). Play is a component because students are in “inventive and playful as possible” in partaking their roles (Ladousse, 1987, P. 5). “Engagement to each other through roles” (Tolan and Lendrum, 1995, P. 26) is its distinctive characteristic that makes it effective to teach communication.

Role-playing has been widely applied in the different teaching or training fields. Using role-playing as an approach to affective education, Gumaer, Bleck, and Loesch (1975) mentioned that it helps students in understanding themselves and their classmates more. In teaching legal ethics in law schools, Schrag (2009) noted that role-playing exercises give meaningful ethics instructions concerning doctrinal courses. Role-playing was also used in an English classroom that utilized the teaching tool called “cultural and political vignettes.” Imaginative or situational problems were posed as students were asked to respond by role-playing. In this way, they practiced creative and essential decision-making skills which are essential in the classroom and communities. This may also help in addressing student’s specific need (Darvin, 2009). Through mock interactions, students learned social psychology and ways to address social problems (Plous, 2000). Kipper (1988) stated that in psychotherapy, the use of role-playing is in the area of skill development, one example is social skills.

Role-play is also used to teach content lessons. Resnick and Wilensky (1998) applied it as activities in mathematics and science to aid students in exploring behaviors of complex system in order to develop better intuitions on how complex phenomena can arise from simple interactions, and predictable patterns from random events. Harth (1966) used role-play in the character as school personnel to show that there is a positive transformation in the school behavior, reaction to frustration and attitudes toward school. He also mentioned of the positive effect towards literacy skill such as speaking, writing and listening of having the art of drama in the classroom. When used in teacher-centered discussions and lectures, their study showed better result in evaluation for those who participated in the role-play and collaborative exercises than those in the group of traditionally instructed peers (McCarthy & Anderson, 2000).

Craciun (2010) mentioned that fusing role-play can boost motivation in learning and can actively and consciously engage learners. It can allow the teachers to be aware of the student’s temper, learning style and intellectual level. It helps in evaluating what has been learned. Role-playing is also described as interesting, fun and makes learners interact. Skills that are hard to develop using traditional teaching strategies like responsibilities and leadership in learning, peer learning/teaching, group work, confidence or creative problem solving can be targeted and may result progress in this method. Balch (1983) used role-playing in a therapy situation, where audience and participants had more direct emotional dynamics. He explained that enthusiasm and class participation arise when students are included in an actual demonstration. In this manner, the students volunteer to participate in roles in front of the class. As enumerated above, role-play is a very useful strategy that does not only enhance academic, rather it is effective to teach communication and train interpersonal skills as well. One factor that may create a meaningful role-play experience is incorporating explicit instruction in the strategy.

## 1.6. Explicit Instruction

Explicit instruction is distinguished for providing different sequence of supports or scaffolds. In this manner, the learner is guided as he goes through the learning process with coherent statements on purpose and rationale on learning the new skill, concise explanations and demonstration, guided practice along with feedback until mastery has been attained with self-sufficiency (Archer & Hughes, n.d.). Another term for explicit instruction is explicit direct instruction, defined as a collection, where different instructional strategies are integrated (Hollingsworth & Ybarra, 2009). Systematic is also synonymous to the term. Smith, Sáez, and Doabler (2016) used the term explicit and systematic teaching which is an evidence-based execution of lesson where the strategies incorporated are best to enhance the working memory of students. The structure on how tasks are sequenced, leveled and executed may affect the working memory to perform initial tasks. In this fashion, it may be beneficial to students with learning disability despite their condition of difficulty to handle overload of instructions.

Components of explicit direct instruction are: learning objective, activate prior knowledge, concept development, skill development, lesson importance, guided practice, lesson closure, independent practice, checking for understanding, explaining, modeling and demonstrating (Hollingsworth & Ybarra, 2009).

Madeline Hunter's direct instruction model (Bushman, 2004) contains essential elements in delivering the lesson. The sequence of giving the lesson is as follows: (1) teacher initiates anticipatory set; (2) teacher determines objective; (3) teacher gives input; (4) teacher models; (5) teacher checks for understanding, (6) teacher guides practice; (7) teacher assigns independent practice; and (8) teacher offers closure (Steiner & National Council of Teachers of English, 1993).

## 2. Methodology

### 2.1. Methods

The study examined the effects of VRRP on social communication skills of children with AD/HD. VRRP was an intervention that aimed to teach social communication skills such as initiating, responding and ending the conversation using Edorble, a 3-D software.

Initiating skill included sub-skills or steps such as approaching by walking towards the person or peer, greeting the person or peer, calling the person or peer by name, waiting quietly for the person or peer to finish his or her response, uttering the statement not later than 3 seconds after the person's or peer's response, initiating by giving information or asking a question, giving information or asking a question in context, using appropriate words or statements and speaking in a friendly manner or with appropriate voice.

Responding skill included sub-skills or steps such as waiting quietly for the person or peer to finish his or her statement, responding not later than 3 seconds after the person's or peer's utterance, uttering an on-topic response, using appropriate words or statement and speaking in a friendly manner or with appropriate voice.

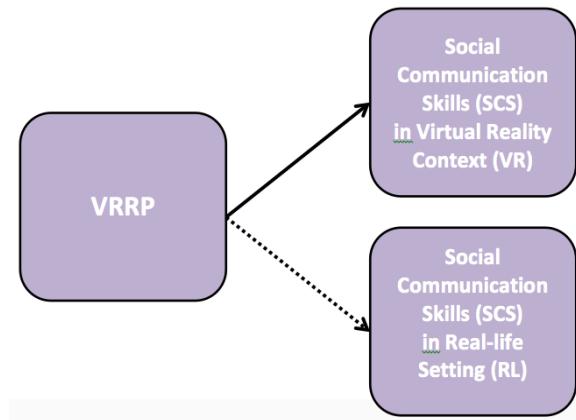
Ending the conversation included sub-skills or steps such as waiting quietly for the person or peer to finish his or her response, uttering the statement not later than 3 seconds after

the person's or peer's response, uttering a statement that ends the conversation, using appropriate words or statement and speaking in a friendly manner or with appropriate voice.

Social communication skills were taught by following the components in an explicit instruction lesson design by Madeline Hunter. A teacher was facilitating the lesson side by side with the child with AD/HD. The major features of VRRP was conversations modeled by playing a clip that showed two conversing partners in 3-D avatar forms talking to each other. Incorporated in their conversation was the sub-skills or steps of each social communication skill. To practice the skill, series of role-plays were done by conversations between the participant with AD/HD and the virtual peer in the 3-D world. Each conversing partners were in avatar form and participated in the role-play activities with provided support such as a script with a complete written dialogue flashed on the multimedia screen in the virtual world. Decrease of support was done by taking away the written dialogue of the child in the second and third role-plays. The last role-play was the evaluation conducted without a script on the screen to determine if the child was able to learn the skill.

The effects of VRRP in social communication skills were determined by measuring the skills in the last role-play in the VR context. It was also explored in the RL setting by observing the child in his natural environment in the SPED class mostly during recess. Other settings included during self-care activity, book activity and circle time.

*Figure 1. Conceptual framework. The figure shows a diagram that illustrates the effects of virtual reality role-play on social communication skills of children with AD/HD*



## 2.2. Design

The study used a mixed methods design, a quantitative and a qualitative research that investigated the effects of virtual reality role-play on social communication skills of children with AD/HD. It is a quantitative study as the social communication skills of the participants were measured using a Social Communication Score Scale. Each participant was observed in two contexts such as virtual reality sessions and real-life setting. A camera was used to record the observations. By watching the recordings, all social communication skills observed in all opportunities were rated using the SCSS. Each skill in the scale was composed of sub-skills wherein each one was given a score. The sum of these scores were computed. 1-3 opportunities with the best total scores were chosen for the computation of the average that was plotted in a graph for VR and RL for visual presentation. The scores per sub-skill before

intervention and after intervention were also compared to determine the social communication skill of participants after the intervention.

The study is qualitative. Field notes were used to write down observations in the VR and RL. A recording camera was used to capture the observations in both settings. While watching the video recordings, patterns of behaviors, activities and events were noted down.

### 2.3. Participants

The following criteria were set to purposively choose the participants of the study: children diagnosed of AD/HD who were enrolled in a school, age group ranging from 8 to 12 years assuming that children who belong to this age group could easily learn to manipulate a computer. Having comorbid disorder could be included, however, they must not be undergoing speech therapies or medication that treat attention or behavior to control variables. Profiles of children were generated from the special education department of the school and were referred by the SPED coordinator. A list of six children diagnosed of AD/HD with indicated ages and SPED programs was prepared and provided by the SPED coordinator. Upon checking the list, only three children qualified as participants of the study. With their parents' approval, the participants' profiles and present skills or problem areas written in their Individualized Education Program and Progress Report were reviewed by the researcher.

The study was conducted in a private school in the province of Rizal. Although it offered regular classes from K-12, the participants were students in the school's SPED classes. Table 2 shows the profile of the selected participants.

*Table 2. Profiles of the Selected Participants*

Name*	Age	Gender	Diagnosis	Program
1. Gabriel	9 years old	Male	Comorbid AD/HD and ASD	SPED primary class with mainstream to grade 3 English
2. Nehemiah	9 years old	Male	AD/HD	SPED primary class
3. Jeremiah	11 years old	Male	AD/HD	SPED class with modularized regular curriculum

*Note. \*Participants' names have been assigned pseudonyms for confidentiality*

### 2.4. Instruments

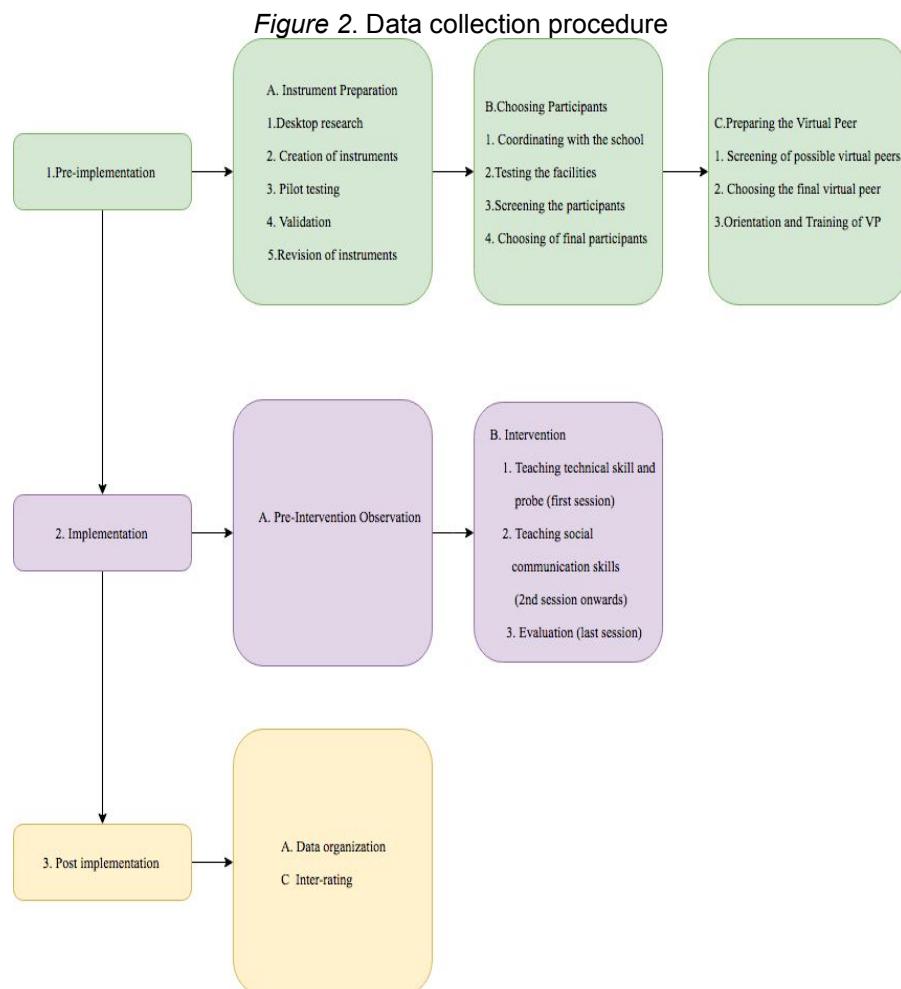
Video Camera Recorder was used to record all activities during observations in all VR sessions and in the RL setting of each child. A free trial version of Capto application software was used to for recording the screen during VR sessions. Social Communication Score Scale developed to measure three social communication skills such as initiating, responding and ending the conversation. Each skill was comprised of sub-skills or steps and validated.

Mann-Whitney U Test was used to measure the test of association while Cronbach's alpha to measure reliability of instruments. Each social communication skill was task analyzed to identify the sub-skills or steps. Each sub-skill was quantified by a weight or a score. The sum of the scores of all sub-skills is computed to determine the score of one communication skill per opportunity. For each observation, all opportunities that showed the social communication skill were rated as retrieved from the video camera recording. Average was obtained from three opportunities with the best scores. Average was computed for the purpose of analyzing the skills using a graph.

Field notes were used in all observations in VR and RL for the researcher to write down instances that showed the child's social communication skills or other relevant behaviors pertaining to social communication skills. Lesson Plans were developed using Madeline Hunter's Lesson Design and validated. Included in the lesson plans were the purpose of the conversation, social communication skill to learn, concepts to learn Context and topic were indicated.

## 2.5. Procedure

The data were collected in three phases: pre-implementation, implementation and post implementation.



Pre-implementation phase included stages such as instrument preparation which includes desktop research, creation of instruments, pilot testing validation and revision; choosing participants included as coordinating with the school, testing the facilities, screening the participants and choosing of final participants; and preparing the virtual peer which included screening, choosing the final virtual peer, and orientation and training.

Implementation phase included pre-intervention observation wherein the participants were observed in the RL. Field notes were used to record their behavior and social communication skills. During intervention teaching materials were prepared and communicated with the virtual peer using Messenger application daily. In preparing for VR sessions, the equipment was set 45 minutes before the first session. This was a time allowance in anticipation for possible technical difficulties and to avoid delays. Daily observations were done using Field notes in RL setting and after the VR sessions. The camera was used for both settings. The intervention was comprised of teaching the technical skills and probe, teaching social communication skills and evaluation.

Post implementation included data organization. The researcher watched all the video recordings to rate all opportunities wherein each social communication was demonstrated. All opportunities were rated using the SCSS. The time the opportunity started and time it ended in the video recording was written as references to which part of the recordings the conversation occurred. The sequence of rating the social communication skills was in VR then in RL settings. The researcher chose one to three opportunities with the best scores for each session in VR and for each day in RL.

The Field Notes were completed by watching the recordings and writing the narrative observations focusing on social communication skills, frequent behaviors of the child and the context of those incidents. Inter-rating was done by preparing the rating sheets for the inter-rater. The best opportunities chosen was indicated in sheet through the time it started and ended in the recorded video.

## 2.6. Data Analysis

By watching the recordings, the social communication skills were measured using a Social Communication Score Scale. 1-3 Opportunities with the best scores were chosen for both contexts. Inter-rating was done to determine the reliability of the researcher's ratings. Average score was computed based on those opportunities chosen for each session in VR and each day in RL. The average scores were plotted on a graph to visually analyze each skill. Different parameters such as level, trend (slope), and variability in each graph was analyzed to determine the effect of VRRP during intervention.

The study is qualitative as based on the recordings, field notes were completed. Patterns of behaviors were noted and themes emerging from these patterns were studied. These patterns supported the scores obtained from the SCSS in both contexts.

## 2.7. Findings

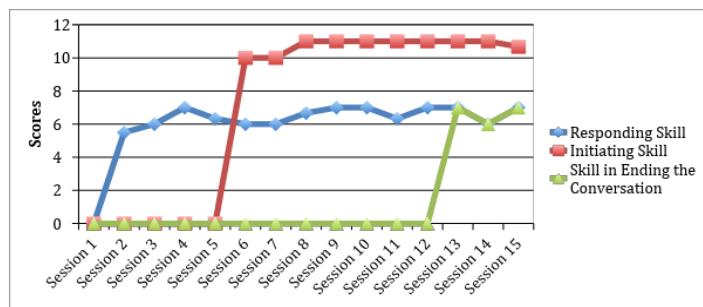
The effect of the VRRP on social communication skills of children with AD/HD, specifically in initiating, responding to, and ending the conversation, was most seen in the length of the reciprocal conversation that emerged in the VR. There were no indications that the VRRP had

an effect in RL of the three participants as same patterns of social communication displayed during intervention. The difference may stem from the number of opportunities the more structured VR environment offered for practice. As the participants became more familiar with the process of conversing in VR, they were keener on responding to verbal cues and the body orientation of the avatar, as such longer reciprocal conversations were observed.

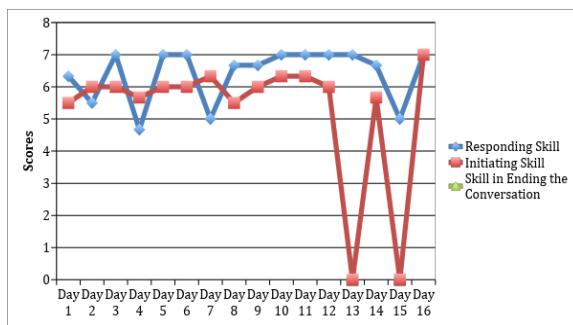
The effects on the participants were varied. The participants, namely Gabriel, Nehemiah, and Jeremiah were observed during virtual reality role-play (VRRP) intervention in the VR context and in real-life setting. The duration of the VRRP intervention was approximately 15-30 minutes. Each session followed the stages of Madeline Hunter's Lesson Design where the role-play in independent practice served as the evaluation. In the independent practice, social communication skills were measured and the opportunities with three best scores were plotted in the graph. On the other hand, the real-life setting was observed for 15 minutes each day. The opportunities with three best scores were plotted in the graph as well.

VRRP covered three SCS in the following order: responding, initiating and ending the conversation. Below are the graphs that describe Gabriel, Nehemiah & Jeremiah's social communication skills during intervention in virtual reality and real-life contexts:

*Figure 3. Social Communication Skill of Gabriel in VR context. This graph shows initiating, responding and skill in ending conversation of Gabriel in VR during intervention.*



*Figure 4. Gabriel's Social Communication Skill in RL. This graph shows Gabriel's plotted scores in responding and initiating skills in RL during intervention.*



*Figure 5. Nehemiah's responding skill in VR. This figure shows Nehemiah's responding skill in VR during intervention.*

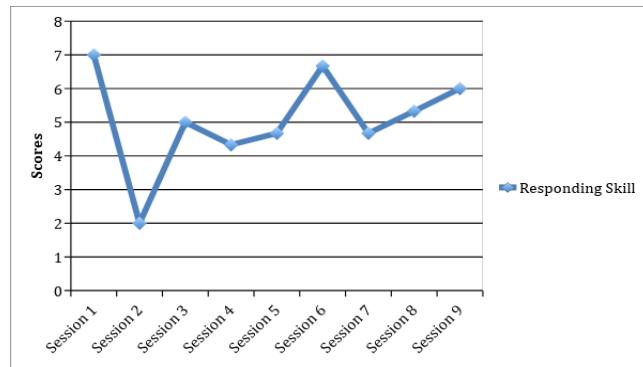


Figure 6. Nehemiah's social communication skills in RL. This figure shows Nehemiah's social communication skills in RL during intervention.

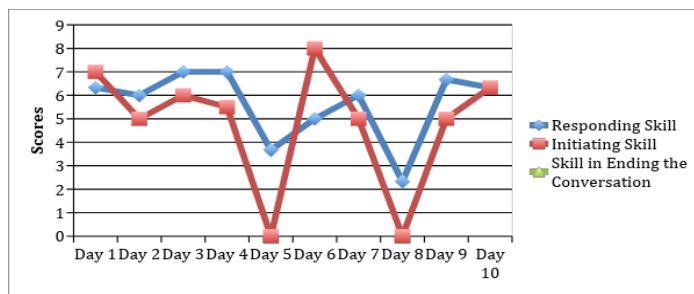


Figure 7. Jeremiah's social communication skills in VR. This figure shows Jeremiah's social communication skills in VR particularly responding and initiating during intervention.

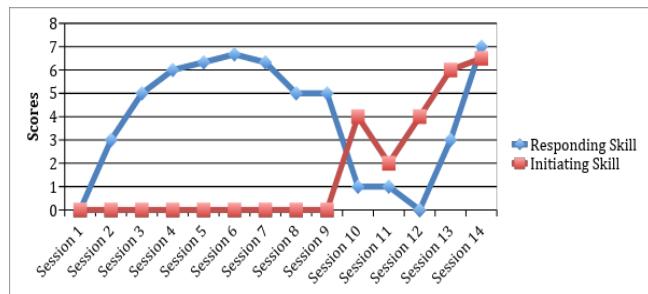
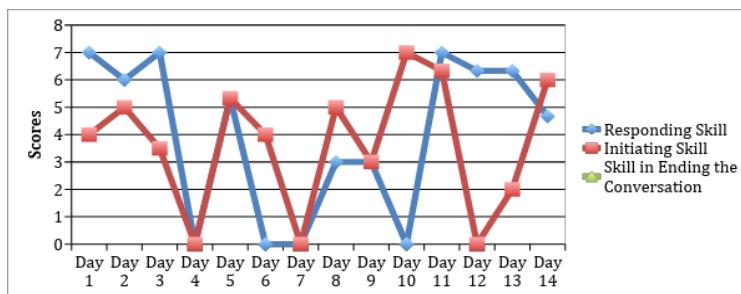


Figure 8. Jeremiah's social communication skill in RL. This figure shows Jeremiah's social communication skills in RL during intervention.



The effects of VRPP on social communication skills of the children after the intervention varied in VR. The first child with comorbid AD/HD and ASD increased in all sub-skills in initiating,

responding and ending the conversation. For the second child with AD/HD, no change in score as before intervention, the sub-skills in responding were observed. For the third child with AD/HD, in responding, all sub-skills were observed. In initiating, observed sub-skills were approaching by walking towards the peer, calling the person or peer by name, initiating by asking a question, asking questions in context, using appropriate words or statement and speaking in a friendly manner or with appropriate voice were observed. For all children, in RL, it can be assumed that there were no effects in all social communication skills as the sub-skills were observed prior the intervention. Participating in longer reciprocal conversation emerged after the intervention in VR. This observation was not noted in RL.

The tables show the score per sub-skill before and after intervention. Each score is a computed average per sub-skill for comparison.

*Table 3. Gabriel's initiating skill before and after VRRP in VR*

Sub-skills	Weight	Before the Intervention	After the Intervention
1. Approaches by walking towards the person / peer	1	0	0.67
2. Greets the person / peer	1	0	1
3. Calls the person or peer by name	1	0	1
4. Waits quietly for the person / peer to finish his or her response	1	0	1
5. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	1
6. Initiates by giving information or asking a question	1	0	2
7. Gives information or asks questions in context	2	0	2
8. Uses appropriate words or statement	2	0	2
9. Speaks in a friendly manner or with appropriate voice	1	0	1

*Table 4. Gabriel's responding skill before and after VRRP in VR*

Sub-skills	Weight	Before Intervention	After Intervention
1. Waits quietly for the person / peer to finish his or her statement	1	0	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	0	1
3. Utters an on-topic response	2	0	2
4. Uses appropriate words or statement	2	0	2
5. Speaks in a friendly manner or with appropriate voice	1	0	1

*Table 5. Gabriel's skill in ending the conversation before and after VRRP in VR*

Sub-skills	Weight	Before Intervention	After Intervention
1. Waits quietly for the person / peer to finish his or her response	1	0	1
2. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	1
3. Utters a statement that ends the conversation	2	0	2
4. Uses appropriate words or statement	2	0	2
5. Speaks in a friendly manner or with appropriate voice	1	0	1

**Maintaining Conversation.** Before the intervention, there was no conversation that occurred while after the intervention, Gabriel was able to participate in longer reciprocal conversations. The four role-plays ranged from 11-14 conversational turns. Moreover, role-play 3 contains 14 conversational turns was the longest reciprocal conversation in all role-plays conducted after the intervention. The conversation below shows the dialogue between Gabriel and the virtual peer in role-play 3:

Gabriel: Hi, Alex!  
Alex: Hello, Gabriel!  
Gabriel: I was wondering about TV programs or cartoons.  
Alex: What about TV programs or cartoon?  
Gabriel: I was talking about Mr. Bean  
Alex: Oh, Mr. Bean, I like that show.  
Gabriel: I like him with his teddy.  
Alex: Can you repeat that again?  
Gabriel: Mr. Bean does have a teddy.  
Alex: Oh yes, the teddy bear, but I love the car more.  
Gabriel: Is it green?  
Alex: Yes, It's color green.  
Alex: Do you like other characters in the show?  
(Overlap, but Alex continued and Gabriel paused)  
Gabriel: I like only Mr. Bean and teddy.  
(He held the computer mouse and moved it, the teacher physically prompted him to put his hand on his lap, the conversation continued without interruption)  
Alex: Oh I see.  
Gabriel: Mrs. Wicket is gonna get mad at Mr. Bean.  
Alex: Yes, that's true I find that very funny.  
Gabriel: Mrs. Wicket has a cat.  
Alex: Yes, that cat is very grumpy.  
Gabriel: It's yellow.  
Alex: Yes, and it å a scar.  
Gabriel: In his, in it, in its face?  
Alex: Hmm, I also like Mr. Bean's girlfriend.  
(Gabriel would looked downward while his

*Table 6. Gabriel's initiating skill before and after VRRP in RL*

Sub-skills	Weight	Before Intervention	After Intervention
1. Approaches by walking towards the person / peer	1	0.5	0.67
2. Greets the person / peer	1	0	0
3. Calls the person or peer by name	1	0.5	0.33
4. Waits quietly for the person / peer to finish his or her response	1	0.5	0
5. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	0
6. Initiates by giving information or asking a question	1	1	1
7. Gives information or asks questions in context	2	1	2
8. Uses appropriate words or statement	2	1	2
9. Speaks in a friendly manner or with appropriate voice	1	1	1

*Table 7. Gabriel's responding skill before and after VRRP in RL*

Sub-skills	Weight	Before Intervention	After Intervention
1. Waits quietly for the person / peer to finish his or her statement	1	1	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	1	1
3. Utters an on-topic response	2	2	2
4. Uses appropriate words or statement	2	1.67	2
5. Speaks in a friendly manner or with appropriate voice	1	0.67	1

Using the SCSS, the sub-skills in ending the conversation were not observed in the RL. Before and after the intervention, it was observed that Gabriel conversed with a peer but no maintaining conversation was observed. Most conversations included the SPED teacher or the observer as the conversing partner.

*Table 8. Nehemiah's responding skill before and after VRRP in VR*

<b>Sub-skills</b>	<b>Weight</b>	<b>Before Intervention</b>	<b>After Intervention</b>
1. Waits quietly for the person / peer to finish his or her statement	1	1	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	1	1
3. Utters an on-topic response	2	2	2
4. Uses appropriate words or statement	2	2	2
5. Speaks in a friendly manner or with appropriate voice	1	0.33	0.33

*Table 9. Nehemiah's initiating skill before and after VRRP in RL*

<b>Sub-skills</b>	<b>Weight</b>	<b>Before Intervention</b>	<b>After Intervention</b>
1. Approaches by walking towards the person / peer	1	0	0
2. Greets the person / peer	1	0	0
3. Calls the person or peer by name	1	1	0.67
4. Waits quietly for the person / peer to finish his or her response	1	0	0
5. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	0
6. Initiates by giving information or asking a question	1	1	1
7. Gives information or asks questions in context	2	2	2

8. Uses appropriate words or statement	2	2	2
9. Speaks in a friendly manner or with appropriate voice	1	1	1

After the intervention, Nehemiah was able to participate in reciprocal conversation with Alex. Role-play 1 consisted of 6 conversational turns while role-play 2 consisted of 9. For both role-plays, the virtual peer was the one who initiated the conversation. For both role-plays, Nehemiah took off the earphones as an indicator that he ended the conversation. Maintaining conversation are shown below wherein Nehemiah participated in reciprocal conversation in VR after the intervention:

*Table 10. Nehemiah's responding skill before and after VRRP in RL*

Sub-skills	Weight	Before Intervention	After Intervention
1. Waits quietly for the person / peer to finish his or her statement	1	1	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	1	1
3. Utters an on-topic response	2	2	2
4. Uses appropriate words or statement	2	2	1.67
5. Speaks in a friendly manner or with appropriate voice	1	0.33	0.67

Using the Social Communication Score Scale, the sub-skills in ending the conversation were not observed in the RL. Before and after the intervention, it was observed that there was no maintaining conversations between Nehemiah and a peer. Most conversations included the SPED teacher, the observer and the student teacher as the conversing partners.

*Table 11. Jeremiah's initiating skill before and after VRRP in VR*

<b>Sub-skills</b>	<b>Weight</b>	<b>Before Intervention</b>	<b>After Intervention</b>
1. Approaches by walking towards the person / peer	1	0	0.5
2. Greets the person / peer	1	0	0
3. Calls the person or peer by name	1	0	0.5
4. Waits quietly for the person / peer to finish his or her response	1	0	0
5. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	0
6. Initiates by giving information or asking a question	1	0	1
7. Gives information or asks questions in context	2	0	2
8. Uses appropriate words or statement	2	0	1.5
9. Speaks in a friendly manner or with appropriate voice	1	0	1

*Table 12. Jeremiah's responding skill before and after VRRP in VR*

<b>Sub-skills</b>	<b>Weight</b>	<b>Before Intervention</b>	<b>After Intervention</b>
1. Waits quietly for the person / peer to finish his or her statement	1	0	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	0	1
3. Utters an on-topic response	2	0	2
4. Uses appropriate words or statement	2	0	2
5. Speaks in a friendly manner or with appropriate voice	1	0	1

Jeremiah needed to learn the skill in responding by giving a comment when the conversing partner's utterance was to tell an information. Because of this, reciprocal conversation was poor. Questions asked by the virtual peer helped in maintaining the conversation. In the 4 different role-plays, Jeremiah was given 11-16 opportunities to respond. It was the virtual peer who was in control of the conversation by asking questions. The conversation below shows the complete role-play wherein Jeremiah would respond to the virtual peer or would prefer not to. He would also relay to the teacher what Alex had uttered to him. There were also utterances indicating that he wanted to end the conversation.

*Table 13. Jeremiah's initiating skill before and after VRRP in RL*

Sub-skills	Weight	Before Intervention	After Intervention
1. Approaches by walking towards the person / peer	1	0	0
2. Greets the person / peer	1	0	0
3. Calls the person or peer by name	1	0.67	0
4. Waits quietly for the person / peer to finish his or her response	1	0	0
5. Utters the statement not later than 3 seconds after the person's / peer's response	1	0	0
6. Initiates by giving information or asking a question	1	1	1
7. Gives information or asks questions in context	2	0.67	2
8. Uses appropriate words or statement	2	1	2
9. Speaks in a friendly manner or with appropriate voice	1	0.67	1

*Table 14. Jeremiah's responding skill before and after VRRP in RL*

<b>Sub-skills</b>	<b>Weight</b>	<b>Before Intervention</b>	<b>After Intervention</b>
1. Waits quietly for the person / peer to finish his or her statement	1	1	1
2. Responds not later than 3 seconds after the person's / peer's utterance	1	1	0.67
3. Utters an on-topic response	2	2	2
4. Uses appropriate words or statement	2	2	1
5. Speaks in a friendly manner or with appropriate voice	1	1	0

Using the SCSS, the sub-skills in ending the conversation were not observed in RL. Before and after intervention, it was observed that there was no maintaining conversation between Jeremiah and his peers. Most conversations included the SPED teacher or the observer as the conversing partner.

## **2.8. Discussion**

VRRP can be used to target the problem in social communication skills of children with AD/HD. For the child in the study with comorbid AD/HD and ASD, behaviors displayed were commonly speaking off-topic statements that would divert his attention while having a session. Mentioning same topics as his preference are also common. Danby et al. (2012) indicated the importance of the complex understanding of social knowledge and what interactions are involved in building relationships. For the other child, the problem in articulation emerged, while eliciting responses from the third child was the challenge. Providing enough time for him to process and think helped him to respond.

The VRRP provided a structure wherein learners were able to engage in a conversation with turn-takings. Mancil et al. (2009) indicated that result of the intervention as increase in communication responses. Sansosti & Powell-Smith (2006) characterized this as maintaining conversation where the participant contributed to a reciprocal conversation with another peer or group of peers like engaging in small talk. With regard to the use of 3-D software, it may either increase interest or be distracting. Prompts may help in order for the child to keep him on-task as behavior problems in the study were still evident during VR sessions. This behavior problems in children with AD/HD were noted by Moore (2010) as problems with self-regulation which means poor self-control which is the lack of capacity to inhibit. The effect of the VRRP on behavior is indeterminate. It does not yet support the statement of Mancil et al. (2009) that the effects of communication training impacts behavior such as decrease in aberrant behavior. Reminder before the start of the session could help eliminate inappropriate behaviors during VR sessions.

In creating a VRRP intervention, the child's problem such as uttering off-topic statements and elaborating was addressed in VR. Choosing topics that are interesting and are within the boundary of the child's experience helped him speak more related statements. Hsiao & Bernard-Optiz (2000) noted this as shared interest wherein the same topic was the focus in the conversation. Sansosti & Powell-Smith, (2006) noted knowledge of the topic maintains conversation. The child's comprehension and reading level must be predetermined as it would include comprehension for watching clips and reading scripts. Clips and scripts that are short are effective. Solomonidou et al. (2004) mentioned that learners with AD/HD prefer to use computer with concise texts, videos or short narration. Long discussions, question and answer, and repetitive tasks cause boredom to the child in the study. Inattention was evident in those instances. Rasha et. al (2013) characterize this as short attention span. Fidgeting was common for the two children with AD/HD which justifies Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (2013) description of hyperactivity as having excessive or talkativeness. Transitions from one activity to the next should be brief to keep the child's attention.

Task analysis is essential in teaching initiating by asking a question and responding by giving a comment. Modifications were useful as each child with AD/HD differ in their social communication skill, comprehension and behavior. More numbers of sessions would be required for the child to fully master these skills. With regard to skill in ending the conversation, the scripts that contain the statement to end a conversation is helpful. For the case of the other child, frequency of the sessions and intervals affect his behavior during the sessions.

Scaffolding as a strategy was reflected on each component in the lesson design. The very essential part for the child's learning is modeling where the child was able to watch the skill using a clip and the guided and independent practices wherein three to four different role-plays were conducted with gradual decrease of support applied. Through these strategies, mastery was achieved for most of the skills or problems pertaining the skill were identified. Moreover, the different role-plays conducted for each session provided an opportunity for the child to practice and demonstrate the skill.

Features of the 3-D software that was used to teach social communication skills helped facilitate learning for the child with comorbid AD/HD and ASD. The graphics and sounds could be attractions to children with AD/HD. Conversations through voice chatting done in role-plays with the virtual peer in an avatar form helped gave interest and helped the child pay attention. The presence of the virtual peer was impactful. Hadley & Schuele (1998) emphasized the importance of authentic positive peer interactions as preparation to establish friendships. They noted that lack of opportunity for peer confederate training and social skills. Battaglia & Radley (2014) highlighted the advantages when children practice socialization with their peers with careful selection of peers to match the specific deficit. Biggs & Carter (2017) justified the improvement in communication with peers by the efficacy of peer support. Hundert & Harrison (2014) stressed the combinations of peer buddies and social scripts training produced a generalized interaction with peers to play settings. Rogers (2000) summed up that the involvement of typically developing peers determine success of social skills intervention.

In the conversations, children would frequently look away while listening to the virtual peer. Turkstra et al. (2003) reasoned that while listening, listening without gazing lessens information to process for those with language processing disorder. Engagement was seen in the conversations between the child and the virtual peer. Engagement noted is still unclear if it could be attributed to presence however, Scoresby et al. (2011) mentioned that presence is not only confined in the fully immersed experience. Sanchez-Vives et al. (2005) identified contributors to presence is the sense of being with another person in a virtual environment. The

3-D software used as a multimedia could provide this feature and Scoresby & Shelton (2011) noted that visual and audio aspects greatly contributed to the feeling of presence. On that premise the avatar somehow distracted the learner in some parts of the session. Another source of distraction are equipment like mouse and earphones. Prompts from the teacher while seated beside the child assisted the child to focus on the task.

Aside from prompts from the teacher, her role as the moderator in the conversations through voice chat between the virtual peer and the child was crucial. The cues before starting the role-play assisted the conversing partners as overlaps in the conversation happened.

The 3-D software with all the tools available for the teacher could avoid multiple windows opened in the screen while the teacher is facilitating the session. Relevant tools for the teacher are for sharing and keeping files and chatting by typing messages. The following windows were ready for access during the session like Facebook in order to chat with the virtual peer, PDF file as slide, Quicktime for the clip and Notes for the links.

Echo of voice was heard in the virtual world. The standard use equipment such as a set of earphones with microphone should be applied to avoid this problem. In a school environment, Internet connection should be DSL as problems in voice chat occurred using a WiFi connection.

Social Communication Skills are dependent on the structure of the environment. The effects of VRRP in the child's real-life setting is inconclusive. In RL, the environment is unstructured compared to the VR. The frequencies of initiating and responding skills are evident in the natural environment however, quality of the conversation between the conversing partners are better in VR. Therefore the structure in VR contributed to this result. Krebs, McDaniel & Neeley (2010) study revealed that peer training brought advantages to participants as they displayed increase in the target behaviors but it requires an appropriate structure on how to create an intervention that fits the learner.

The child with comorbid AD/HD and ASD were different from the other two participants. He was able to achieve the sub-skills "waiting for the person or peer to finish his or her statement" and "uttering an on-topic statement." Number of turns increased in the conversation with a maintained topic. In initiating, the sub-skill "approaches by walking toward the peer was also gradually addressed." Given an instruction to ask a question, the child had difficulty, as telling an information was more frequent. The need of support in order to accomplish this task was needed. A different result was shown in the case of the other child with AD/HD wherein the social communication skill particularly responding by answering a question and giving a comment showed variability. The child's behavior and the staggered sessions were variables. Nonetheless, VRRP facilitated learning and other problems in social communication such as difficulty to articulate some words and difficulty to express longer statements became evident during intervention. The third child with AD/HD displayed responding skill that was improving during intervention, but his scores dropped when it was replaced by teaching initiating skill wherein he also was able to attain slow progression of skill.

In the VR session, the children with AD/HD in the study were able to improve in social communication skills but they varied in terms background specifically, behavior, comprehension skill and an uncontrolled variable was also identified such as staggered sessions which lead to different pacing in learning the skills.

Structure is needed in order for the children with AD/HD in the study to develop and demonstrate the social communication skills in the classroom. In the real-life setting, the social communication skills varied in accordance to the degree of structure in the environment, therefore opportunities to display social communication skills varied as well. In RL, in a less structured environment, initiating skill was more frequent while in a more structured, responding was more evident. Conversations in the RL setting would often include the SPED teacher or the observer rather than a peer as the conversing partner. There could be opportunities to converse with peers in RL, however, there is no structure to follow in the natural setting.

Skill in ending a conversation in the RL was not common. Behaviors displayed were often not responding or leaving the conversing partner by walking away.

In conducting VRRP, the role and presence of the teacher beside each child in real-life during session was vital while having VRRP intervention as the children with AD/HD in study depended on the instructions and prompts provided by the teacher. For role-plays, the teacher who acted as a moderator of the conversations that took place were necessary in order to accomplish the objectives.

The VRRP particularly the structure of the explicit instruction design in different stages was beneficial to address the problems in social communication skills. Having said that, there were components in the lesson design that were greatly advantageous. These were modeling wherein a clip was presented and guided practice and independent practice wherein the skills were rehearsed and evaluated. Other components were essential but needed to be applied concisely.

The role-plays with combination of scaffolding and 3-D features of the software evidently promoted interest and was helpful to demonstrate social communication skills for each child with AD/HD.

Repetitions of activities could lead to boredom and would affect the child's social communication skills. Other features of the VRRP can be distracting such as the avatar and surfing.

### **3. Conclusion**

Based on the findings of the study, the conclusions below are drawn:

A fully structured context and a less structured setting affect the social communication skills of children with AD/HD in the study. Therefore providing structure in the school setting will reinforce this skill.

The VRRP component such as the use of a 3-D software with its features supports engagement or interest for children with AD/HD to learn social communication skills. These are the clips and scripts displayed in the virtual screen, the avatar, the sounds, and the virtual peer. This interest may also lead to distraction, therefore the role of the teacher to provide support is important.

The series of role-plays where scaffolding in the scripts were major contributors for the children with AD/HD to enhance social communication skills. The scripts with topics that were familiar to them helped them utter statements.

### 3.1. Recommendations

Parents should promote social communication skills by having a supportive environment such as providing a structured setting wherein their child with AD/HD could perform social communication skills at home.

Children with AD/HD must be provided a program that would target their social communication skills. Structuring the school to have a supportive environment by assisting the students to interact with peers must be prioritized. Integrating the structure that teaches social communication skill can be done in all activities in the school including the natural setting such as recess time, play time or circle time.

Using VRRP, preliminary program must be considered first that will target the behavior problems of the child with AD/HD in order to manage the behavior.

In creating a VRRP, the child's first language, reading and comprehension skills must be determined. The scaffolding wherein the child would be able to practice the conversations must be done by using the scripts with topics that are interesting for the child. Series of role-play are helpful however, repeating a clip and a role-play could cause boredom for students with AD/HD. Discussion and verbal instructions must be very brief and transition from one activity to another must be quick. Facilities must include a quiet space. Connecting the computer to an Ethernet is better than a WiFi connection as Internet connections in schools would often cater to multiple devices that may interfere the online session. Other skills in social communication must be explored as the targeted skills will progress. When mastery in initiating, responding and skill in ending a conversation are achieved, other areas could be added like, turn-taking skills, maintaining conversations or conversation in a group setting.

Another phase is recommended wherein a child would undergo role-play exercises with real-life peers such as with classmates and other children in the school. This is a structured setting however, it will include real-life people from the school. This would serve as the transfer of the skills wherein the child would be able to apply the skills learned from the VRRP. The third phase could be giving an instruction for the child to make a conversation with peers in the natural environment wherein the teacher would monitor if the tasks were accomplished and to determine if the child was able to demonstrate the target skills in social communication. School staff and teachers should be trained in order to establish a supportive environment that would provide opportunities for children with AD/HD to practice and show their social communication skills.

Using a 3-D software promotes interest to children with AD/HD. 3-D software must be developed for children. Because the users are children with AD/HD, added features could be more gestures or animations that portray appropriate behaviors of a child in the real-word. Examples are shaking of hands, sitting still or packing away of things. Another feature includes customizing avatars with more options in terms of appearance so that the child would be able to create one with a closer resemblance to the child's real-life. When it comes to the virtual world, places that are part of the child's regular routines can be considered. Examples of places are classroom, canteen or play area.

When it comes to accessibility, a software that includes different tools for teachers can be considered. These are options to chat using typing, storage of files such as PDF's or slides and links for videos. This is to add ease and to avoid using different windows for different application programs during sessions.

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## **EXPLORING THE LIVED EXPERIENCES OF PARENTS HAVING LEARNS WITH SPECIAL EDUCATIONAL NEEDS IN THE NEW NORMAL EDUCATION**

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### **ABSTRACT**

The objective of this study was to find out the lived experiences of the parents of Learners with Special Educational Needs (LSEN's). This study employed a qualitative research design specifically a phenomenological approach. The sample of this study was conducted among the thirty (30) parents of the Learners with Special Educational Needs (LSEN's) of Malalag Central Elementary School-SPED Center. The investigator used Moustakas (1994) modification of the Stevic-Collazzi-Keen method of analysis to analyze the phenomenological data. The findings show that the parents' capacity to teach has been delimited due to several factors and that clearly implies for the need for immediate and strategic intervention. These include learning materials, resources, and assistive technologies. The contact time is also proved to be pivotal however it cannot be denied that the participants have other things to do like attending to their works and jobs that the bear on their shoulders. Moreover, the provision of skills and trainings are needed taking into consideration as well the strengthening of the emotional and psychological stability of the parents. These findings could serve as a basis to create parents and teachers partnership school program to strengthen the learning continuity of Learners with Special Educational Needs (LSENs) concerning the new normal education in the time of the COVID-19 pandemic.

**Keywords:** Parents, Learners with Special Educational Needs, New Normal

## 1. Introduction

Special needs of children are considered as individuals who have significant differences according to their peers in terms of their personal, academic, and developmental characteristics for various reasons (Argyropoulos & Chamoniokolaou, 2016). When a child with special needs comes to the world or if the child needs special education due to an accident, illness, etc., the life balance of the parents is disturbed (Soubhi, Lima, Aitdaoud & Talbi, 2016). School closures can have a significant impact on the lives of those with special needs. According to Lee (2020), children with autism spectrum disorder and neurocognitive disabilities can become frustrated due to disruptions in their daily routines. Their regular therapy sessions may get interrupted and they are more likely to show problematic behaviors such as irritability, aggression, and social withdrawal (Bertelli, 2020).

It is for these various reasons that the researcher would want to pursue this study. The researchers want to address the problems that will arise on the experiences of parents having children with special educational needs and to provide their needs of learning amidst the time of Covid-19 pandemic as we are experiencing recently. It aims to convey the strong partnership of parents and teachers as we continue to deliver fully the learning modalities towards our clients, our beloved learners with special educational needs. In line with this, through this research we can assess the state of parents having learners with special educational needs of Malalag Central Elementary School-SPED Center. This could serve as a basis to create parents' and teachers' partnership school program to strengthen the learning continuity of Learners with Special Educational Needs (LSEN's) concerning the new normal education in the time of the COVID-19 pandemic.

### 1.1 Problem Statement/Objective

This qualitative study will explore the experiences encountered by the Parents having Learners with Special Educational Needs (LSEN's) concerning the new normal education in Malalag Central Elementary School SPED Center. Specifically, it seeks to answer the following grand tour and research questions:

1. How do the participants having learners with special educational needs describe their lived experiences in the new normal education?
2. How do the participants assist in the learning of their children?
3. How do the participants make access in the utilization of the learning resources and materials?
4. How do participants spend their time in assisting their children's learning?
5. How would the parents like to be helped with especially the skills and trainings they needed?
6. How do you feel having a child with special educational needs especially in this time of pandemic?
7. What parents' and teachers' partnership school program can be designed to strengthen the learning continuity of Learners with Special Educational Needs (LSEN's) concerning the new normal education in the time of the COVID-19 pandemic?

## 1.2 Literature Review

Parents of children with disabilities also have to deal with complex issues related to the child's education. Either a private education must be sought or an adequate public or general education must be available. Close parental contact with the school system is vital for the child to receive a proper education. Parents must collaborate with teachers for their child's education to be effective. Teachers and parents have to be partners in the education of the child with a disability (Smith, 2002). According to Schalock and Verdugo-Alonso (2002), the criterion of the quality of life of an individual is related to his/ her family by nature. The importance of family increases for individuals with special needs (Seltzer, Floyd, & Hindes, 2004; Nuri, Akcamete, & Direktor, 2019). The participation of parents in the process is the subject of special education services. This process requires arrangements to determine appropriate services taking into account the needs of both the child and the family. For this effect, it is essential to have data related to the characteristics of the family (Cavkaytar, Batu, Kartal, Cetin, & Gullupinar, 2004). The type of disability, the grade, the socio-economic level of the parents, the age, and the support they receive influence their parents' feelings and behaviors (Aysan & Ozben, 2007; Nuri, 2017).

At the end of 2019, the COVID-19 epidemic broke out in Wuhan of China. Because of the strong concealment and contagiousness, rapid spread, and extremely harmfulness, it quickly swept across other regions of the country. Subsequently, 30 provinces, municipalities, and autonomous regions nationwide successively initiated the first-level responses to a major public health emergency. To protect the lives and health of the people, the China government has organized a variety of forces to carry out prevention and control and adopted various measures to prevent the epidemic from spreading on a large scale. According to a report published by the New York Times, about 760 million people in China were in a state of confinement. Although the number of children affected by the disease is small, and most of the affected children show only mild symptoms (Qiu H., et al, 2020). The disease and the containment measures are likely to negatively impact the mental health & well-being of children with special educational needs. Even though children all over the world are going to be affected, those with disabilities, living in slums, isolation centers, and conflict zones are going to be at a greater risk.

## 2. Methods

This study employed a qualitative research design specifically a phenomenological approach. A qualitative design as described by Creswell (2013) is an approach for exploring and understanding the meaning of individuals or groups ascribe to a social or human problem. Further, Giorgi (2009) has pointed out phenomenological research as a design of inquiry coming from philosophy and psychology in which the investigator will describe the life experiences of individuals about a phenomenon as described by the participants. It is recalling the experiences of the participants who will be involved in the study and going deeper into their thoughts, identifying the essence of the experience as described by the participants through lengthy discussion (Creswell, 2013; Tracy, 2013). It is an appropriate instrument in this study since the investigator needs to envision and explore the actual experiences of the parents having learners with special educational needs.

The study was conducted among the thirty (30) parents having learners with special educational needs of Malalag Central Elementary School-SPED Center. The participants are selected by the investigators based on some criteria. In terms of the parents' participants, the

parents of learners having special educational needs under the SPED program are purposively chosen. The process of selecting the participants will be purposive sampling since the investigator decided on the needs to be known and sets out to find parents who can and are willing to provide information by virtue of knowledge and experience. Purposive sampling is a non-random technique that does not need underlying theories or set numbers of participants (Lewis & Sheppard, 2006). The gathering of information will be stopped when the saturation of data will be reached. The investigators made an interview guide questionnaire as a means to give clearance on how the participants engage in such activities and seek for validation from the experts in qualitative studies. Five experts composed of two master teachers, one school principal and two public school district supervisors for validity. It can thus be stated that the data collection tool through interview guide questionnaire is valid and reliable.

In this study, collection protocols as suggested by Creswell (2012) will be used which are as follows: obtaining permission, selecting participants, identifying the data, administering, and recording the data. As suggested by Neuman (2006), data gathering is considered reality as a subjective, personal, and socially constructed in relation to the research participants. The investigators used Moustakas' (1994) modification of the Stevick-Collazzi-Keen method of analysis to analyze the phenomenological data, including the investigators. Thematic analysis followed an inductive process, where data content from participants was analyzed to form general themes (Teddlie & Tashakkori, 2009). The themes were identified by following the four-phase theme development process set by Vaismoradi, M., Jones, J., Turunen, H. and Snelgrove, S., (2016), namely, initialization, construction, rectification, and finalization. The initialization phase includes reading through the transcripts for coding purposes, which helps in reducing the raw data into meaningful units (Maguire & Delahunt, 2017). The themes identified through the above-mentioned four-phase process were then used for data analysis.

### **3. Results and Discussion**

The results aspired to summarize the collected data by using Stevick-Collazzi-Keen method of analysis Moustakas' (1994) to analyze the phenomenological data. It presents the different themes obtained from the gathered and analyzed data of the in-depth interview conducted by the investigators. Five main themes emerged from the analysis: Learning Assistance; Learning Resources and Materials; Time Management; Teaching Skills Needed; and Challenges in Handling the Learners with Special Educational Needs of parents.

#### **3.1 Theme Findings**

##### **Theme 1. Learning Assistance**

This tells about the ways in which the participants teach their children. It also details their individual strategy of being able to teach them relative to their individual differences, impairments, and disability. This reveals that in teaching LSENs, it requires extra assistance since they are not able to understand well what is in the module. The desire of the participants is evident in making sure that their children are still learning by doing some other activities that can arouse their learning interest.

*Table 1: Emergent Theme on How Parents Assist their Children's Learning*

<b>Emerging Themes</b>	<b>Statements</b>
Learning Assistance	<ul style="list-style-type: none"> <li>■ “On his module, I read it for him and help him how to answer....if we are not answering the module, I let him draw.... or do coloring what is in the module”. Transcript 6, Lines 24-25</li> <li>■ “On his module, I let him trace it...I hold his hand and guide him.....” Transcript 11, Lines 26-27</li> <li>■ “Sometimes I also teach, but sometimes if it is wrong I told him that we will ask help to his older brother. Sometimes I cannot say what he would do... so we ask help from his elder brother.” Transcript 7, Lines 8-9</li> </ul>

The participants also guide and assist their children especially for the learners with Multiple Disabilities who may possess two or more difficulties in one child such as autism, intellectual difficulties which makes teaching even more difficult. Here, we can see now that the parents are asking the help of the elder siblings and other persons that they can ask for help to teach their child with special needs, mirroring that not all of them are as able as the rest of the participants in teaching. According to Aysan and Ozben (2007) and Nuri (2017), the type of disability, the grade, the socio-economic level of the parents, the age and the support they receive influence their parents' feelings and behaviors. It is necessary to investigate the problems and needs of the parents when determining what support will be given to their children (Natale & Lubniewski, 2018).

## **Theme 2. Learning Resources and Materials**

Provides the learning resources/materials that are currently being used by the participants, the available gadgets in their homes, and the other needs by some participants.

*Table 2: Emergent Theme on How Parents Make Access in Utilizing Learning Resources*

<b>Emerging Themes</b>	<b>Statements</b>
Learning Resources	<ul style="list-style-type: none"> <li>■ “On his module, I let him trace it...I hold his hand and guide him.....” Transcript 11, Lines 26-27</li> <li>■ “Ah the paper ma'am his paper (Braille) ma'am”. Transcript 27, Line 36</li> <li>■ “I let him watch TV. He seems to be more focused and can understand better. He will then follow by acting what he sees”. Transcript 21, Lines 67-69</li> <li>■ “Gadget, DVD, cellphone because I don't have cellphone....it's because that if there's something that we don't understand we can search it in Google and YouTube”. Transcript 15, Lines 50-51, 71-72</li> </ul>

These statements imply that the participants are exhausting all available learning materials that will help them in teaching and for the learning of their children. However, they also express some other materials that they really need that will aid them in teaching. According to Cumley, Maro and Stenek (2019), assistive technologies help to facilitate communication for students with special educational needs in different situations and environments.

### **Theme 3. Time Engagement**

This refers to the time spent by the participants in teaching their children. This also refers to the availability of the participants when they are able to teach them.

*Table 3: Emergent Theme on How Parents Spend their Time with their Children*

<b>Emerging Themes</b>	<b>Statements</b>
Time Engagement	<ul style="list-style-type: none"> <li>■ “Ah the paper ma’am his paper (Braille) ma’am”. Transcript 27, Line 36</li> <li>■ “At 8 o’clock in the morning, but not always, sometimes in the afternoon, if that is the time that he likes to be taught...there are also times that he likes but we are busy then...but many of us are helping him.” Transcript 5, Lines 20-23</li> <li>■ “Sometimes in the morning, at noon depending if I don’t have any work or job to do.” Transcript 16, Line 40</li> </ul>

These statements signify that there is really lack of contact time of parents in teaching their children largely due to their availability since that they are doing household chores, works and jobs. They are also affected with the actual swaying of mood of their children which further delimit them from teaching them more freely. They have to adjust to their children’s readiness to learn. According to Lo (2010) parental involvement for children with special educational needs (SEN) is even more crucial due to the fact that parents have a unique understanding of their child’s needs. Parental involvement is an important contributor to the ‘educational processes and experiences of their children’ (Jeynes, 2005), either in school activities or in school-associated activities at home (Smit, Driessen, Sluiter, & Sleegers, 2007).

### **Theme 4. Skills and Trainings Needed**

Indicates the skills needed by the participants that will aid them in teaching their children. In addition, it also includes the necessary training to be an instrument in teaching and for the learning of their children’s appropriate needs.

*Table 4: Emergent Theme on Participants’ Skills and Trainings Needs*

<b>Emerging Themes</b>	<b>Statements</b>
Skills and Trainings Need	<ul style="list-style-type: none"> <li>■ “I really like it Teacher to learn the sign language so that I can also teach my child”. Transcript 13, Lines 77-78</li> <li>■ “It’s the Braille, for me to learn it and how to do and read it so that I can teach it as well to my child”. Transcript 1, Lines 39-40</li> <li>■ “I really like that teacher (what to do) because it is difficult for me to handle him especially when he tantrums, of course the teacher knows more how to handle situations like this.” Transcript 11, Lines 62-64</li> </ul>

Knowing that it is really hard for them to take the job of teachers in the learning of their children, yet due to this pandemic they have no choice but to adapt to the situation. Even so, they have expressed their needs in the forms of skills and/or trainings that can help them. While many parents in this study described challenges with the implementation of special education services, others discussed the successful implementation of special education and related

services for their child. Within these descriptions of special education services being implemented, parents often described the presence of positive and strong communication with the school personnel. This finding underscores the importance of communication for creating positive partnerships with parents (Blue-Banning et al., 2004; Francis et al., 2016; Tucker & Schwartz, 2013), and it has important implications for teacher preparation.

### Theme 5. Teaching Challenges and Sentiments

This expresses the day to day challenges of the participants in teaching their children and how they deal with it. This also contains the sentiments, feelings, and other emotional experiences of the participants.

All of these reflect the day to day challenges and diverse experiences of handling learners with special needs. They have put the maximum effort of being able to make sure that the learning of their children continues and despite all the hardships they still subscribed and believed that they are after all, God's Gifts to them, giving all the love in this world they deserve no less. This is important because regardless of its limitations, every human being has the same right to grow, develop, accept, and perform their role in society. According to Mintari and Widyarini (2015), they say that one of the ideas to be owned by parents who have the disabled children is that by seeking social support for emotional reasons. They said that this idea can be used to avoid having negative thinking for parents with disabled children. Furthermore, Faradina (2016) explains that positive parents' acceptance toward disabled children will lead to the positive development.

Table 5: Emergent Theme on Participants' Teaching Challenges and Sentiments

Emerging Themes	Statements
Teaching Challenges and Sentiments	<ul style="list-style-type: none"><li>■ "Sometimes he gets angry. He punches the walls of our house and throws stones. So I just sit down and reflect on the situation. Sometimes I wait for him to cool down. Sometimes I cry...but sometimes he is the one who comes near me....but despite of it all, I still want him to finish his education even we are poor. We will do our best for him". Transcript 7, Lines 58-59,68-70</li><li>■ "If he is watching TV, I will not force him to study because he will sneeze on me, then he will pretend to cough, play dead, and sometimes after he will defecate he will wipe his feces on me... but I endure him for he is given to me by God." Transcript 29, Lines 13-16, 21-22</li><li>■ "Sometimes in the morning, at noon depending if I don't have any work or job to do." Transcript 16, Line 40</li><li>■ "I told her my daughter, just be patient because you'll never know when God will give you the ability to speak properly and hopefully that your sickness will be gone since she suffers from epileptic seizures....since last December 13, I thought she'll die (crying)." Transcript 13, Lines 15-19</li></ul>

## 4. Conclusion

Based on the participants' significant statements and the related literature of the study, the investigators have concluded that it can be inferred that although they have their own ways and strategies in teaching their children, they are delimited as to their capacity to teach, they then resorted in asking the other persons' help especially from immediate family members; they have utilized existing learning resources and materials that they have at homes, and also express their needs in this regard as well; the time spent by the parents with the teaching of their children is dependent on their availability usually only at night and/or when they have no work to do or after the day's job which is even coupled with the mood swaying of their children that proved to be very unpredictable and/or erratic most of the time; these implies that they evidently requires assistance in the form of upskilling and the training of the parents to make them more capable in teaching; finally, with their challenges and sentiments are really very heartbreaking, experiencing all of those in a day to day basis really is unthinkable which clearly seeks for extending psychological assistance for them.

This undertaking has highlighted major issues: 1) Strengthening the parents and SPED teachers of Malalag Central Elementary School-SPED Center to intensify and equip them towards learners with special educational needs.; and 2) The results provided valuable implications for ways to formulate parents' and teachers' partnership school program to strengthen the learning continuity of Learners with Special Educational Needs concerning the new normal education in the time of the COVID-19 pandemic.

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# PRESCHOOL TEACHERS' KNOWLEDGE ON EARLY DETECTION OF DYSLEXIA FOR PRESCHOOL STUDENTS: A SYSTEMATIC LITERATURE REVIEW 2015-2020

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## ABSTRACT

Preschool teachers' knowledge on early detection of dyslexia for students in preschool is essential to ensure students' success into adulthood. Therefore, this study conducts a methodology based on a Systematic Literature Review (SLR) to determine preschool teachers' knowledge on the early detection of dyslexia for students in preschool. This study showed an investigation from October to December 2020 in three academic search systems, namely Scopus, Google Scholar and Mycite. The search yielded 29 articles and has identified 6 articles in the screening and evaluation process. Search terms are knowledge, preschool teachers, early detection, dyslexia and preschool students. This study shows that preschool teachers' knowledge of the early detection of dyslexia for preschool students is still at an unsatisfactory level. Furthermore, this study is also still poorly implemented either locally or abroad. Worryingly, the study also found that there are still no early detection instruments of dyslexia for preschool students in Malaysia. No early detection causes many students to be late in obtaining interventions. The implications of this study indicate that there is a need to establish an instrument for the early detection of dyslexia for preschool students in Malaysia.

**Keywords:** Knowledge, Preschool, Early Detection, Dyslexia, SLR

## 1.0 Introduction

According to the International Dyslexia Association, IDA (2017), <sup>1</sup>almost 15% to 20% of the population are affected by several dyslexia symptoms including impairment in reading and writing. Thus, Dyslexia is a term used in the field of special education especially in the category of specific learning disability (SLD). In order that, Malaysian therapists, researchers and dyslexia organizations are still being pursued in depth of knowledge and understanding of dyslexia. On the other side, dyslexia becomes the focus and study material in abroad compared to Malaysia. Based on The Salamanca Statement and Framework For An Action

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<sup>1</sup> International Dyslexia Association. (2017). *Dyslexia In The Classroom: What Every Teacher Needs To Know*. Retrieved from <https://dyslexiaida.org/dyslexia-in-the-classroom/>

on Special Needs Education (1994)<sup>2</sup> has been practiced in nationwide by ensuring that every child whether with learning disabilities, disabilities remains given equal education at an early stage. With this, the aspect of early detection plays an important role in identifying students with specific learning disabilities such as dyslexia since preschool age. Thus, the role of preschool teachers in early detection of children becomes a major dominant for addressing preschool children classified as dyslexic pupils.

## 1.1 Objective

Identify issues and status of early detection dyslexia among preschool children based on the level of knowledge of preschool teachers.

## 1.2 Problem Statement

*Figure 1.4 Number of Dyslexia by School and Special Education Program*

BIL	JENIS KURANG UPAYA	SPK			PPKI			PPI AP			JUMLAH KESELURUHAN
		PRA	REN	MEN	PRA	REN	MEN	PRA	REN	MEN	
1	ADHD	5	36	27	56	3,440	1,682	4	330	227	5,807
2	Autisme	36	93	23	444	7,726	2,477	27	483	237	11,546
3	Kurang Upaya Intelektual	3	96	232	35	9,563	8,027	2	1,097	903	19,958
4	Lembam	1	24	224	17	5,062	6,957	1	562	675	13,523
5	Sindrom Down	7	34		142	2,550	1,906	9	37	1	3,068
6	Dyslexia	4	33	142	10	3,341	3,834	3	1,743	1,233	12,413
7	Lain - Lain	3	29	20	131	2,008	940	59	302	177	3,669
JUMLAH		59	347	668	841	36,290	25,685	107	4,554	3,459	72,010
		1,074			62,816			8,120			

(Source: Special Education Data, 2019<sup>3</sup>)

Based on the number of dyslexic children by school, it has been proven that the number of dyslexics at the primary and secondary school level is high compared to the preschool level. So, this issue has prompted researchers to look for the factors that contribute to the increase

<sup>2</sup> The Salamanca Statement and Framework For Action On Special Needs Education. (1994, 7-10 Jun). *World Conference on Special Needs Education : Access and Quality*. Retrieved from <https://www.european-agency.org/sites/default/files/salamanca-statement-and-framework.pdf>

<sup>3</sup> Special Education Data. (2019). Retrieved from <https://www.moe.gov.my/en/muat-turun/pendidikan-khas/buku-data-pendidikan-khas/3156-buku-data-pendidikan-khas-tahun-2019/file>

in dyslexia at the primary and secondary levels. Thus, previous studies on aspects of early detection of Dyslexia at the Preschool level have provided knowledge to researchers about the scope of this issue. For example, Germano et al. (2017)<sup>4</sup> in their study ‘Screening Protocol for Early Identification of Brazilian Children at Risk for Dyslexia’ was conducted for two main purposes namely to develop a screening tool protocol for identifying early detection of Brazilian children at risk for dyslexia. The second purpose is to identify protocol prediction variables in using ‘Principal Component Analysis’. Thus, based on the reading of previous studies, proving the aspect of early detection is very important for a child especially since preschool so that language skills and academic achievement could be optimized. In short, based on previous studies on the early detection of dyslexia that carry out in abroad, it was found that they are concern on early awareness of dyslexia compared to Asian countries including Malaysia. The implication is that the awareness and reluctance of teachers towards dyslexics has not been addressed since preschool, resulting in the number of dyslexics at primary and secondary levels compared to preschool.

## 2.0 Body Of Paper

### 2.1 Introduction

The approach used to conduct this study is Systematic Literature Review (SLR). Basically, SLR methodology refers to five main processes according to Hayrol Azril (2020)<sup>5</sup>. Basically, the first process is to refer to specific sources in the formation of SLR, the second process is the formation of research questions, then systematic search, the fourth process is article quality evaluation and finally extraction and analysis data.

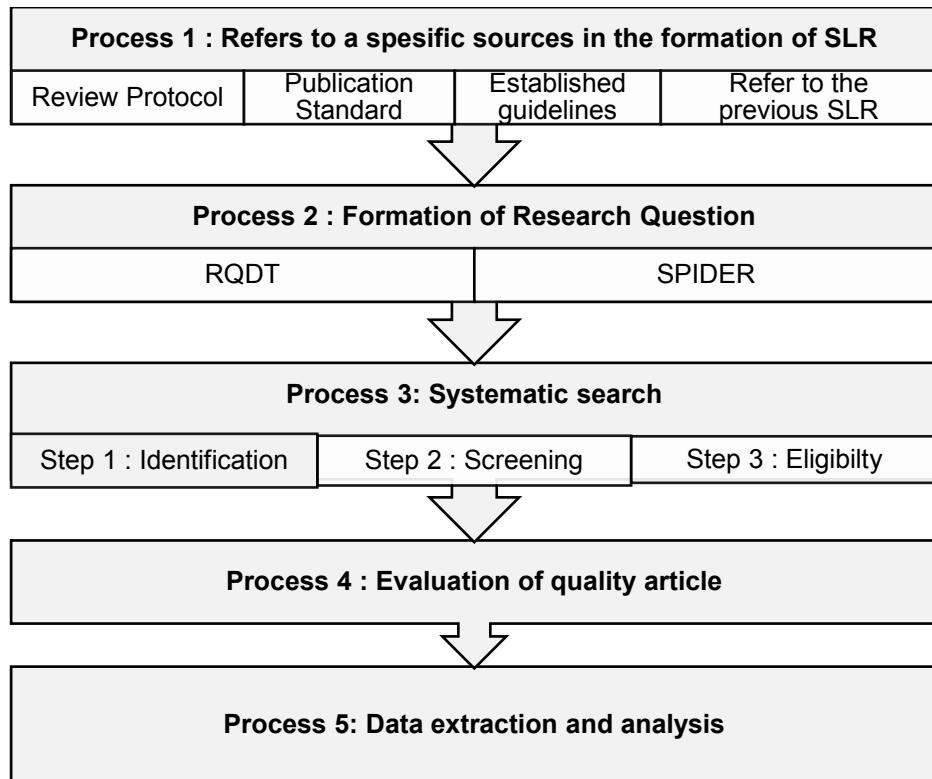
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<sup>4</sup> Germano, G.D., Cesar, A.B., & Capellini, S.A. (2017). Screening Protocol For Early Identification of Brazilian Children At Risk For Dyslexia. *Educational Psychology*. <https://doi.org/10.3389/fpsyg.2017.01763>

<sup>5</sup> Hayrol Azril. (2020). Metodologi asas Systematic Literature Review.

## 2.2 Methods

Figure 2.2 shows flow chart of SLR Process



Firstly, researchers refer to specific sources in the formation of SLR. For an example, review protocols, publication standards, established guidelines and refer to previous SLR that have been published. In detail, PRISMA is one of the review protocols used in the field of educational management (McKenzie JE et al, 2020)<sup>6</sup>. With this, PRISMA enable researchers to provide accurate information based on research question. Based on the review protocol, the researchers initiated the SLR with the formation of the study questions. Thus, this process called as second process that uses the Research Questions Development Tool (RQDT) in formulating research questions. Based on RQDT namely SPIDER; (Sample, Phenomenon of Interest, Design, Evaluation, Research Type) framework used to create research question.

Third process in SLR is systematic search. There are three dominant steps involved. First step is known as identification. In this process, efforts to diversify or multiply keywords are made. Thus, the synonym method was applied when searching for data. For example, researchers perform an identification process by looking for the synonyms by using websites, keywords that been previously used in past studies, and also keywords suggested in databases such as SCOPUS, Web of Science and collaborating among experts. Based on study of Kraus et al. (2020) <sup>7</sup>emphasize the

<sup>6</sup> McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD. (2020). *The PRISMA 2020 statement: an updated guideline for reporting systematic reviews*. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

<sup>7</sup> Kraus, S., Breier, M., & Dasi-Rodriguez, S. (2020). The art of crafting a systematic literature review in entrepreneurship research. International Entrepreneurship and Management Journal, <https://doi.org/10.1007/s11365-020-00635-4>

importance of the concept of ‘exhaustive and precision’ in the identification process. This means that although the keywords can be varied however, the researcher must ensure that the keywords are accurate and appropriate to the scope of the study. In short, the relevance and accuracy of keywords in finding data is very important. Next is the second step, which is the screening process. Screening is a process of selecting articles that are appropriate and relevant to SLRs based on set criteria. Thus, the researchers considered three criteria: the year of publication (2015 to date), the types of documents such as journal articles by Johnson and Hennessy (2019)<sup>8</sup>, the type of language (Linares-Espinos et al, 2018)<sup>9</sup> in which only the Malay language and English are used to facilitate the researcher’s understanding. The third step is known as eligibility. The third step in this systematic search is considered the second screening process. In this process, the researcher will examine all the selected articles from the first screening process to ensure that all the selected articles meet the set criteria and are relevant to the study. Upon completion of the systematic search process, not all selected articles can continue to be reviewed; their quality should be evaluated based on two methods. The first method is the quantitative method of ‘Cohen Kappa Analysis’ where the value should be more than 0.40. On the other hand, experts to determine the level of quality of an article also use qualitative methods. The final process in SLRs is data extraction and analysis. The process of extracting data or retrieving relevant data from previous studies should be based on the research question to be studied.

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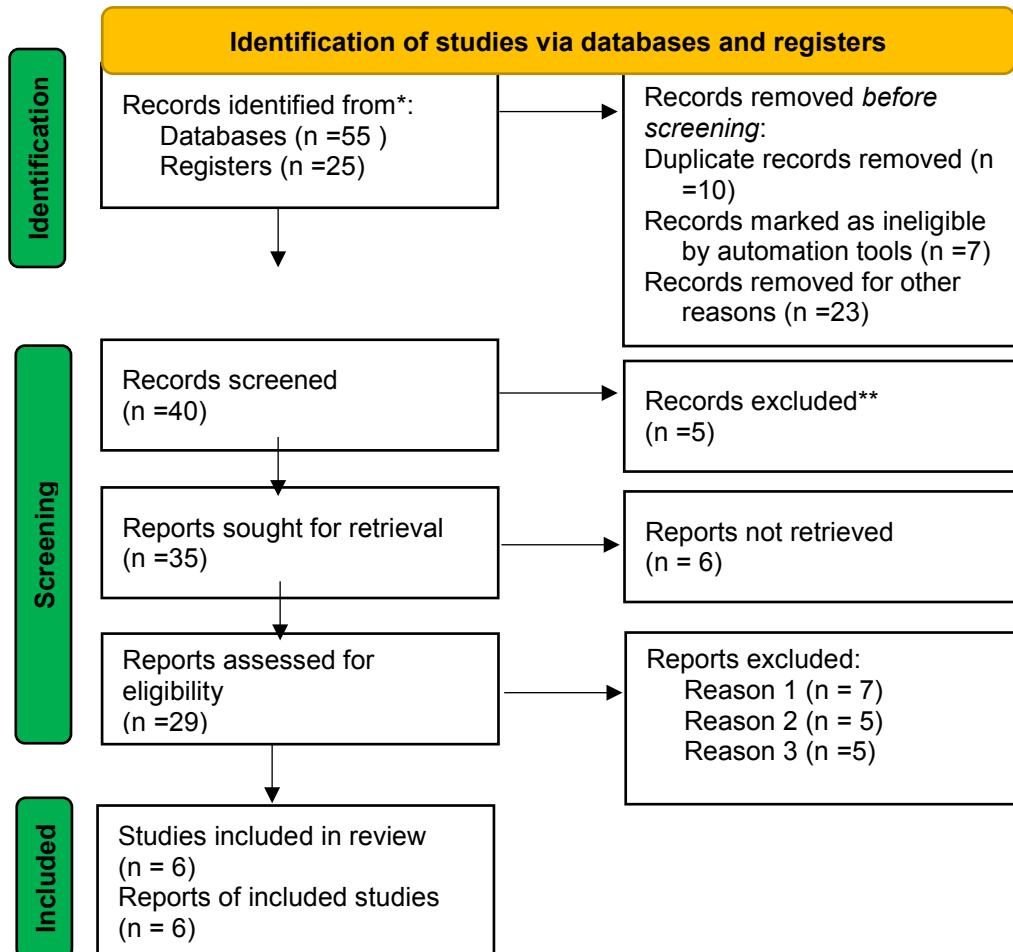
<sup>8</sup> Johnson, B.T., & Hennessy, E.A. (2019) Systematic reviews and meta-analyses in the health sciences: Best practice methods for research syntheses. *Social Science and Medicine*, 233, 237-251

<sup>9</sup> Linares-Espinós, E., Hernández, V., Domínguez-Escrig, J.L., Fernández-Pello, S., Hevia, V., Mayor, J., Padilla-Fernández, B., & Ribal, M.J. (2018). Methodology of systematic review, *Actas Urologicas espanolas*, 42(8), 499-506.

## 2.3 Results

The following is the latest PRISMA flow chart by McKenzie JE et al (2020) and adapted according to the SLR of this study.

Figure 2.3. Adapted PRISMA flow chart



*Table 2.4 shows Analysis of Systematic Literature Review*

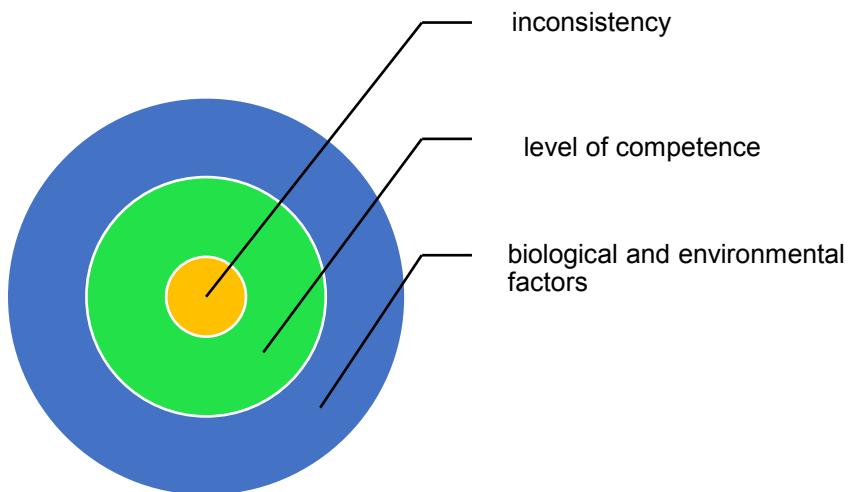
No	Author & Year	Research Objective	Samples	Methods	Issues and Status of Early Detection of Dyslexia in terms of knowledge of Preschool teachers	SUB- THEME
1.	Shu Sze et al (2018)	Determining the relationship between phonological awareness skills and visual-spatial abilities global among Malay children with SLD and compares them with typical children	Experimental group -18 SLD children (7-12 years)  Control group-18 typical children (7-12 years)	4 Types of Tests -Dyslexia Screening Test Bahasa Malaysia (DSTBM) -Wechsler Intelligence Test for Children (WISC-IV). - The Vineland Adaptive Behavior Scale Second edition (VABS-II) -The Child Behavior Checklist 4-18 (CBCL)	<ul style="list-style-type: none"> <li>• Malay children with SLD have difficulties in phonological awareness skills and visual-spatial abilities compare to typical students.</li> <li>• Lack of appropriate assessment tools to measure global spatial visual capabilities</li> </ul>	<ul style="list-style-type: none"> <li>➢ phonological awareness skills</li> <li>➢ visual-spatial abilities</li> <li>➢ assessment tools</li> </ul>
2	Anis et al. (2018)	to study various methods or treatments used to manage literacy and cognitive abilities for children with dyslexia, especially in Malaysia	NONE	-SLR Online databases such as PubMed, Ebscohost and Medline over a six - year period from 2000 to 2016. An initial total of 300 articles were produced but only 13 articles met the criteria	<ul style="list-style-type: none"> <li>• There is no standard module for Dyslexia classes in Government schools</li> <li>• Prioritize reading and writing skills over cognitive skills</li> <li>• Application of traditional teaching and learning techniques to all categories of children</li> </ul>	<ul style="list-style-type: none"> <li>➢ Special modules</li> <li>➢ Ancillary skills</li> <li>➢ Traditional Teaching Techniques</li> </ul>
3	Clerk et al (2019)	adapt and develop a dyslexia screening tool in the mother tongue for children in isiXhosa.	15 children from Grades 1-4,  13 teachers and parents for children	-The Bellavista Dyslexia Screening Tool (BVDST) -Checklist for Teachers (adapted from Kelly & Philips, 2016) -Interviews for parents	<ul style="list-style-type: none"> <li>• Early detection can increase self - confidence, failure in school and can prevent low incomes in the future.</li> <li>• The low level of Teachers' expertise in identify children's risk I in terms of speaking, spelling, reading and writing through observation</li> </ul>	<ul style="list-style-type: none"> <li>➢ Values and Attitudes</li> <li>➢ Screening tool</li> <li>➢ Materials</li> <li>➢ Teacher expertise</li> <li>➢ Observation</li> </ul>

No	Author & Year	Research Objective	Samples	Methods	Issues and Status of Early Detection of Dyslexia in terms of knowledge of Preschool teachers	SUB- THEME
4	Germano et al. (2017)	developing a screening tool protocol to identify the early detection of Brazilian children at risk for dyslexia Identify protocol prediction variables in using 'Principal Component Analysis'	149 six-year-old children of both sexes enrolled in the Primary School Year One class	The Screening Protocol for Early Identification of Reading Problems contains seven cognitive-linguistic test items (for 50 minutes)	<ul style="list-style-type: none"> <li>• The level of academic competence of teachers in early detection has also played a role on phonics and literacy awareness for children.</li> <li>• Teachers need to have knowledge and take action on children who experience language delays at an early stage before Year one by conducting initial screening.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Competence</li> <li>➢ Early detection</li> <li>➢ Awareness</li> <li>➢ General knowledge</li> <li>➢ Preliminary action</li> </ul>
5	Ramli et al. (2019)	identify the level of knowledge of teachers about dyslexia which includes general knowledge, diagnosis, symptoms and treatment.	138 KEMAS preschool teachers in Hulu Langat district, Selangor.	'Knowledge and Beliefs about Developmental Dyslexia' questionnaire based on three likert scales.	<ul style="list-style-type: none"> <li>• The level of general knowledge of teachers about dyslexia is at an optimal level</li> <li>• The level of detailed knowledge in terms of symptoms, diagnosis, prevention and early treatment is still at a very minimal rate.</li> <li>• Teachers fail to detect the characteristics of dyslexic children resulting in the teaching methods used do not affect the children</li> <li>• Although teachers have the level of education up to a master's degree in teaching and a long period of service, but preschool teachers still lack the knowledge and skills to detect dyslexia for preschool children.</li> <li>• Teachers 'negative attitudes towards dyslexic children such as labeling' lazy 'and' sluggish 'due to limited knowledge</li> </ul>	<ul style="list-style-type: none"> <li>➢ Knowledge</li> <li>➢ Symptoms</li> <li>➢ Diagnosis</li> <li>➢ Prevention</li> <li>➢ Early treatment</li> <li>➢ Features</li> <li>➢ Teaching methods</li> <li>➢ Level of teacher education</li> <li>➢ Period of service</li> <li>➢ Skills</li> <li>➢ Attitude</li> <li>➢ Likes to label</li> </ul>

No	Author & Year	Research Objective	Samples	Methods	Issues and Status of Early Detection of Dyslexia in terms of knowledge of Preschool teachers	SUB- THEME
6	Gonzalez & Brown (2019)	Exploring perceptions of dyslexia and investigating how early childhood teachers at Head Start understand the perception of dyslexia risk and how to identify solutions	Two teachers in each school (n = 4) and a total of 19 preschool children.	semi -structured interviews observations, teacher assessment scales and the Preschool Early Literacy Indicator (PELI) instrument.	<p>Having the skills to identify the characteristics of dyslexia when found that children have difficulty in learning 'rhymes', children are unable to recognize letters for their own names, utter more baby sounds and fail to remember letter names.</p> <p>Teachers used the studied early detection instrument (PELI) for preschool children in a New Jersey, USA school.</p> <p>There are a handful of teachers who say the issue of letter reversal is one of the main factors that can be identified in the early detection of dyslexia.</p> <p>Some teachers say that spelling and coding problems during reading are also identifiable factors in early detection.</p> <p>Preschool teachers' perceptions of dyslexia are categorized as a disorder in visual processing while some say dyslexia as a disorder in phonological processing.</p> <p>Teachers also argue that dyslexia stems from genetic, environmental and neurobiological factors.</p>	<ul style="list-style-type: none"> <li>➤ Skills</li> <li>➤ Difficulties in 'rhymes'</li> <li>➤ Recognize and recite letters</li> <li>➤ Detection instruments</li> <li>➤ Letter reversal issues</li> <li>➤ Spelling and coding issues</li> <li>➤ Disturbances in visual processing</li> <li>➤ Phonological Processing Disorders</li> <li>➤ Genetic issues</li> <li>➤ Environment</li> <li>➤ Neurobiological</li> </ul>

## 2.4 Discussion

Figure 2.4 shows main theme of issues



There are several issues of early detection of dyslexia from the perspective of preschool teachers in terms of knowledge were highlighted. Firstly, preschool teachers experiencing the issue of inconsistency in detecting dyslexic children. For instance, sub themes that support this main theme were special modules, screening tools, materials, awareness, initial action and exposure. In order that, when there is no specific modules and uniform screening tools it disable the preschool teachers to carry out early action towards the children. Based on the findings of the study of Anis et al (2018)<sup>10</sup>, it is clear that there is no standard module for Dyslexia classes in Government schools and it prioritizes reading and writing skills over cognitive skills. The impact is huge and has a negative influence on the development of preschool children in terms of literacy and numeracy as well as self-development.

Next, the second issue is the minimum level of competence on the early detection of dyslexia for preschool children. There are several sub -themes that show the issue are traditional teaching techniques, teacher expertise, observation, knowledge, symptoms, diagnosis, teaching methods, teacher education level, length of service, like labeling, causes of treatment, misconceptions. For example, the issue of minimum level of competence can be divided into three aspects in terms of knowledge, skills and attitudes. In terms of knowledge, preschool teachers have knowledge of the general characteristics and symptoms of dyslexia as a whole are high. In fact, the level of knowledge in how to diagnose, treat and prevent dyslexia is still limited and unsatisfactory. There are several results of previous studies supporting this issue including the results of a study by Ramli et al. (2019) commented that the level of knowledge in detail in terms of symptoms, diagnosis, prevention and early treatment for preschool children is still at a very minimal rate. Based on Clerk, Naidoo and Lilenstein (2019)<sup>11</sup>, where teachers have the expertise to identify the level of risk of

<sup>10</sup> Anis, M.Y.N., Normah, C.D., Mahadir,A., Norhayati., Rogayah,A.R., & Dzalani, H. (2018). Interventions For Children With Dyslexia: A Review On Current Intervention Methods. *Med J. Malaysia*, 73 (5), 311-320.

<sup>11</sup> Clark, A., Naidoo, K., & Lilenstein, A. (2019). Adapting A Screening Tool For Dyslexia in IsiXhosa. *Journal of the Reading Association of South Africa*, 10(1), 1-10.  
<https://doi.org/10.4102/rw.v10i1.235>

children in terms of speaking, spelling, reading and writing through observation. Whereas, according to Germano et al (2017), the level of academic competence of teachers in early detection as well has played a role on phonics and literacy for children. In fact, teachers need to have knowledge and take action on children who experience delays in language at an early stage even before Year one by conducting early screening.

On the other hand, in terms of skills, preschool teachers who are busy using traditional teaching methods proved that they are less skilled in identifying dyslexia with a variety of learning methods. This situation is further evidenced by the findings of a study by Ramli et al. (2019)<sup>12</sup>, in which teachers failed to detect the characteristics of dyslexic children resulting in the teaching methods used not affecting the children. In addition, Germano et al (2017) found that the application of traditional teaching and learning techniques to all categories of children resulted in failure in detecting dyslexia. From the aspect of attitude, preschool teachers have an attitude of labelling dyslexic children with the words 'sluggish' and 'stupid' when there is no exposure and awareness about dyslexia. In short, a teacher's level of education and length of service do not determine a teacher's credibility in early detection of dyslexia even if his or her level of education is high such as diploma, degree and length of service of more than three years. Thus, issues of the level of knowledge, skills and attitudes of preschool teachers have a dominant impact on the achievement of preschool children in terms of academic and non-academic.

The third issue seen based on the teacher's perspective is in terms of biological and environmental factors. The sub -themes that support this argument are disorders in visual processing, phonological processing disorders, genetic, environmental and neurobiological issues. Based on the results of a study Gonzalez and Brown (2019) <sup>13</sup>found, teachers also argue that dyslexia caused from genetic, environmental and neurobiological factors. In contrast, preschool teachers, the level of knowledge about disorders in visual and phonological processing is very limited. In Gonzalez and Brown's (2019) study, they commented on preschool teachers 'perceptions of dyslexia, which they categorized as a disorder in visual processing whereas some said dyslexia as a disorder in phonological processing. In short, preschool teachers say the issue of biological factors involving elements of mental and physical health as well as intelligence has resulted in failing to detect dyslexia since preschool children. When teachers approach these at-risk children, they cite environmental factors at home as well as at school.

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<sup>12</sup> Ramli, S., Idris, I. B., Omar,K., Harun, D., Surat, S., Yusop,Y.M. & Zainudin, Z.N. (2019). Preschool Teachers' Knowledge on Dyslexia: A Malaysian Experience. *Malaysian Journal of Medicine and Health Sciences*, 134-139.

<sup>13</sup> Gonzalez, M., & Brown, T.B.H. (2019). Early Childhood Educator's Perceptions of Dyslexia and Ability To Identify Students At-Risk. *Journal of Education and Learning* 8(3), 1-12. <https://doi.org/10.5539/jel.v8n3p1>

### 3.0 Conclusion

The younger generation needs to be polished and curbed with learning disabilities such as dyslexia since preschool so that it does not become an obstacle to the development and sustainability of Malaysia. In short, all parties whether preschool teachers, parents or government and non-government agencies should work together to emphasize the early detection of dyslexia before children enter the school world.

### Acknowledgement

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Ramli, S., Idris, I. B., Omar, K., Harun, D., Surat, S., Yusop, Y.M. & Zainudin, Z.N. (2019). Preschool Teachers' Knowledge on Dyslexia: A Malaysian Experience. *Malaysian Journal of Medicine and Health Sciences*, 134-139.

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# TRANSFORMING TEACHING AND LEARNING FOR STUDENTS WITH COMPLEX COMMUNICATION NEEDS USING INNOVATIVE MOBILE TECHNOLOGY: UPS AND DOWN

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## ABSTRACT

Two-way interactions in classroom are remarkably challenging, especially when students with complex communication needs are concerned due to their inability to express their needs and wants verbally. One method that could establish effective two-way teacher-student interactions is through augmentative and alternative communication (AAC) systems. A qualitative study exploring special education teachers' awareness and knowledge regarding high-tech AAC systems was conducted. The barriers and challenges that may hinder teachers from adopting mobile-based AAC systems, and the teachers' expectations of the AAC applications were explored. The qualitative data obtained from semi-structured interviews revealed that (a) teachers are unaware that AAC systems could improve dyadic classroom interactions, (b) teachers face internal and external barriers in implementing high-tech AAC systems in their classrooms, and (c) teachers want AAC systems which are suitable to be used in classrooms. The findings provided insights for transforming classroom teaching and learning using innovative mobile technology for students with complex communication needs.

## 1. Introduction

Teachers and students are two essential entities of education. Interactions between teacher-student, teacher-teacher, and student-student could provide a positive and meaningful classroom environment (Rasmitadila et al., 2017). During instructional interactions, these two entities come together, participate and cooperate to achieve educational goals. Interaction is fundamental between students and teachers during the teaching and learning process in a classroom. According to Dagarin (2004), classroom interaction is a two-way process between the teachers and students in the learning process, in which reciprocally, the teacher influences the students and the students influence the teachers. This implies that when both parties communicate effectively, learning occurs (Dagarin, 2004). Therefore, a two-way teacher-student interaction is a fundamental component that contributes to effective classroom instruction.

Worldwide, about 97 million individuals have some form of disabilities that impede their functional speech, which restricts these individuals from participating in education, employment, healthcare, family life, and community activities (Light et al., 2019). Many of these individuals

have special medical conditions such as Autism, Down syndrome, cerebral palsy, vision and hearing impairment, and other developmental disabilities, which cause them to have complex communication needs (CCN) (Light et al., 2019; Sigafoos & Gevarter, 2019; Singh et al., 2017). Students with CCN endure various difficulties interacting with their teachers and peers in the classrooms that directly impact their social skills, motivation, academic achievement, and behavioural issues.

Augmentative and alternative communication (AAC) systems are created to assist individuals with CCN to communicate. AAC systems include manual signs, communication boards, speech-generating devices, and mobile technology with AAC applications (apps) (Light et al., 2019). Individuals with CCN may use the AAC systems to supplement or replace speech or writing permanently or temporarily, depending on the severity of their speech impairment (Gaba, 2014). AAC technologies have proven to benefit students with CCN improving their receptive and expressive communication skills and remediate their challenging behaviours (Light et al., 2019; Romski et al., 2010). Today, many AAC technologies are created as mobile applications, which can be easily accessible via mobile devices.

Individuals with CCN are turning to mobile devices to assist them in communicating more effectively because mobile devices are a much smaller and less expensive alternative to conventional dedicated AAC devices (Mcnaughton & Light, 2013). However, the implementation of AAC systems for students with CCN in special education schools in Malaysia is minimal (Yasin et al., 2020). Teachers' limited use of AAC systems in the classroom was attributed to a lack of AAC knowledge, skills, and training (Joginder Singh et al., 2020). Therefore, this research aims to shed light on this issue, via asking three research questions:

1. What is the current awareness and knowledge among teachers about high-tech AAC systems that could improve classroom interactions?
2. What are the challenges and barriers that teachers face when implementing high-tech AAC systems?
3. What enhancements and changes do teachers want from high-tech AAC systems?

## 2. Method

### 2.1 Design

This study adopted qualitative research design using semi-structured face-to-face interview. For data analysis, deductive content analysis approach was applied. The deductive content analysis process included the identification of pre-selected categories (themes) and codes (Gale et al., 2013).

### 2.2 Participants and Context

Five female special education teachers were recruited from different integrated special education primary schools in Penang and Kedah states, using a purposeful qualitative sampling approach. These teachers have five to twenty-five years of experience educating students with various disabilities, including students with CCN. The teachers voluntarily agreed to participate in this research. The interviews took place in a pleasant location chosen by the participants. Before the interview session began, the consent of the teachers to document their interviews

were sought. Depending on the participant's choice, the interview was conducted in Malay or English. Table 1 shows the demographic information of the participants.

*Table 1: Demographic information of the participants*

<b>Teachers</b>	<b>Age</b>	<b>State</b>	<b>Years of teaching experience</b>	<b>Teaching subjects</b>	<b>Experience using AAC mobile applications</b>
ST1	39	Penang	13	English	Nil
ST2	41	Penang	14	Arts & Mathematics	Nil
ST3	53	Kedah	26	Malay Language	Nil
ST4	39	Penang	15	Malay Language	Nil
ST5	40	Penang	13	Preschool subjects	Nil
<i>n= 5</i>	<i>Mean= 42</i>		<i>Mean= 16</i>		

## 2.3 Data Collection

The data was collected using 6-item interview questions between December 2019 and January 2020. Before the interview, the study objectives were explained in detailed. The participants were given a sheet containing facts, terminologies, and a brief summary of the research before the interview began. With the consent of the participants, the interviews were digitally recorded using a voice-recording smartphone application called "Simple Voice Recorder." On average, each interview lasted about 45.12 minutes. Table 2 contain the list of interview questions.

*Table 2: List of interview questions*

<b>Interview questions</b>	
1.	In your opinion, is there a need for two-way interaction between teacher and student with complex communication needs?
2.	In your opinion, what are the ways (methods) to improve two-way interactions between teacher and student during classroom instruction?
3.	What do you think about mobile devices that are being used as an AAC system to increase teacher-student interactions?
4.	How likely would you use such mobile AAC system in your classroom to interact with your students for the teaching and learning process?
5.	What will stop you from using the mobile AAC system in your classroom?
6.	What kind of improvements would you like to add to the mobile AAC system that you will use in your classroom?

### 3. Results

The findings of the qualitative interview analysis have been outlined in the categorisation matrix shown in Table 3. The results will be presented based on three main categories.

*Table 3: The categories, sub-categories, and codes of the study*

Category	Sub-categories	Codes
(A) Awareness and knowledge towards high-tech AAC to enhance classroom dyads	Teacher-student interaction is essential	Teachers will know their students' needs and wants
		Teachers can assess students' understanding of a lesson
	Methods of improving teacher-student interaction in the classrooms	Picture cards containing a picture of the discussed topic increase engagement
		Mobile devices and laptops improve participation
		Resources from Internet
(B) Barriers implementing high-tech AAC	Unaware of the AAC systems that could improve teacher-student interactions	Lack of training and knowledge regarding AAC
		Lack of parent-teacher support
		Lack of financial support for purchasing these tools
	Inadequate resources and supports from the surroundings	Lack of space and facilities to accommodate the implementation of high-tech AAC systems
		Full use of high-tech AAC could lead to dependency on the external device and hinder natural speech production
	Believe in myths about the use of AAC	Mobile devices attract peer students' attentions
	Uncontrollable student behaviour with the presence of mobile devices	AAC mobile applications not available in local languages
		AAC mobile applications with irrelevant contents are not suitable for instruction
(C) Enhancements and changes expected from high-tech AAC systems to improve dyadic interactions	Mobile-based AAC systems need modifications	AAC applications should add local languages
		Mobile AAC applications should have contents relevant to teaching subjects
		The vocabulary of the application must be suitable for the students
		The application should have real pictures, videos, own voice, and songs

*(A) Awareness and knowledge towards high-tech AAC to enhance classroom dyads*

The results on participants' understanding of the importance of classroom interactions revealed that all participants recognise the importance of classroom dyadic interactions between teachers and their students. According to them, successful teacher-student dyadic interactions will help teachers understand students' needs, desires, and emotions. Additionally, teachers can measure students' comprehension of a lesson whenever they communicate and answer during instruction. When participants were asked about the strategies they use to enhance teacher-student interactions, all of them commonly use of picture cards to help them increase their students' participation. Here is a statement given by a participant when she was asked about the methods used to increase the two-way interactions with her student.

*ST5 : "I have prepared an A4 paper with images containing land transportations. When I talk about 'car' the student will bring the A4 paper and show the image of a car and say 'car'".*

Three out of five participants said that mobile technology was often used in their classes, mainly to increase student engagement during class. To increase student engagement, they often use mobile devices such as smartphones, tablets, and laptops. Despite this, none of them has ever used these mobile devices as AAC speech-generating devices. One teacher (ST2) claimed that her nonverbal student often follows a YouTube tutorial video in creating arts and crafts, which he can pause, play, and replay at his own pace without having to ask his teacher.

Participants were asked about mobile-based AAC systems that could enhance classroom experiences to gauge their knowledge of AAC systems. The findings revealed that there is a shortfall in AAC knowledge and skills. Four out of five participants have never attended any AAC-related classes, seminars, or formal professional development. Below is the statement was given by participant ST4 when she was asked about her knowledge of the high-tech AAC system.

*ST4: "The courses are not widely available. Hence not all teachers are getting information regarding this; therefore, many teachers won't use this method."*

*(B)Barriers implementing high-tech AAC*

This finding explains the barriers to implementing high-tech AAC systems in the classrooms. Three out of five teachers indicated that implementing mobile devices as a communication tool in the classroom is challenging due to insufficient funding and cooperation, negative perceptions about the use of these AAC systems, and inappropriate language and cultural content of the AAC applications. The lack of parent-teacher involvement was mentioned as a major obstacle when participants debated about insufficient resources and support. Meanwhile, participants want parents and family members to continue use high-tech AAC systems at home after school hours. When participant ST3 was asked about the barriers, she responded as below.

*ST3: "There are no such devices supplied by the education ministry. These devices are expensive and need financial support."*

Three participants see a lack of financial resources for buying these mobile devices as another obstacle to introducing a high-tech AAC system (ST1, ST2, and ST4). One participant (ST3) recommended that these tablets be bought with the students' monthly allowances. Three participants described inadequate space and facilities as barriers to using AAC mobile devices in their classrooms. They clarified that their classrooms are very noisy, cramped, and lack electric power outlets to accommodate the use of high-tech AAC systems.

When asked how likely participants were to use an AAC mobile app in their classroom, all of them were interested in using the high-tech AAC mobile devices. According to one participant (ST1), students born in the technology era will quickly embrace this technology. Few participants, however, feel that using high-tech AAC would lead to a reliance on these external technologies, and therefore do not want to use them for the whole lesson. One particular teacher (ST4) firmly believes that the prolonged use of high-tech AAC could hinder natural speech production. Nonetheless, one participant (ST2) believes that these AAC apps and mobile devices can give her nonverbal student a "voice" to talk.

*ST4: "When students are comfortable using this device, surely they no longer want to talk."*

The uncontrollable classroom is seen as a barrier to implement mobile technology AAC systems in the classrooms. Participants are also concerned that the presence of mobile devices would cause them to lose control of their classrooms. The participants are concerned about their inability to direct other students' attention away from mobile devices, as other students tend to keep their hands on them (ST1, ST2, ST4, and ST5). As one participant (ST1) intriguingly stated

*ST1: "It's too attractive. Once you enter a class, you put a tab on the table; all of them, like ants looking at the sugar, will come together. Even though they don't know what we are going to use it for in the class."*

Adding to factors hindering the AAC implementation is the language and culturally appropriate content of these AAC applications. All five participants showed concern about the language of the AAC applications since most of the AAC applications are available in the English language. They all want the AAC applications to be available in Malay as well. One participant (ST3) stated that in order for AAC applications to be implemented into schools, they must be relevant to teaching and learning materials.

*ST3: "If this device has content not related to teaching and learning content for that day, then this device is not suitable."*

#### *(C) Enhancements and changes expected from high-tech AAC systems to improve dyadic interactions*

The final product reflects the participants' requests for improvements to the current high-tech AAC systems for implementing this technology in their classrooms. All the participants are expecting some modifications to the AAC applications. Every one of them wants the Malay language to be added to AAC applications. Four participants want the contents of the teaching subjects, such as arts, music, mathematics, and so on, to be included in their AAC applications.

*ST5: “The content for ‘Pengurusan Diri’ /Self Management subject and other teaching and learning subjects must be added.”*

Participant ST3 hopes that these mobile apps will have vocabularies that are appropriate for students' cognitive levels. Some participants indicated that AAC applications should provide the ability to add real-world images, play videos and songs, and record their voices.

## 4. Discussion

### 4.1. Awareness and Knowledge of High-tech AAC Systems

The results of this study have answered all three research questions. First, the findings regarding participants' awareness and knowledge of high-tech AAC systems are consistent with previous research by Joginder Singh et al. (2020). Participants recognise the importance of dyadic interactions between them and their students with complex communication needs. Still, most of them communicate with their students using conventional approaches. The majority of the participants are still unaware of the existence of AAC mobile applications. They are unaware that these AAC mobile applications have the ability to turn mobile devices such as tablets and tabs into speech-generating devices, a finding that is close to that of Ghani et al. (2019), who found that 68% of teachers are unaware that AAC apps (GoTalk) can be used as a communication aid. Their lack of AAC knowledge and skills are the source of their ignorance. Participants have never been exposed to high-tech AAC systems training or courses before. Many literature support this finding, where many studies have found that teachers lack awareness and skills in AAC, likely because pre-service teacher training provides little exposure to this topic (Kent-Walsh & Light, 2003; Tönsing & Dada, 2016). Surprisingly, in this study, we found that participants do use mobile devices during teaching and learning sessions to engage students with complex communication needs. However, the use of these mobile devices is limited to accessing the Internet, YouTube tutorials, and Pinterest to be used as teaching aids.

### 4.2. Barriers to Implement High-tech AAC Systems

Second findings lead to barriers to implementing high-tech AAC systems in their classrooms. Teachers want to incorporate high-tech AAC systems into their classrooms, but they are hesitant to do so due to several reasons. The lack of financial support from the ministry of education for the purchase of mobile devices and AAC apps limits the introduction of new technology into classrooms. Agreeing with this finding, Joginder Singh et al. (2020) stated that government funding for assistive devices such as wheelchairs and hearing aids is available in Malaysia, but no funds are available for AAC systems. Parents' ongoing support in training students at home with this mobile technology would ensure that communication skills are mastered in a consistent manner. Students who have more opportunities to communicate using AAC systems at school and at home will learn communication skills much more effectively.

The next finding is very similar to what has been documented previously in past studies: believing that the use of high-tech AAC systems could obstruct students' natural speech. One of the participants raised her concern regarding this matter. However, it has been proven that AAC systems do not hinder natural speech (Romski & Sevcik, 2005). Participants also raised concern about the prolonged use of mobile AAC technologies that could lead to dependency. These are baseless perceptions; more studies are providing shreds of evidence to support

otherwise. The following findings will have a considerable effect on existing knowledge. The presence of mobile devices in the classrooms is said to be obstructing the teaching and learning process due to distractions these devices could bring in. In today's society, mobile devices are no longer a privilege but a requirement. As a result, children are introduced to these technologies at a young age, making them expert users early. Hence, during classroom instruction, students have a propensity to handle mobile devices that are not intended for them. The language and culturally acceptable vocabularies of the AAC apps available in the app stores are also listed as barriers by the participants. Participants see a lack of AAC applications suitable for special education classrooms as a disadvantage, especially those that do not include Malay language or vocabularies that are inappropriate for the teaching and learning process.

### **4.3. Enhancements for High-tech AAC Systems**

The final findings of this study could significantly impact the future of AAC applications. In order to be implemented in their classrooms, the participants demanded several improvements to the existing AAC applications. Participants want the AAC application to include Malay language and content that include syllabus from special education curriculum because language and content have been highlighted as barriers previously. Participants preferred AAC apps that would assist them in the teaching and learning process, so they requested some additional features that could transform AAC apps into a flexible all-in-one teaching aid. This may be due to their lack of understanding of the AAC systems' true purpose. None of the participants had previously used augmentative and alternative communication applications, which may explain their ignorance.

## **5. Limitation**

This research does have some limitations. The gender of the participants may have influenced the study's outcome. An equal number of participants should have been used to avoid bias in the findings. In special education programmes, the number of male teachers is extremely low. Hence, it was much easier to find female teachers as participants. Furthermore, due to cultural norms in Malaysia, it is uncommon for a female researcher to conduct a face-to-face interview with a male participant in public places. The following limitation is the inability to compare results with previous studies due to a lack of prior studies related to this topic. This may be explained by the fact that other researches concentrate on AAC systems in general and not specific to AAC applications.

## **6. Conclusion**

Dyadic classroom interactions could provide a supportive and productive classroom atmosphere. The interaction between teachers and students with complex communication needs, on the other hand, is not a topic that is frequently discussed in the literature. Nonetheless, this area needs a lot of focus since the Persons with Disabilities Act of 2008 states that no student with a disability should be denied their right to education. They must be supported with provisions and accommodations, such as facilities, instructional materials, infrastructure, and other types of assistance that meet the diverse needs of individuals or children with disabilities to pursue education (Persons with Disabilities Act 2008, 2018). There are strategies for increasing classroom interactions for students who have complex

communication needs. The high-tech AAC system is one approach that could help students with CCN reach their full potential.

Nonetheless, this technology is still foreign to special education teachers. They still lack the necessary knowledge and skills to incorporate this technology in their classrooms. Aside from that, several factors prohibit them from using mobile devices with their students during the teaching and learning period. Teachers' primary concerns are financial support, parent-teacher cooperation, inadequate facilities, uncontrollable classrooms, and finding a suitable AAC app. Eliminating these obstacles will make it easier for teachers to integrate high-tech AAC systems into their classrooms. Teachers want to use the AAC apps, but they want some changes made to these apps to suit their classrooms. Teachers are dynamic individuals who are always willing to help their students with the available technologies. What they need is assistance from their surroundings. Providing them with the necessary resources and technologies would enhance their teaching and learning, resulting in a positive development for students with complex communication needs.

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# LEARNING MODULE DEVELOPMENT: LIVED EXPERIENCES OF TEACHERS IN THE HIGHER EDUCATION INSTITUTIONS IN THE PHILIPPINES

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## ABSTRACT

Tertiary education is the aspiration of more and more young people worldwide and a primary requirement for employment in various industries. Still, a sudden shift happened when the COVID-19 came in. Moreover, the recent problem brought by the pandemic made the whole educational system of the world change. With the growing problem, tertiary education has to divert its face-to-face instruction to a more suitable situation. In pursuing a continuative learning process, schools then used resources available to develop learning modules due to unstable internet connectivity. Therefore, the teachers need to look at the teachers' experiences in learning modules to see what other interventions might be effective. This qualitative study examines the lived experiences of teachers in tertiary education institutions in the Philippines. The Colaizzi strategy by Shosa (2012) analyzed the participants' narrative responses. It brought the themes that speak of the positive and negative experiences in adapting the modules for instruction, injecting creativity in making learning modules, new teacher activities using modules, and doing student-centered modules. After working with the themes of the narrative given by the participants, the researcher then concluded that the need for teacher training for the success of teaching in higher education is needed given the reality that the Philippines has been numbered as one of the countries whose internet connectivity is weak. Adapting flexible learning modalities through modules is a tool in making learning effective and considerate for both teacher and learner in this current pandemic. Re-tooling and enhancing the capacity of teachers in higher education will greatly help so that the modular instruction as means for teaching be that effective.

**Keywords:** Learning Modules, Flexible Learning, Higher Education Institutions, Lived Experiences of Teachers, and Modular Teaching

## 1. Introduction

The whole world has recently experienced the incredible devastation of the COVID-19 pandemic—one of the greatly affected sectors in all countries in the industry of education. The education industry, which delivers learning among constituents, is now challenged by the Pandemic (Onyema, Eucheria, Obafemi, Sen, Atonye, & Sharma, 2020). Various schools, especially in higher education, were advised to cancel the face-to-face discussion that could be

a way to infect students with those who have the virus. Schools have already established a Learning Management System and other platforms to cater to the needs of the present condition (Murphy, 2020).

Along the way of addressing the problem, there has recently been growing interest in developing learning modules for self-paced learning, essential and practical in the pandemic. As indicated in education principles, many shreds of evidence manifest that best learning occurs in learners when they do it by themselves, targeting a specific learning task and finding success in it (Burge, 2019). Learning Modules are believed to be tools that sequentially give course materials indicating the teacher's content and assessments (University of Florida, 2020). However, the purpose of doing a module would not end there. Once the learning modules are done, it is essential to understand the things inside the learning modules, especially those crafting them.

In the Philippines, both the Department of Education and the Commission on Higher Education made alternatives in addressing the pandemic events. The Department of Education made Sulong EduKalidad, which believed in moving forward together to prepare the future's educational system. They assured that every action would always consider the safety of the teachers and learners. They are now crafting a comprehensive Learning Continuity Plan (LCP) that addresses the time's challenges through the necessary adjustments in the curriculum to align with the learning materials and have relevant support to teachers and parents (Department of Education, 2020). On the other hand, the Commission on Higher Education released a series of advisories entitled 'Guidelines for the Prevention, Control, and Mitigation of the Spread of Coronavirus Disease 2019 (COVID-19) Higher Education Institutions (HEIs)'. In advisory no. 7, the Commission highlighted the guidelines on how and what preparation universities and colleges should work upon the upcoming classes as to what and one highlight is the 'Adoption of a flexible learning strategy or mode in delivering instruction by ensuring appropriate (1) Facility Delivery System (2) Faculty Complement, and (3) Student Support.

Moreover, summer classes are only allowed to have online courses When CMO no. 4 s. 2020 was released, it becomes the guiding principle among Private and Public Universities and Colleges in implementing Flexible Learning. The said memorandum requires all HEIs to utilize all resources and technology to address learning in this pandemic. Moreover, it mentioned various modalities in implementing flexible learning and teaching, and one of the modalities mentioned in the offline modality. The offline modality mentioned is printed module and audiotapes, videotapes, C.D.s, storage devices, learning packets, television or radio broadcasting networks, and Portable Learning Management System. (Commission on Higher Education, 2020).

In their paper, Willmot and Perkin (2016) highlighted that the module writer was also a personal tutor. In their findings, these private tutors were finding it hard to formulate their modules, but after which, they found them compelling because the students now engaged with them. Furthermore, although the primary goal of developing a learning module was to have successful self-paced learning among learners in this pandemic, one can never deny those behind the development of learning modules. However, the following studies never addressed the issues of the challenges and the experiences encountered in the crafting of such learning modules. Few pieces of literature speak about these issues.

This research sought to explore teachers' lived experiences in higher education institutions in developing learning modules. Exploring their experiences is very important to know to address their concerns in making or developing learning modules.

## 2. Methodology

This study is a qualitative research design employing an exploratory method since the study would explore teachers' experiences in higher education institutions.

The respondents of the study were the teachers coming from higher education institutions in the City of Catbalogan. There are three (3) Higher Education Institutions (HEIs), and there were five (5) representatives for each institution. Teachers from Higher Education mentioned they have the following qualifications: (1) Full-time Faculty; (2) at least five (5) years in service as higher education teacher; and (3) already have the experience of developing a learning module.

A semi-structured interview protocol was used to carry out this research study. The researcher allowed the participants to elaborate and provide more flexibility, range, and, therefore, to elicit more information from the participants. The survey of O'keeffe, Buytaert, Mijic, Brozović, and Sinha (2016) concluded that semi-structured interviews could easily and quickly facilitate. Moreover, the Robert Wood Johnson Foundation (2018) explains that such kind of interview happens through observation, including the informal and unstructured interview, to have a clear understanding of the topic and the interest of developing questions that are significant and meaningful in a study.

In the data analysis, the researcher used Phenomenological data analysis by the Colaizzi strategy by Shosa (2012). Her paper presented the following steps to analyze the respondents' interviews. The phenomenological narrative given by the participants will undergo the following processes: First, there would be a reading of transcripts several times to gain a sense of the full content. Second, there would be taking notes of the respondents' significant statements from each transcript. Third, in this stage, there would be giving meanings to the significant statements. Fourth, after having an agreement toward all formulated meanings, grouping and acquired implications were taken from each category to reflect the themes' unique structure. Fifth, the themes were arranged into a detailed description at this analysis stage. Sixth, this step is similar to the previous step, but there would be no specific meanings. Seventh, this step aimed to validate the study findings using the checking technique.

Moreover, approval to conduct the study was granted by the Ethics Board and Research Committee of the University in which the study took place. Informed consent was obtained from all participants, and confidentiality was assured.

## 3. Results and Discussions

As the COVID-19 pandemic challenges in the education sector, schools and Universities in the Philippines make their strategy in addressing the various unexpected changes that should be adopted. The researcher then was able to have four (4) major themes with various sub-themes in each major theme. These themes are presented below:

### 3.1. Theme 1: Positive and Negative Experiences in Adapting the Use of Modules for Instruction

The reality of the pandemic is for teachers to adapt to the call of 21<sup>st</sup>-century teaching. Though this call has been advocated for a long time, some would not embrace it, given that various

hindrances are beyond the control of schools and teachers. Various sub-themes have presented the positive and negative experiences that teachers have to adapt modules for instruction. Sub-themes are given below:

### **3.1.1. Unprepared Disposition for Modular Instruction.**

The unprepared disposition for modular instruction is true to all educational institutions all over the world. This unprepared disposition was captured by the researcher among participants of the study. Participant 9 (L73-74), in her statement, mentioned that "*I still have some reservations because I am used to crafting modules that will serve as supplementary or partner the face-to-face discussion.*" The unprepared experiences highlight the study made by Dejene (2019) when he mentioned that modularization had a significant impact on the school system. He added that instructors had the inadequacy of time and the universities' assessment policies that make them less committed and violated their professional ethics. Moreover, due to unexpected events, supplies to produce learning modules are insufficient. One of that was mentioned by Participant 10 (L771-772), "*No printers and inks, you must try to buy a personal printer to accommodate finished outputs.*" Baysinger (2020), in the seventh consideration, underscored that there must be a consideration as to the believed other types of equipment and materials they used to deliver it properly. But despite this, there were veterans and newbies in the adaptation of the learning modules. Participant 15 (L170-171) expressed that, "*Module is not a stranger to me because being experienced, with my age experience in teaching.*" This concern was highlighted in the study of Nardo (2017) added that integrating learning modules in the classroom was not new because other countries had embedded them in their school system for a long time. Rufii (2015) also agreed this claim highlighted a significant shift of emphasis that happened, which is from teaching to education.

### **3.1.2. Benefits of the Modules.**

Aside from the unprepared experience, teachers in higher education institutions have seen the benefits of the modules though there are existing challenges. They highlighted that this compressed the teacher's work in a semester as mentioned by Participant 4 (L540-542), "*It compresses the work of teachers that you have to finish the whole module for the prelims then followed by the midterm module,*" another is it alleviates the pressure and burdens as said by Participant 7 (L573-574), "*I realized that having modules is helpful and could alleviate some of the pressure and burden of the instructor*"; they gained personal benefits expressed by Participant 7 (L554-555), "*I have gained in the process of developing my learning modules*" and was seconded by Participant 8, "*I can share lessons with my students through the learning modules and at the same time learn from the lessons given*, especially updating their professional growth emphasized by Participant 10 (L282-283), "*I have felt the need to continue education and sway the academic freeze away.*", and resourceful in gathering references as highlighted by Participant 15, "*The module helps me to search more because the book is limited, the module is not.*" Various researchers and article writers supported the various benefits that they have mentioned. The article entitled Learning Module (2020) mentioned that learning modules are defined as an organized collection of the content presented together and can support a given course's full range. The things done in a semester can be done and put into one learning module because they can design it as what appears in the syllabus, added by the article. Their experiences of becoming resourceful in developing a learning module capture the ideas presented by Kalanzis and Cope (2020) when they mentioned that the teacher resource site included links to the purpose of particular activities, links to standards, and teaching tips.

They also added that the teacher could share plans with colleagues, the school division members, or a professional grouping extending beyond the school's learning modules.

### **3.2. Theme 2: Experiences in Injecting Creativity in Making Learning Modules**

As higher education in the Philippines continually answer the call of 21<sup>st</sup>-century teaching. Teachers make sure that the module will never be that far from the experiences learners have in the classroom. Along their way of doing the modules, the researcher could capture their experiences in doing modules to make effective teaching using this learning material acknowledged by the Commission on Higher Education. Various sub-themes have presented their experiences in the creative development of the learning modules. Sub-themes are presented below:

#### **3.2.1. Limited Features of the Module.**

Along the way of their development of the learning modules, there were identified limitations such as the things that would and could happen in the classroom, skill subject's delivery, mastery of a teacher in terms of subject matter, and the students' interpretations of a lesson. Participant 14 (L162-163), "*In teaching face-to-face, you can say something, you can ask something even the facial expression of the teacher wherein we cannot do it in the module.*" This statement was also seconded by Participant 14 (L358-360), "*Although there are drawbacks because like let's say, for example, we are teaching skilled subject, like my baking class this semester that even up to now I'm still trying to figure out how I'm going to deliver or how I'm going to teach the students one by one.*" The observation made by the participants were also seen in various researchers; Baysinger (2020) cited specific considerations to be made regarding the exact outline and dividing the topics into the modules. Even if it covers the syllabus's entire content as defined by the article Learning Module (2020), added that clear outline that would not cover the classroom's usual things. On the aspect of skilled subject delivery, it would not be carried in the learning module; this was mentioned by Nadas and Vidal (2020) when they saw the disadvantage of modules. Moreover, there is a danger of destruction and inconsistency to the learning programs because of the curriculum's delivery method and assessment practices. Fox (2020) also agree when she said that one of the disadvantages was the lack of practical knowledge, which is very important in a specific program. This lack of skills integration in the module might worsen a learner's performance or even the program, as mentioned in the study. The limitation on the aspect of teacher's mastery of the subject matter was identified as one of the disadvantages in the same research when they said that deadlines of units could limit a teacher's ability to teach essential topics in the ways that the teacher would choose. These activities and content of the module determined the mastery of the teacher in the subject matter. Also, Baysinger (2020) mentioned it when he said it was hard to maintain (mastery of subject matter) significantly when the content is changing rapidly. This seen limitation hinders the faculty from coming up with useful learning modules.

#### **3.2.2. Creative ways on Module Development.**

As Teachers in higher education institutions see the modules' problem as to the content of the module, various strategies are being used by higher education faculty to have effective teaching. For example, Participant 15 (L375-376), "*I give the modules more information about the topic, and I found out new technologies that I only hear from each teacher.*"; they could be modified from what is significant and not. The guidelines provided or seen by teachers helped

the development of learning modules easier; this was captured in the statement of Participant 9 (L445-448), “*Guidelines are good because it organizes and streamlines the process. It also gives an idea as to how the topic may be approached or developed by the teacher.*

*On the other hand, guidelines that are not well-crafted more were haphazardly done could do more harm than good.*” The creativity made by the teacher in searching guidelines was supported in the study of Kalanzis and Cope (2020) study when they emphasized the teacher’s role as a learning designer rather than just a curriculum implementer and a channel of syllabus and textbook.

Moreover, these revisions that make them creative make sense with what Burge (2019) mentioned about the three (3) key things to think about when designing a learning module. The second key highlight is that the module is constructively aligned to actively construct their understanding and alignment with the teaching and assessment with the intended learning outcomes. That is why teachers must be creative in their module development.

### **3.3. Theme 3: Experiences of the New Normal Teachers’ Activities**

With these sudden changes, teachers in higher education have to adapt to various changes in their teaching activities. This major theme was captured in the responses of the participants of the study. Various sub-theme in support of the major theme is enumerated below:

#### **3.3.1. Observable Changes in Teacher and Student Activities.**

Changes in activities of both faculty and learner are immanent among the experience of the faculty participants. Participant 12 (L315-316), “*The preparation before every class because it would be different if the students will be reading. Things like that make it a big help and relief for us in preparing before class and feeling nervous before you face the class.*” On the other hand, the statement the otherhand is in opposition with what Yildiz and Tatik (2019) highlighted that the classroom environment plays a significant role in ensuring students’ participation and success in the classroom. Moreover, they highlighted that the teacher could make changes in the classroom set-up for conducive learning, and students, on the other hand, could help the teacher and contribute to this process. The study of Yildiz and Tatik (2019) gives the regular class's idea to make students participate in learning. But with the new setup of education, the teachers have to do the same with the module so that they would be that participative in the learning modules. Moreover, another change was highlighted by Participant 12 (L801-803), “*The checking part, it is time-consuming because I have to copy the answer and then I have to search in Google to see if how many percent did, they copied from the source.*” This observation is accurate as Murry (2020) mentioned that the pandemic caused the changes in teaching and learning activities in the classroom. One of the concerned activities is checking the student’s activities—making sure that it is not a copy-paste work that has been observed. Also, Participant 3 mentioned, “*The interest depends on the students’ time of management because of the many assessments (L679).*” The observation of the change in interest was observed by Baysinger (2020) when it was mentioned that it was impossible to ask the instructor questions or learn from others’ questions about learning the same topic. This same disadvantage was the teachers’ problem; they do not know if students are learning or have met the standard. The same was accurate with the study of Tedla and Desta (2015), highlighting the students' poor performance caused by the modules.

### **3.3.2. Observable Change of Experiences in Time Schedule of Teachers.**

Changes in the teacher's activity also include the schedule that they are rendering and using. For example, Participant 13 (L 122-125) mentions that "*There is no more time to balance between the distribution of the modules to students and the monitoring part.*" The same observation was raised by Participant 15 (L 177-178), "*The problem encountered also is the time frame because not in comparing there is also a difference in the house and the classroom.*" Baysinger (2020) supported their observation and experiences when she identified that it frequently took novices to learn via tutorial than via classroom. The same findings were also seconded by Nadas and Vidal's (2020) study when they mentioned that one of the disadvantages of the learning module was that it affected the teacher's ability to submit on the deadlines of the unit and cover the essential topics of the whole course. They also added that there was an overlapping achievement of short and long-term goals.

## **3.4. Theme 4: Experiences of Making a Student-centered Learning Module**

Teachers in higher education institutions do a creative learning module for effective learning among students. Moreover, in the development, the theme of making the learning module a student-centered one is captured in treating the participants' phenomenological narrative. Various sub-themes in support of the major theme is showed below:

### **3.4.1. Enriching the Content of Learning in the Module.**

One of the seen techniques that would make a module firm support in the learning among students is to enrich the content in the learning module. Moreover, Participant 1 (L653-655) mentions that "*In my part, I would monitor them by giving them supplemental activities as a secondary attack for the module.*" Shelton (2016) suggests that using various methods meets the needs of different learning styles, which has been the techniques of other teachers to make their module a student-centered one. Also, Kalantzis and Cope (2020) advise that the teacher's task in the learning module development is to commit their learning design to the digital record and make the learning module of great local relevance.

### **3.4.2. Creating a Student-Friendly Module.**

In enriching the content inside the learning module, it is important to let students feel that they are still in the classroom and how they are being considered during the pandemic. Participant 1 mentions that "*You already have the standards, but you are still willing to enrich it to make the learning process more effective even if it is a modular approach of learning.* (L 392-394)." Also, Participant 3 added that "*Although you have already formulated your guidelines in developing your learning modules, still you need to adjust to assist the students in meeting the standards* (L402-405)." Their sentiments were seen in the study of Nadas and Vidal (2020) agree with the teachers' style in making the module a student-friendly module. According to them, students could utilize an approach that makes it easier for them to stay on track with their studies and effectively manage their time.

Moreover, according to them, this kind of style of module development enables students to plan their lessons. But, on the other hand, teachers make a follow-up with the students through social media. Also, according to the study of Nardo (2017), teachers become

enthusiastic by monitoring students' activities, which was more purposeful, especially with students who need more guidance and attention.

## 4. Conclusion

Based on the results of data processing and data analysis, teacher training for the success of teaching in higher education is needed given the reality that the Philippines has been numbered as one of the countries whose internet connectivity is weak. Adapting flexible learning modalities through modules is a tool in making learning effective and considerate for both teacher and learner in this current pandemic. Re-tooling and enhancing the capacity of teachers in higher education will greatly help so that the modular instruction as means for teaching be that effective.

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# COMMUNICATION LEVEL OF TRAINEE TEACHERS FROM INSTITUT PENDIDIKAN GURU KAMPUS PENDIDIKAN TEKNIK WITH AUTISTIC CHILDREN

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## ABSTRACT

This concept paper describes a study which will be conducted to identify the level of communication among trainee teachers at the Institut Pendidikan Guru Kampus Pendidikan Teknik (IPGKPT) with autistic children. A simple random sample selection will be implemented and 52 trainee teachers will be selected. This study will also use a quantitative method by using a questionnaire instrument. This method is the easiest way to obtain data to determine the level of communication of trainee teachers IPGKPT with autistic children. Researchers will use descriptive statistical methods to analyze the data collected with the help of Social Science Statistics Package (SPSS) programming software where it can help researchers to produce accurate calculations. Accordingly, the data analysis that will be done will also involve calculations using medians, percentages, mean scores and standard deviations for the variables involved. In fact, the data will also be translated in the form of graphs, tables or charts so that it is easier to understand. This study is anticipated to inform about the level of communication the teacher trainees have with the autistic children.

## 1. Introduction

The teaching profession is not just teaching or imparting knowledge, but teachers also need to educate someone's attitudes, values and morals. The efforts to enhance the prestige of the teaching profession must be implemented in an orderly and systematic manner. This is because the role of teachers is very important to achieve the objectives of national education that have been set. Therefore, the interpersonal communication skills among the trainee teachers should be trained well so that we can produce teachers who are knowledgeable and able to communicate effectively in the future (Ab. Hamid et, al., 2017). Communication in the teaching

profession is very important aspect because through communication, knowledge and information can be conveyed to students.

According to Nor Afiah & Muhammad Talhah (2020), Autism Perspective Disorder (ASD) consists of neurological disorder which affects an individual to have difficulties to interact socially with other individuals. In addition, autism is also interference in neural development that can cause individuals abilities in performing certain things including repetitive communication, behavior, speech and skills (Rea, LaMotte, & Burrell, 2019) to be limited. As a teacher, we need to be prepared to manage the students with autism. This is because trainee teachers do not know which school they will be placed after they are graduated and there are possibilities that will require trainee teachers to deal with autistic children in the primary class.

## 2. Problem Statement

Teaching practice or better known as practicum is one of the mandatory components in the teacher education program that needs to be followed to help trainee teachers in applying the theories and models learned in real situations in school. The involvement of trainee teachers in teaching practice or any external program can help trainee teachers in communication skills. This is because as a prospective teacher, they need to have good interpersonal communication skills. According to Raudah (2017), interpersonal communication is a two -way interaction between two or more individuals that is carried out to obtain information, understand the surrounding and to adapt in the communities. As a trainee teacher, they need to have good communication skills because it will help them in the teaching and learning process in the classroom and help them to establish good relationships or interactions with students, especially for autistic children. Through interpersonal communication, they can establish a friendly relationship and can change the atmosphere in the classroom thus can help students in their learning.

Referring to a study conducted by Tay Mey Guat (2013) and Khalip & Hariza (2015) found that the interpersonal communication skills of trainee teachers are still at a moderate level. Therefore, the responsible parties must ensure that interpersonal communication skills among trainee teachers can be improved and enhanced from time to time. According to Fatin Sophia (2021), children with autism have a limited imagination which causes their interest in something is also limited and they also often do the same and repetitive behaviors. Therefore, as trainee teachers, we need to be prepared to handle and know the appropriate ways or steps to communicate with autistic children. This is because children with autism are usually unable to engage in communication skills and find it difficult to interact with others. Therefore, the study that will be implemented is very important in helping the parties involved to help trainee teachers in improving communication skills to deal with students with autism in school. For this research, data will be collected through a quantitative approach where a questionnaire will be distributed to trainee teachers from the IPGKPT. Each item in the questionnaire will be verified by the experts involved.

## 3. Objective

The objective of this study is to:

1. Identify the level of mastery in interpersonal communication among IPGKPT's trainee teachers with autistic children.

## 4. Research Questions

To achieve the set objectives, there is a research question which is:

1. What is the level of mastery in interpersonal communication among IPGKPT trainee teachers with autistic children?

## 5. Literature Review

Past studies that have been referred emphasize the relationship of teachers' interpersonal communication skills. Through these previous studies, it will help researchers in the implementation of the study that will be done where it can be used as a reference source. For example, in 2017, Tay Meng Guat noted that interpersonal communication skills by trainee teachers were at a moderate level. This is supported by several other studies such as Mohd Faez et, al., (2016). However, these studies are denied by the study of Irene Priskila Sareong & Tri Supartini (2020) where researchers stated that teachers' interpersonal communication is at a high level of 80%. However, this study was conducted in Indonesia. So, the study that will be conducted by the researcher will determine and provide the latest results whether the interpersonal communication skills of the trainee teachers are still at a moderate level or the results will increase, especially with autistic children.

In addition, researchers found that previous studies focused on the interpersonal relationship with student performance in school. According to a study conducted by Widya P. Pontoh (2013), Nurudin (2019), Tri Nuria (2020) and Irene Priskila & Tri Supartini (2020) who stated that teacher interpersonal communication affects student achievement and activity in the classroom. This is because through interpersonal communication skills, teachers and students can establish a good relationship and it can also help students if they have problems. However, all these studies were conducted and proven in Indonesia. For this study, the researcher will take respondents from students of the IPGKPT, Malaysia. Most likely the findings that will be obtained are not the same as the findings from Indonesian researchers. However, in the Malaysian Education Development Plan (PPPM) 2013 - 2015 there are six important elements in Student Aspirations that need to be developed in students or students namely Knowledge, Thinking Skills, Leadership Skills, Bilingual Skills, Ethics and Spirituality and National Identity. (Ministry of Education Malaysia, 2013).

Widya P. Pontoh (2013) explained that the proper use of language in communication can help students in understanding the content of learning. This is in line with PPPM 2013 - 2015 which is to produce students who are bilingual. Through the proper use of language in teaching can encourage students to use the language. For this study, the researcher can encourage trainee teachers to build interpersonal relationships with autistic children through proper communication techniques in order to build a good relationship between trainee teachers and autistic children. If a close relationship is formed, a cheerful learning environment can be produced and it can also prevent students from being stressed while communicating with others.

In this regard, the findings of a previous study from Aziz & Siti Sumaziana (2017) found that trainee teachers need to have the interest and skills to teach students in schools, especially with special needs students such as autism students. This is because if the trainee teachers are not interested in socializing and building relationships with autistic children, it will create more problems. For example, students can not learn well because the teacher does not have the

encouragement to teach and use teaching aids that are less interesting. One of the skills that trainee teachers need to master is communication skills. This is because, through communication, trainee teachers can establish good relationships with students especially with autistic children so that they can interact and cooperate with each other (Raudah, 2017). In fact, trainee teachers are also able to solve various problems well if they have good communication skills (Ljubica, Jasmina & Anamarija, 2015). Where, Rochmad (2020) argues, through interpersonal communication skills, teachers can also motivate and encourage students to express their feelings to help in solving problems faced.

For autistic children, it is quite difficult to interact due to their solitary nature. However, teachers should work hard and be creative to establish a good relationship with them. The aspect of communication that needs to be emphasized by the trainee teachers is that we need to use the correct terminology with standard language that is easily understood by the students. In addition, the trainee teacher also needs to use a clear and strong voice so that students can understand learning. This is because, a slow voice can cause children to pay less attention, especially autistic children. (Aziz & Siti Sumaziana, 2017).

In this regard, the study made by Fajri Agustin & Hamdani (2017), trainee teachers need to have characteristics such as openness, empathy and positive thinking to help them in establishing good relationships and be able to communicate with autistic children. Moreover, the content of the messages conveyed need to be equivalent with the language they use (Yunita, 2021). If teachers use poetic language, it will be difficult for autistic children to understand the message. In fact, the study also emphasizes teachers to use a material as a support tool when communicating with autistic children. This is because through the material, these children are more interested in listening and communicating with us. In addition, Kuntjoro (2017) said, to build a good relationship with autistic children, teachers should have a good relationship with their parents. This is because, through this relationship, it can help teachers find ideas to help children with autism communicate.

## 6. Research Design

According to Mahaya (2016), study design is a way for researchers to implement a study by determining the use of methods or techniques to answer the questions. For the research to be implemented, the researcher chose to use a descriptive quantitative study design through survey method. This design is used because it can help researchers to survey the level of communication of trainee teachers in IPGKPT with autistic children. Lee Keok Cheong et, al., (2018) stated that the survey method is an appropriate method used to describe an ongoing phenomenon. The appropriate data collection method used in this survey research is through data collection from questionnaires because it can provide information, data or findings from respondents clearly to the researcher (Norhayati & Aida, 2018). Therefore, the researcher will prepare a set of questionnaire forms to be answered by the selected respondents.

## 7. Instrument

Research instrument is a tool used to obtain data and information related to a research that will be implemented. This research instrument will also be used by the researcher to achieve the set objectives and questions (Norliza et. Al, 2020). There are various methods that can be used by researchers to conduct this study. Researcher will use quantitative methods. 60 trainee

teachers will be selected randomly to participate in this study. For this study, the researcher will use a questionnaire instrument where this method is the easiest way to obtain data to determine the level of communication of IPGKPT trainee teachers with autistic children, by using a Likert scale. According to Salwati (2013), the questionnaire constructed should be relevant to the purpose and objectives of the study stated by the researcher so that the questionnaires do not deviate to other things. This is because it will cause problems in the data analysis that will be implemented if the distributed questions are different from the main purpose of the study implemented. Items used in the questionnaire will be refer from and improved from previous studies. In addition, the questions provided should also be clear so that respondents are not confused and make it difficult for them to answer the questionnaire. Data collection is done by distributing online questionnaires to the 60 respondents. Data analysis will be carried out using the SPSS program to generate the frequency, the percentage and the mean. The teacher trainees' level of mastery in interpersonal communication will be determined by the mean score.

## 8. Conclusion

This study is hoped to inform about the teacher trainees' level of mastery in interpersonal communication with autistic students in the inclusive classroom. As these trainees have undergone courses about special needs students including the autistic students, it would be enlightening to see how these trainees perceive their level of communication with regard to autistic students.

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## PLAY-BASED INTERVENTION TRAINING PROGRAM FOR DAYCARE WORKERS ATTENDING TO CHILDREN WITH AUTISM

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### ABSTRACT

This research studied the teaching improvement of daycare workers in imitation, joint attention and language activities using the play-based early intervention training program in Cabanatuan City, Nueva Ecija. Focus group discussions were developed to explore the attitude, beliefs and practices of daycare workers. Findings of the study revealed that daycare workers have existing knowledge and experience in teaching children with Autism. Their workshops on managing inappropriate behaviors of children with Autism resulting in a general positive perception on accepting and teaching children with Autism in daycare centers. Play-based activities were modelled and participated in by daycare workers. These include demonstration, modelling, prompting and providing social reinforcers as reward. Five lectures and five training days were done to implement the training program. Daycare workers' levels of skill in teaching imitation, joint attention and language were gathered before and after the participation in the training program. Findings suggest significant differences between pre-test and post-test scores. They have shown significant improvement in facilitating imitation, joint attention and language children with Autism after the play-based early intervention training. They were able to initiate and sustain imitation, joint attention and language activities with adequate knowledge and confidence. The following conclusions were drawn, existing attitude and beliefs greatly influenced the positive delivery mode of instruction, teacher-directed approach to improved attention, imitation, joint attention and language of children with Autism can be acquired by daycare workers and teaching skills and experience can be used as reference and basis for identifying future training needs.

**Keywords:** Early Intervention, Play, Day Care Workers, Autism

### 1. Introduction

Daycare workers of children with autism are currently facing challenges in meeting the initial intervention needs whether learning, behavioral or social inside their classroom. Programs for children with autism inside the classroom have limited exposure to strategies for modification and accommodation (Volkmar et al., 2011).

Children have varied abilities and needs with individual pacing of development, often exhibiting a broad range of skills. Children with special needs is also present that should always be given attention and be included in the early childhood programs (Squires & Bricker, 2007).

Knowledge in modifying daycare activities accommodate the center needs of children with autism is necessary (Flynn, 2011). Furthermore, as the qualification for daycare workers in the Philippines requires that they possess a high school diploma at minimum, they oftentimes cannot perform teaching and instructional tasks. This justifies the need to equip them with continuous training and enhance their delivery of instructions. Child-care workers who have been exposed to training, seminars, and workshops were more responsive to the classroom needs of children. It was reported that children in their class exhibited an above average academic level (Burchinal et al., 2002).

Play activities to increase socialization is important in the early education curriculum. Children with autism have limited play engagement. Given this, daycare workers must make effective intervention techniques in using play and to make it happen inside the classroom (Volkmar et al, 2011).

Since the daycare workers lack necessary skills in teaching children with autism due to inadequate training, ready-made activities must be handed over to them. Intensive training on how to implement these activities must also come with the package. Further, daycare workers handling children with autism should learn lessons to teach on imitation, joint attention and language (Flynn, 2011).

This research attempts to strengthen their ability to facilitate imitation, joint attention and language to their pupils with autism so that they can help them address such needs. In the initial informal observations, the researcher observed that these skills mentioned were lacking.

Preparing daycare workers of children with autism is an important aspect in inclusive education. Based on early intervention necessity and expected positive outcomes, daycare workers need to acquire new set of skills, practical experience and knowledge on program planning and implementation (Barnes & Smukler, 2009). Through play, children are introduced to build relationship, express themselves, and with surroundings full of trust and acceptance. Child-directed play offers these and enables them to apply the social skills that are prerequisite to higher social functioning in the home, school and community settings (Terpstra et al., 2002).

## **1.1. Statement of the Problem**

This research study explores daycare workers' attitude, beliefs and practices on children with autism and identifies the capacity and needs of daycare workers in relation to their practices in helping children with autism.

1. What existing attitudes, beliefs, and practices do daycare workers have in managing students with autism?
2. What is the level of skills in teaching imitation, joint attention and language among daycare workers?
  - a. Before intervention
  - b. After intervention
3. Is there a significant difference in the skills in teaching imitation, joint attention and language among daycare workers after intervention?
4. What are the components of play-based early intervention programs for children with autism that daycare workers find to be significant?

### **1.1.1 Significance of the Study**

This study aimed to teach daycare workers how to use play as an early intervention program in teaching children with autism. Since the prevalence of autism is rising and the need for early intervention is very crucial in identifying and addressing the developmental problems as early as possible, the need for these teachers to equip with teaching skills is necessary. The proposed Play-Based Early Intervention Program may augment their teaching skills to accommodate children with autism in the daycare. It may serve as one of the alternative early intervention programs that support daycare worker training, quality and cost-effective educational intervention for children with autism.

### **1.1.2 Scope and Delimitation**

The study focused on creating play-based early intervention training program for daycare workers of children with autism. The play-based early intervention training program focused on imitation, joint attention, receptive and expressive language teaching skills of daycare workers. These concerns are chosen because these were observed as lacking based in initial informal observations and interviews. These were the areas of concern that were expressed by the daycare teachers and were addressed by the study through the play-based early intervention training program.

The study was conducted among fifteen daycare centers in Nueva Ecija who had children with autism enrolled in their classes. There were ten daycare workers who participated in the study. Initially, all fifteen daycare workers in the study participated in the study but five of them dropped out because they no longer showed up during the succeeding interview sessions.

## **2. Review of related literature**

### **2.1. Autism**

Autism spectrum disorder was originally defined as a developmental disorder where socialization and communication are impaired associated with restricted, repetitive, and stereotyped patterns of behavior (American Psychiatric Association, 2000).

In the current Diagnostic Statistical Manual or DSM-V, autism is defined as a neurodevelopment disorder manifested with delays in social reciprocity and communication aligned with repetitive behaviors. It characterized itself in early childhood year from one to three. It hinders children's ability to acquire communication skills, socialize with peers and involve in different types of play (Robledo & Ham-Kucharski, 2005).

### **2.2. Play**

Play programs including activities and experiences are prevalent in children regardless of cultural background and it exposes the changing developmental aspects in children's understanding about their environment (Lifter, Mason, & Barton, 2011).

Play makes children fulfilled early childhood experience. The system and practice of play makes children control their environment, shows meaning, use their senses, and connect with

other people and collect information which they may use to learn things step by step. Their imagination expands, critical thinking skills improve, and sensory observation is enhanced (Einarsdottir & Wagner, 2006; Macintyre, 2010).

### **2.3. Daycare Worker Training**

According to O'Guin (2010), teachers including daycare workers who supervise a direct learning and play program can be trained to implement specific intervention including behavior-based interventions. These workers can achieve the desired level of mastery provided with adequate amount of time, demonstration, modeling, and hands-on. Given the expected rise of autism cases in young children and high dependency to implement early educational interventions in many possible settings, the demand placed on daycare centers is included on the top list. As a result, it is imperative to identify training needs to help daycare workers to effectively carry out an inclusive setting (Rispoli et al., 2011).

### **2.4. Play and Children with Autism**

Play promotes a typical and adaptive environment where a child can achieve conducive learning (Hanline 1999). Play characteristics, preferences and stages are also different from one child with autism to another. (Mastrangelo, 2009). Typical play of children with autism are noted with repetitions, simplicity and predictability of activities when observed over time as compared to the wide-range with various movements, spontaneity and multifaceted play of regular children (Lillard, Lerner, Hopkins, Dore, Smith, & Palmquist, 2013).

Children with autism may exhibit self-stimulatory behaviors over objects, toys, activities, place, person of interests and routines which they may do with repetitions because of rewarding sensory experience (Charman & Stone, 2006). Self-injurious behaviors are commonly observed during and when play is introduced such as putting fingers inside the mouth, poking eyes, head banging to fixations such as flickering lights, lining up objects and sorting the same colours or sizes and being routinary in schedule, route or pathway during travel or when inside the mall. Inappropriate behaviors may be manifested with their preoccupations to different environmental stimulus (Wolfberg & Schuler, 2006).

### **2.5. Imitation and Children with Autism**

Imitation is an action copied and produced in a verbal or non-verbal means. It can be meaningful or just plain response, functional or an expression between two people (Toth, Munson, Meltzoff, Dawson, 2005). It is important that foundational skill emerges and develops prior language and cognitive skills in early childhood. Typical development of children shows capacity to copy actions and movements at par with their developmental age while children with autism displays early signs of delay particularly in object imitation, fine and gross (Rogers, Hepburn, Stackhouse, & Wehner, 2003; Ingorsoll, 2008).

### **2.6. Joint Attention and Children with Autism**

Joint attention is defined as the capacity of children to do what is asked or instructed. A child displays joint attention when he can establish and maintain eye contact on shared objects, and react, attend and perform necessary reactions in between interests (Blacher & Lauderdale, 2014). Deficiencies in joint attention and deficits in social-emotional reciprocity, ranging from

irregular social approach and failure of normal turn taking of conversation, to decreased social involvement including sharing of interests, emotions or affect, inability to initiate or respond to social interactions are under persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays of DSM-V (American Psychiatric Association, 2013).

## 2.7. Language and Children with Autism

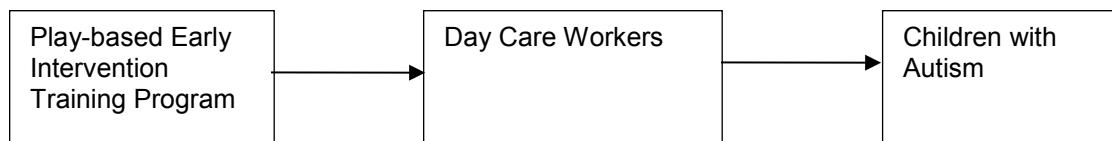
The irregular development and functional use of verbal and non-verbal means of communication is one of autism's remarkable characteristics. Children with autism may have problems in developing spoken speech and language (Rogers, 2008). Early language intervention greatly affects the communication and socialization of children with autism regardless of severity. However, better prognosis has been confirmed for those who display early language skills (Howlin et al., 2000). Children with autism reach for adult's hand to move and get things they wanted. Their communication is delayed and shows related behavior problems due to inability to express their feelings expressively or receptively. They tend to copy spoken words instead of answering and saying what is on their mind. While others cannot talk and display repetitive behavior, some children with autism display unusual memorization skills. (Kanner 1943, cited in Rogers, 2008).

## 2.8. Daycare Workers

Teachers of young children including are trained to create lesson plans suited for each child she teaches inside the daycare including those with special needs (Austin, 2013). Qualitative factors in education involves how family support and influence their child as well as teachers who directly influence their student in the classroom through various teaching pedagogies which can greatly affect cognitive and social development. It is important to generate effective teaching strategies that will focus on different learning styles and competence (McClelland & Morrison, 2003).

## 2.9. Conceptual Framework

Figure 1.  
Conceptual Framework



The figure shows conceptual framework of developing a Play-based Early Intervention Training Program for Daycare. The main objective is to create a play based early intervention training program that will be implemented by daycare workers for children diagnosed with autism that are currently enrolled in their centers

Children with autism are delayed developmentally. Through an early intervention, inappropriate behavior, self-stimulatory behaviors, noncompliance and other delays may be prevented or lessened.

Daycare workers may support the teachers, therapists and other professionals in providing early intervention, promotes awareness and education for all children with and without disabilities.

### **3. Methodology**

Focus group discussions, informal interviews, classroom observations and document reviews were done. Feedbacks and comments of daycare workers were rated using the play-based early intervention form which Imitation, Joint Attention and Language skills of Children with Autism were measured.

Daycare workers' interviews were done after informal training to learn about changes may occur in their knowledge, attitude and use of play-based early intervention program (Halpern, 1998). Numerous studies have suggested an informal and non-didactic approach to paraprofessional training. Paraprofessionals feel uncomfortable with formal, didactic approach, particularly one that is indicative of an institution or school type of environment and this inconvenience may result in lack of confidence regarding mastery of material. Training should include modelling and experiential hands-on application in addition to didactic components such as lectures and readings (Hiatt, Sampson, Baird, 1997; Tan, 1997, cited in Calzada, Caldwell, Brotman, Brown, & Wallace, 2005).

Direct observation during the training program were done to describe the implementation of the program and teaching performance. Training program observations on play were noted according to mutually exclusive categories: imitation, joint attention and language.

Four-day consecutive lectures and training, and five days observation and implementation of play-based early intervention program were conducted. The study was conducted in daycare centers in Nueva Ecija.

Quantitative measures utilized group pre-test-post-test design to compare the teaching skills of daycare workers of children with autism before and after exposure to the informal training of play-based early intervention program and evaluated its intervention effects on imitation, joint attention and language.

The research followed the model,  $O_1 \times O_2$  Where: X represents the instructional program as treatment, while  $O_1$  represents the daycare participants pretested, and  $O_2$  represents the same participants at the posttest.

#### **3.1. Research Participants**

The participants in the study were daycare workers who have teaching experience with children with autism. Letters of permission and request were sent to the office of City Social Welfare and Development Office in Gapan, Cabanatuan, Palayan, Munoz, Talavera, and San Jose, Nueva Ecija, as well as letters of approval and information to the parents of pupils presently enrolled in the daycare including parents of children with autism.

### **3.2. Research Locale**

Daycare centers in Cabanatuan City, Nueva Ecija was the research locale of this study. Centers where daycare workers have previous or presently teaching children diagnosed with Autism Spectrum Disorder. Fifteen daycare workers underwent needs assessment interviews. Only ten out of fifteen participants completed the lectures and play-based early intervention training. Since they were the teachers of children with autism inside the daycare centers, they facilitated play-based early intervention program in a daycare center with four children with Autism Spectrum Disorder for one week.

The researcher visited the daycare centers of fifteen participants for one month to observe the baseline teaching skills of daycare workers and to construct play-based early intervention program. The researcher conducted four consecutive Saturdays for interviews and focus group discussions, five days of informal training on play-based early intervention, and lectures of daycare workers prior the five days of program implementation.

### **3.3. Research Instruments**

All the questionnaires were prepared by the researcher, based from the results of the needs assessment, focus group discussion and supported by related literature. The drafts were reviewed by thesis adviser and were asked to seek comments for improvement from panel of experts. The researcher sought the expertise of the validators to determine the appropriateness of the content, clarity, and presentation of questions. Validators of the instruments were a Sped teacher, DSWD regional administrator, and daycare worker president.

Daycare workers from other municipalities were contacted through text and calls to ask if they have teaching experience in teaching children with autism. However, the participants went to six municipalities to look for daycare worker participants. Letter of permission from the City Welfare and Development Office head was sought before going to centers. They were also asked if they are available and willing to be interviewed. Prior to the interview, the purpose and need to answer the questionnaire were explained.

The needs assessment questionnaire was pilot tested to daycare workers who taught children with autism in their centers to identify the appropriate and relevant questions to be made on attitude, beliefs, practices and to determine daycare centers activities related to the area of concentration such as imitation, joint attention, and language which greatly affect the performance of children with autism and also included in the core deficits of autism. Interviews lasted approximately forty minutes to one hour.

The research instruments were Needs Assessment Interview Questionnaire, Focus Group Discussion Questionnaire and Informal Checklists on Attitude, Beliefs, and Practices, and Play-based Early Intervention Program focusing on Joint Attention, Imitation and Language of Children with Autism. All materials were created by the researcher and written in Filipino. They were validated by the president of daycare workers' association in Cabanatuan City, the Regional DSWD head and a Special Education specialist.

Qualitative interview is based in conversation (Kvale, 2006), with the emphasis on researchers asking questions and listening, and respondents answering (Seidman, 2006). Interviewing participants are more likely to be viewed as meaning makers, not passive conduits for retrieving information from an existing information and answers based on experience and learning. The purpose of most qualitative interviewing is to derive interpretations, not facts or laws, from respondent talk. This method will allow the participants to freely express themselves, to clarify and elaborate their answers (Holstein & Gubrium, cited in Bourke, 2008).

### **3.4. Focus Group Discussion Guide**

The focus group discussion guide (Gabay sa Nakatutok na Pang-grupong Talakayan) was in an open-ended interview-questionnaire format. It has four parts: (1) Personal information about the daycare worker; (2) the daycare workers' years of service; (3) their teaching experiences; and (4) number of seminars about autism they have attended (5) Group discussion consist of eight questions on defining the characteristics of autism, their beliefs, attitude, practices in teaching children with autism, as well as the center-based needs of daycare workers to teach children with autism inside the daycare. The daycare workers' interviews were also written down verbatim.

Group discussions provide direct evidence about similarities and differences in the participants' opinions and experiences. This technique can produce concentrated amounts of data on precisely the topic of interests (Morgan, 1997). In this study, the purpose was to determine the needs to make the program and its evaluation based on daycare workers' attitude, beliefs and practices who are involve in play-based early intervention program for children with autism. The focus groups consisted of those teachers who participated in the early intervention program. The composition of the focus group was limited to daycare workers. Morgan (1997) states that to achieve consistency, both individual and focus group sessions were documented by the researcher. According to Gibbs (1997), one of the advantages of focus groups is the opportunity to be involved in decision making processes, to be valued as experts, and to be given the chance to work collaboratively with researchers can be empowering for many participants. If a group works well, trust develops and the group may explore solutions to a particular problem as a unit rather than as individuals (Goss & Leinbach, 1996; Kitzinger, 1995).

### **3.5. Daycare Worker's Attitude Questionnaire (Mga Tanong Ukol sa Pang-Unawa ng mga Manggagawa sa Daycare)**

This questionnaire consists of seven items written in Filipino to determine the the daycare workers' attitude on teaching children with autism in daycare centers. This was given to all the participants of the study and employed again to the ten daycare workers who participated in the informal training sessions, as post-test. Items 3, 4, and 6 dealt with their attitude regarding inclusion of children with autism in daycare centers. Items 1, 2, and 5 dealt with attitude in teaching children with autism, and item 7 with training attitude of daycare workers. Each item was rated using a Lickert-type scoring scale that ranged from *Di-lubos na sumasang-ayon* up to *Sumasang-ayon*.

### **3.6. Daycare Workers Beliefs Questionnaire (Mga Tanong Ukol sa Paniniwala ng mga Manggagawa sa Daycare)**

This questionnaire was used to assess the daycare workers' beliefs on teaching children with autism in daycare centers. It was written in Filipino, the scale consisted of nine items. This was given to all the participants of the study and employed again to the ten daycare workers who participated in the informal training sessions, as post-test. Items 1, 2, 7 and 9 dealt with their beliefs regarding inclusion of children with autism in daycare centers. Items 3, 4, and 5 dealt with beliefs in teaching children with autism, and items 6 and 8 deal with training beliefs of daycare workers. Each item was rated using a Likert-type scoring scale that ranged from *Di lubos na sumasang-ayon* up to *Sumasang-ayon*.

### **3.7. Daycare Workers Practices (Mga Tanong Ukol sa Pagsasanay ng mga Manggagawa sa Daycare)**

This questionnaire was utilized to identify the practices implemented by daycare workers to when teaching children with autism in daycare centers. Items consists of eight items written also in Filipino. This was given to all the participants of the study and employed again to the ten daycare workers who participated in the informal training sessions, as post-test. Items 1, 4, and 5 dealt with their practices regarding inclusion of children with autism in daycare centers. Items 2, 3, and 6 dealt with practices in teaching children with autism, and items 7 and 8 deal with training practices of daycare workers. Each item was rated using a Likert-type scoring scale that ranged from *Di lubos na sumasang-ayon* up to *Sumasang-ayon*.

### **3.8. Informal Imitation Skills Checklist**

The Informal Imitation Skills checklist was used to assess capabilities of daycare workers to teach imitation skills to children with Autism. The imitation activities covered are Pagtuturo ng Imitasyon gamit ang Malalaking Bahagi ng Kalamnan (Gross Motor Imitation), Pagtuturo ng Imitasyon Gamit ang Isang Bagay (Object Imitation), and Pagtuturo ng Imitasyon Gamit ang Maliliit na Bahagi ng Kalamnan (Fine Motor Imitation). Each item will be rated using a Likert-type scoring scale that ranged from *Di lubos na sumasang-ayon* up to *Sumasang-ayon*.

### **3.9. Informal Receptive and Expressive Language Teaching Skills Checklist**

The Informal Receptive and Expressive Language Skills checklist was used to assess the capabilities of daycare workers to teach language skills to children with autism. It consists of language activities and each item will be rated using a Likert-type scoring scale that ranged from *Di lubos na sumasang-ayon* (Strongly Disagree) up *Lubos na Sumasang-ayon* (Strongly Agree).

### **3.10. Informal Joint Attention Teaching Skills checklist**

The Informal Joint Attention skills checklist was used to assess the capabilities of daycare workers to teach joint attention skills to children with autism. It consists of activities engaging in joint attention and each item will be rated using a Likert-type scoring scale that ranged from *Di lubos na sumasang-ayon* (Strongly Disagree) up *Lubos na Sumasang-ayon* (Strongly Agree).

Play-Based Early Intervention Program for Daycare Teachers of Children with Autism consists of activities facilitated by daycare workers after the lectures and training. The ideal amount of training is a complex issue that depends on the goals of the program, program resources, and characteristics of daycare workers. Adequate training and developing expertise is congruent to preparedness and accurate performance that may result to positive criticisms from self and others (Calzada et al., 2005).

### **3.11. Data Collection Procedure**

First, the researcher sought participants for the study through needs assessment interviews to daycare workers from six municipalities of Nueva Ecija to determine their teaching experience on children with autism in daycare centers. Fifteen participants joined the needs assessment interview, focus group discussions and pre-tests. This identified the issues and concerns related to teaching children with autism, their impression on the condition and teaching experience, familiarity in early intervention, and use of play in education. Pre-training knowledge, attitude, beliefs and practices were determined following the validated questions on *Gabay sa Nakatutok na Pang-grupong Talakayan* or Focus Group Discussion (FGD). Ten out of fifteen joined the succeeding discussion, lectures and training sessions. Results from the discussions aided the development of training program content including the activities per target skills.

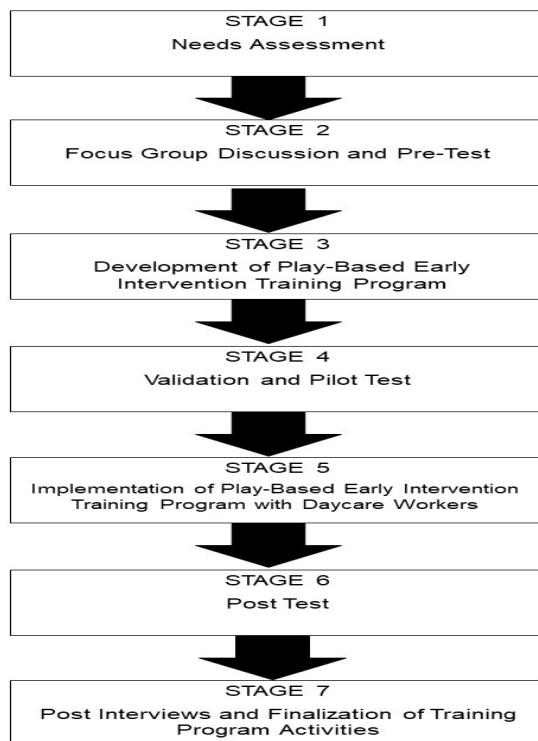
Second, the researcher created a play-based imitation, joint attention and language training program for daycare workers. The researcher sought the help of validators to determine the appropriateness of activities and clarity of terms which was written in Filipino.

Third, information on characteristics, prevalence, symptoms and play behaviors of children with autism for eight participants were provided. Baseline teaching demonstration of the daycare workers were done before and after focus group discussions.

Fourth, informal training was conducted in daycare centers and the researcher's place. Discussions and feedback after every session were included. Lectures and hand-outs were given during the training.

Fifth, post interviews and the same informal questionnaires on attitude, beliefs, and practices imitation, joint attention and language were done as post test on the last day of training session.

*Figure 2.*  
*Phases of Data Gathering*



## 4. Presentation and Analysis of Data

The study was conducted in daycare centers and in the school where the researcher works. The participants were visited in four consecutive Saturdays for the training and five days for the implementation from November to December of 2013. The schedule of implementation phase was done in two daycare centers. The Play-based Early Intervention Training Program was checked and revised periodically over time to meet the criteria set for each child with autism inside the daycare centers. The performance of daycare workers in implementing the Play-based Early Intervention Program to the children with autism inside the daycare centers was observed and noted by the researcher, and comments were consistently given to them after every session to establish teaching skills using Play-based Early Intervention Program.

### 4.1. Research Question 1. What existing attitudes, beliefs, and practices do daycare workers have in managing students with autism?

Attitude, beliefs, and practices were identified using the needs assessment and focus group discussion guide. This study found out that the attitudes of daycare workers are determinant of the outcome of early intervention for children with autism in daycare centers. Positive attitude about the potential of children with autism through play are noted. They were reported during interviews, focus group discussions, and demonstration of play-based early intervention. They

were able to relate and connect their previous knowledge from teaching experience and previous seminars the commonality of play between children with and without autism in terms of facilitation in an inclusive setting.

Daycare workers believe that mainstreaming children with autism in the daycare may improve manifestations of early delays as well as to increase focus, attention and compliance. They also believe they can manage the behavior of children with autism to fully participate and socialize with other children at the daycare. They are confident in carrying out the mandate of no child left behind policy where there is an emphasis to include children with autism to receive special education in the form of play.

Daycare workers provide reward system, ignoring of the inappropriate behavior, redirection of tantrums and free play. They were able to reflect on the need for additional opportunities to add knowledge on how to manage children with autism in the daycare. They were able to recognize the proper practices and importance of effective teacher-pupil relationship that may also affect the attitudes in teaching children with autism.

### **Attitudes of Daycare Workers Toward Children with Autism**

The attitudes of the daycare workers toward children with autism are varied. 86% of the daycare workers say that children with autism need education to catch up with children without autism. While 67% of daycare workers say that children with autism need love, affection, attention and caring. Children with autism's behavior are challenging to manage according to 33 % of daycare workers. Daycare workers have affirmative attitudes towards children with autism while others say that children with autism are different.

Teachers' attitudes directly affect the successful implementation of mainstreaming (Monahan et al, 1996). When teachers do not feel that they can successfully educate children with disabilities, they are less likely to support mainstreaming practices. Provisions of more resources and support, training on how to make curriculum and implement programs could become more positive.

Early childhood teachers include daycare workers have important roles to promote children's play. There are many appropriate ways teachers can support and improve the quality of children's play inside the centers. They also help children including those with special needs to create new experiences, expand and enhance ideas for play as well as to stimulate children's imaginative play. Their positive attitude affects the evaluation where children's play can be identified and be used in classroom planning and activities. (Tarman & Tarman, 2011).

It is noted that there were 86% of daycare workers who expressed affirmative attitudes towards children with autism. These include "*hinahabaan ang pasensya*", "*pinag-aaralan upang mabigyan ng tamang pagtuturo*", "*nararapat na bantayan at alagaan*", "*binibigyan ng atensyon*", "*binibigyan ng sapat na pagmamahal*". [Being more patient and attentive to children with autism in order to use the proper way of teaching, close supervision, and to give love and care.]

### **To Extend Patience When Teaching Children with Autism.**

Daycare workers are patient with their students and at times doubly patient with their students with autism. 100% of daycare workers unanimously felt that patience is important when teaching children with autism. They also stated that children with autism may benefit by providing much

attention need in the daycare center. However, they did not elaborate as to what activity where they need to provide further attention.

*“Dapat kailangan ng mahabang pasensya, kasi yung batang may autismo kailangan talaga nila ng nararapat na atensyon. Dapat bantayan dahil sila ung inaalagaan.” [They must be well taken care of because of their condition.] “Bigyan ng sapat na pagmamahal para maramdaman nila na hindi sila nag-iisa.” [They must be loved for them to feel that they are not alone.] “They see themselves as child care provider and second parents when it comes to the welfare of children with autism (Dunlap et. al, 2006). – **Daycare Worker 1***

It is stated that teaching children with autism needs additional effort and perseverance in order to connect and reach out to them. Patience and autism need to have a relationship. When you raise a child with autism, it's tough at times to obtain patience and even more so to maintain it. It's important to develop patience. Childcare workers were told many times more often than a typical developing child what they need to do in certain instances before it really sinks in for them (Tooley, 2010).

#### **To Increase Attention of Children with Autism.**

Daycare workers felt that they need to improve their students' attention since autism greatly affects focus and sustainability of activities that requires response and reaction with 73% of them expressed this suggestion. Participants facilitate teaching strategies they have proven effective and yield positive results. They also stressed out that when children improve attention, it becomes easier to teach them. Through this training, they were able to understand the importance of joint attention in establishing communication and social interaction for children with autism. Interest and expression are being communicated by a child with autism through joint attention and understand by the receiver is already an achievement (Lawton & Kasari, 2012).

*“Tutukan yung bata na may autismo, para mas matuto. More development, para maging normal.” [Emphasizes the learning prioritization of children with autism to come up with significant improvement]- **Daycare Worker 3***

*“Kailangan ng atensyon, tagalan kung saan makukuha yung atensyon at kahinaan. Pag aralan mo sila dun, kung saan mo sila makukuha, dun sila tutukan.” [Attention must be given to children with autism to determine his weakness and from here you will determine the help they need.] – **Daycare Worker 4***

*“Ang aking pananaw sa pagtuturo sa mga batang may autism ay dapat bigyan sila ng higit na atensyon, maging sa bahay o paaralan, upang magkaroon ng mas mataas na percent ang kanila pagkatuto.” [In my point of view, children with autism must be given more attention when you teach them, both in school and at home.] – **Daycare Worker 10***

Autism is being described in terms of impairment in social communication, interaction and behavior that affects the school planning and developing techniques that will allow children with autism to receive inclusive curriculum. Instead of focusing on delays, teachers act as play facilitators where outcome depends on their involvement and expectations of children's ability to play and learn from it (Wolfgang, 2004).

### To Accept Children with Autism in the Daycare Center.

Daycare teachers accept the underlying conditions of autism that manifest in their centers. 100% of daycare workers express the willingness to accommodate the learning needs of these children. Rejection is not an option when it comes to enrollment leading to mainstreaming of children with special needs including those who have autism. Believing in every child's capacity to learn makes them decide to fully include these children full time.

*"Upang magkaroon din ng kaalaman ang mga batang may autism o yung tinatawag na special child, tinatanggap naming sila sa center namin."* [Daycare workers accept children with autism in daycare centers to give them the opportunity to learn] – **Daycare Worker 5**

*"Ninanais na magkaroon ng magandang programa at pagsasama sa kanila sa ibang mga bata".* [We want to give them a program wherein they will be given the chance to study, play and socialize with other children]. – **Daycare Worker 6**

Daycare workers accept children with autism in daycare because they believe that these children may learn from them. Building an atmosphere that fosters acceptance of disability and diversity of skills in the regular classroom is essential to facilitate learning of children with autism (Lindsay et al., 2014).

Teachers who are in favor of inclusion builds self-confidence and self-esteem; presents an opportunity for all children to interact and learn from each other. (Hamour & Muhibadat, 2013). Exposure, learning experiences and direct interactions might lead to positive attitude towards children with autism, believing that they can be included in the regular classroom (Park & Chitiyo, 2011).

Teachers who work with children with autism on a daily basis tend to display positive attitude towards inclusion since they are aware of their roles in fostering children's educational goals (Engstrand & Pettersson, 2012); They display positive attitude by concluding that inclusive education is beneficial for children with autism (Nelly-Barnes et al., 2011).

Research has also shown that teachers with more professional development experience in special education and mainstreaming showed more positive attitudes toward mainstreaming (Avramidis, et al., 2000)

Teachers that possessed the highest positive attitudes towards an intervention such as play as part of inclusion tended to possess the highest positive attitude and confidence in their teaching practice. Those with the highest positive attitudes towards inclusive education and practice tended to have experience of disability and diversity (Beacham & McIntosh, 2014).

### To Recognize Challenges of Teaching Children with Autism.

Autism behaviors exhibited in the daycare is an overwhelming challenge for daycare workers. It also includes planning of how and what to teach, dealing with different learning style, and managing social and speech delays. It is also inevitable to work with parents of these children who have seen the underlying problems caused by autism. Working hand in hand with the parents is also an important element to make the program successful as stressed by 86% of the daycare workers.

*“Nagiging challenge o hamon sa aming pagtuturo”, “pabago bago ang kilos ng batang may autism sa loob ng paaralan na nakakaapekto sa klase” [It becomes a challenge in our line of teaching. Children with Autism show different attitudes inside the classroom which greatly affect the class and the way we teach.] – Daycare Worker 5.*

*“Ang aking pananaw sa pagtuturo ng mga batang may autism ay challenge o paghamon sa aming kakayahan sa paghahandle. Pag tinaggap mo sila sa center, dapat kaya mong turuan at mahalaga din yung pakikipagtulungan sa magulang nila” [It is challenging to teach children with autism. When you accept them in daycare, you should know how to teach them. It is also important to collaborate with the parents.] – Daycare Worker 7*

*“Ang aking pananaw sa pagtuturo ng mga batang may autism ay challenge o paghamon sa aming kakayanan bilang isang daycare worker. Sila kasi yung parang walang naririnig at may ginagawa lang nila yung gusto nilang gawin” [Teaching children with autism is a challenge for a dayworker like me. It's like the children don't hear anything and they just do whatever they want.] – Daycare Worker 8*

Once you accept children with autism as a pupil, it is considered a challenge to make their lives better and to improve behaviors. They described that these children as “*may sariling mundo*”, “*parang bingi*”, “*sumisigaw at minsan tumatawa ng sila lang ang nakakaintindi*”, “*mahirap tawagin at paupuin*”. [In their point of view, teaching children with autism is a challenge for us on how to handle them with our own capabilities.] – Daycare worker 9

Teachers' perception of their self-efficacy plays an important role in providing appropriate teaching methods and accepting the conditions of children with autism that may affect their center's learning environment (Busby et al., 2012). According to Syriopoulou-delli et al (2012). The result of teachers' enrichment training and working experience is important in identifying teachers' perceptions and efficiency. It is a leveling up of professional role both in assisting and leading the intervention for children with autism.

Another challenge for daycare workers is the need for classroom materials from outdoor equipment to making teacher-made activities for arts and crafts.

*“Medyo kulang din yung mga laruhan at gamit namin sa pagtuturo pati sa mga special needs. Kailangan din nila yung mga laruhan at playground sana.” – Daycare Worker 10*

Additional toys, teaching materials and play equipment are more important if not equal to the training and seminars receive by daycare workers. These factors affect their perception as well as fill the gaps between curriculum and program implementation (Leblanc et al., 2009). Daycare workers treat children with autism as their own. They were aware that education as intervention is one way of teaching that may address delays as well as to introduce basic concepts normal children know. By acknowledging and accepting the problems inside the centers related with having pupils with autism, the teacher is seeking the path to look for effective intervention as well as professional growth (Soto-Chodiman et al, 2009)

### **Passion for Teaching.**

Daycare teachers have the passion for teaching children. Empathy and understanding the conditions of children with autism are shown. There were 93% of daycare workers stressed out

that children with autism are still being taught and loved along with other children despite behavioral concerns.

Teaching children with autism is a decision-making process where accepting and desire of making these pupils improve are highly considered. This positive attitude shapes practice which determines the success of any class. Teachers truly believe that they can deliver a workable plan hoping to make significant change in how children with autism can be taught in a regular setting (Sandfort, 2015).

*"Itinuturing namin na parang anak. Binibigyan naming ng love and care kahit na lage silang tumatayo at di sumusunod sa pinapagawa."* [We consider them as our own children. We love and care for them even if they always show inappropriate behavior such as standing up and noncompliance.] – **Daycare Worker 9**

*"Kailangan ng mga batang may autism ang special care. Ina-allow ko yung yaya sa loob ng daycare kasi ako lang mag-isá nagtuturo tapos madami silang estudyante ko."* [Children with autism need special care. I allow them to assist by his/her guardian inside the center because I have many pupils to attend to.] – **Daycare Worker 11**

Positive attitudes of teachers greatly affect the success and effectiveness of their instruction. They were accommodating of having pupils with autism in their regular classroom where they facilitate learning, adjust to inclusive conditions and create new programs for children with autism (Cassady, 2011).

Daycare workers view teaching as satisfactorily rewarding. They serve children with autism despite of lack of training and necessary teaching materials. They also believed that teaching is about helping these children to experience and learn the same with regular children.

*"Pag maganda ang naituturo mo, naibabahagi mo, mas maganda ang kakalabasan. Isang bokasyon na pagbibigay ng malasakit sa kapwa."* [If you teach well, you'll see good results. Serving the people is a commitment.] – **Daycare Worker 12**

*"Foundation, maganda yung maituro, isang bokasyon mo, iba yung ability ko sa pagtuturo."* [Teaching children with autism is about building a foundation for learning. Teaching is a vocation, I have my own way of teaching which differs] – **Daycare Worker 13**

When you teach children with autism and you know that they learn, the outcome of the result is positive. Teaching is a vocation and learning served as foundation for children with autism. Inclusive placement such as daycare centers where early intervention placement is possible with suitable programs, meeting the needs of a child with autism is challenging. It is the responsibility of the teacher to seek and explore pedagogies that would clearly influence the early development of children with autism (Vander Wiele, 2011).

### **Teaching Children with Autism Based on Encounter and Experience.**

Daycare workers have received seminar and workshop on nature of autism, its characteristics and types, assessment and classroom management. With 86% of daycare workers have previous teaching experiences with children with special needs, most of them are more confident in mainstreaming these pupils in the center. There were 66% of daycare workers have more teaching experiences while 73% claimed that they have already classroom encounter with

children with autism and they believed these children can be accepted and taught along with regular children. Center-based experience of pupils with autism has been shown to support more affirmative attitudes toward the inclusion of pupils with autism.

*“Magamit ang guro na maibahagi sa bata ang kanyang natutunan para madvelop ang batang may autism.” [Apply what has been learned to improve the condition of children with autism.] –*

**Daycare Worker 14**

*“Ituro mo din sa kanila kung ano yung tinuturo sa mo sa batang normal para matutunan din nila yung ginagawa ng mga normal na bata.” [Teach them (children with autism) what you teach to typically-developed pupils.] –*

**Daycare Worker 15**

Daycare workers implement what they have learned from seminars. They think they can also use same teaching methodologies they have done with regular pupils but with adjustments and modifications. Positive perspective from daycare workers is a determinant in their ability to carry out maximum learning potential and develop programs. Furthermore, all of them stressed out the continuous need for additional resources and training.

Daycare workers expressed their attitude to children with autism by extending their patience while teaching them because they may exhibit inappropriate behaviors and tantrums such as shouting, crying when they do not get what they want, lying on the floor, and going around the room and also non-compliance behavior during lessons.

*“Pabago-bago ang attitude, nananakit, tahimik, kain ng kain kahit nagle-lesson, at nagwawala.”* [They showed different attitudes: they are sometimes quiet, most of the time they eat. They hurt other children; when in class they are out of control most of the time.] – **Daycare Worker 2.**

Autism varies from person to person in the level of severity, characteristics and manifestation of symptoms. No two individuals are alike and indicators ranges from mild to severe and may change overtime. Children with autism fail to display appropriate social cues, sharing of interest and emotional reciprocity (APA, 2016; Wolfberg, 2003). Behavior issues commonly observed in children with autism are due to the delayed development in language and cognitive area. This prevents them from expressing their needs and using functional communication which can result to maladaptive behaviors (Scheuermann, Webber, Boutot, & Goodwin, 2003). Problems and issues concerning the implementation of effective programming are inevitable because of the challenges and severity of autism condition. Teachers should recognize that the problems that children with autism exhibit are caused by developmental delays which are involuntary because of unpredictability of situations and inability to act what are expected from them in social setting (De Boer, 2009).

### **Beliefs Toward Children with Autism**

Daycare workers expressed a broad range of beliefs based on their teaching experience in the centers. Themes were identified as positive and related to the occurrences throughout their workday with general and specific terms used. All daycare workers have positive perspective on how they think children with autism should be treated, how to teach and overall perception on how the disability affect their learning.

According to early childhood educators, inclusion of children with special needs promote a climate that increases sensitivity and acceptance of diversity while decreasing teasing and bullying based upon physical or ability differences. Exposure to the general education curriculum promoted improved cognitive, academic, and language skills (Vakil et al. 2009). Educators unequivocally agreed that inclusive education was necessary and crucial for students with autism who, due to the nature of their condition, are likely to need and benefit from access to typically developing peers who model age-appropriate language, social skills, and behaviour (Sansosti, 2008).

Daycare workers describe behaviors and experiences they observe, 53% of them stated: “*may kakulangan sila upang matuto*”, “*naniniwala na isang hamon o challenge ang pagtuturo sa mga batang may autism*”. [There are hindrances in order for them to learn. It is a challenge to teach children with autism.] “*Di mo sila mapigilan tumayo at tumakbo habang nagkaklase.*” “*Kaya ko sila turuan kung may assistant ako kasi meron ako naging estudyante na iyak ng iyak pag hindi niya nakuha yung gusto niya at minsan ibinabato yung mga gamit.*” [In a practical sense, it would be more manageable to handle students with difficult behavior if there were shadow or assistant teachers.]

### **Teaching Children with Autism in Daycare May Improve Developmental Delays.**

Daycare workers recognize that the children with autism need to be educated to gain skills necessary for them to survive school demands. All daycare workers believe that they can allot time to teach to address issues and establish learning foundation.

Children with autism who have limited social skills and developmental delays are likely to be segregated from the group, and are prevented from joining even small group play. And yet without active participation, there will be lesser chance of establishing play and enhance socialization necessary for inclusion (Wolfberg, 2009).

Most of preschool programs for children with autism are advocating integration to acquire skills and behaviors leading from small to larger group. Prerequisite skills are important component of their curriculum as well as identifying skill and behavior issues embedded in autism. By including children with autism in a mainstream setting means additional opportunities for them to interact and play (Handleman & Harris, 2000).

“*Di sila makasunod sa klase dahil delay sila.*” “*Ang mga batang may autismo ay dapat maturuan, dagdagan ang pagbibigay ng atensyon.*” [They cannot catch up with the lessons easily. Children with autism must be given more attention in order for them to learn.] – **Daycare Worker 1**

“*Kahit na may mga problema sa pagtuturo dahil kakaiba sila dapat pa rin bigyan ng time, atensyon at wag ikakahiya. Imbis, maagapan at matuto, kailangan ng foundation.*” [Despite the problem we encounter in teaching children with autism, they must be given time and attention. We shoud not be ashamed, rather give them our support and understanding in order for them to learn.] – **Daycare Worker 12**

Issues pertaining to the inclusion of children with autism in the daycare center may not be a problem since daycare workers believe that these children need to educate. Daycare workers believe that they are one of the helpers in the community. They have the responsibility of teaching students with autism to the best of their ability.

*“Sa pagtuturo ng batang may autismo, ‘di gaanong mahirap, at least kahit papaano nakakatulong kami.” [It is not very hard for us to teach children with autism, at least we can be of help to them.] – Daycare Worker 2*

Daycare workers viewed the responsibility beyond teaching children with autism. As a second parent to these children who accommodate and monitor their welfare, they have also accepted the role and responsibility of a service provider by attending to inappropriate behaviors, facilitation of group class and play with other children, letting the child and family experience that they are accepted.

**Daycare Worker 3** *“Sila yung dapat binibigyang pansin diba. Sila yung may mga kakulangan. Buong kagalingan dapat silang tulungan.” [They must be the ones to be given more attention because they are special children.]*

Daycare workers believe that teaching children with autism is more than learning assure. Giving attention means addressing the lack of skills children with autism displayed.

### **Teaching Children with Autism May Improve Play**

Play is one of the core activities in the daycare. Daycare workers emphasized the need for play whenever children with and without autism stand up, run around or cry. They believe that they can learn more about play when it comes to including children with autism in their class. Paraprofessionals can be trained to conduct play activities and behavior strategies in a natural setting (O'Guin, 2010).

Guided participation in integrated play lets children with autism access play to grow and be with their typically-developed peers in meaningful and functional social play. Through play, engagement of children with autism increased and at the same time self-stimulatory behaviors decreased. Play of children with autism paired with developmentally appropriate activities yield long term positive results (Gould, 2015; LaBelle, 2002).

*“May mga nag iimprove naman na mga bata kahit papano. Ginagawa namin yung kaunting natutunan sa mga seminar at training ng ibang mga nagpupunta dito.” “Naituro na rin naman sa amin yung paglalaro. Pag ayaw nila sumunod, pinaglalaro na lang namin sila o kaya hinahayaan” [There are some children who improved. We are applying what we have learned from seminars and trainings. We also have learned how to play with them. If they do not want to follow us, we do not force them to do so.] – Daycare Worker 3*

*“Naniniwala naman ako na pwede talaga sila ihalo sa normal na mga bata. Kahit mahirap magturo, hindi naman pwede hiwalay ang pagtuturo sa kanila.” [I believe that they can mingle with other regular children. Even if it is hard to do so, I can teach them at the same time.] – Daycare Worker 4*

*“Kailangan sila turuan ng maayos at maliwanag.” “Madalas na pagsama sa pagtuturo yung pagsulat ng pangalan, pagbibilang at pagbabasa.” [They must be taught properly and clearly. Writing their names, reading and counting are some things to consider.] – Daycare Worker 5.*

*“Kulang sa atensyon sa academic performance, madaling mawala sa focus.” “Pero pag sumusunod at behave naman sila, pinaglalaro ko parang reward na niya yun.” [They lack attention with regards to academic performance. They easily stayed out of focus. If they follow instructions and behave properly, I gave them rewards by allowing them to play] – Daycare Worker 6*

*“Nahihirapan silang magfocus habang nakikinig sa teacher. Maaaring magkaroon sila ng hyperactivity behavior habang nakikinig o gumagawa ng activities.” [They lack attention with regards to academic performance. They easily stayed out of focus. If they follow instructions and behave properly, I gave them rewards by allowing them to play.] – Daycare Worker 10*

Daycare workers believe that play can be a reward and redirection for inappropriate behaviors inside the center. 73 % of daycare workers have used play to let the children with autism calm down. They believe and subscribe what they have learned from local seminars and readings if they can still remember combined with teaching experience. One of the major problems of the children with autism is the focus and impulsive behavior while the class is ongoing as stated by 66% of the daycare workers. 80% of them have ignoring behavior and letting the children have free time to let the inappropriate behavior pass away.

### **Mainstreaming Children with Autism in Daycare Centers.**

In the advent of inclusion, there is a need for students with autism to take part in mainstream activities such as schooling, participating in community activities and taking responsibility. Despite of its complexity and limited studies on the effectiveness of early group intervention, teachers are ready with special education support to make these children learn skills in a group set up (Ferraioli & Harris, 2011).

*“Marami na akong naturuan na may special needs kahit dati. Sa una kasi di mo naman malalaman at yung itsura nila e parang wala naming problema. Tinuturuan din naming sila kung ano yung alam namin para magkaroon ng magandang buhay.” [I have taught children with special needs before. You cannot tell the learning problems by their physical features. We (daycare workers) teach based on what we know to improve their lives.] – Daycare Worker 5*

*“Naniniwala kami na pag naturuan sila pwede silang makisalamuha at makipagsabayan sa mga normal na bata.” [We (daycare workers) believe that we can teach them to participate and catch up with other kids.] – Daycare Worker 6*

*“Naniniwala ako na pag pinaparamdam naming na normal siya, naintindihan din nila yun kahit paano at mas nakukuha mo yung loob nila. Hindi rin namin sila sine-separate.” [I believe that children with autism can feel and understand how we treat them as regular children.] – Daycare Worker 9*

Inclusion and co-teaching are gaining in popularity as administrators seek to provide the least-restrictive environment, which often is the most cost-effective — and beneficial far beyond the student with autism. For students who can be served effectively in general education classes, their life outcomes — socially, vocationally, and academically — are going to be much better than for students in a separate class. Autism is a social pragmatic disorder, so the more opportunities these students have to interact with other students, the better they are able to develop those skills (Paul, 2009).

### **Teaching Children with Autism to Discover Potentials.**

The daycare workers saw the potential that each student with autism had. Despite their delays, they believe that they can achieve something in life.

*"Sa aking dalawang (2) taong pagtuturo sa Daycare Center, nakilala ko ang mga batang may autism at naniniwala na dapat silang bigyan ng higit na pagtuon sa pag-tuturo at linangan kung ano man ang kanilang natatagong kakayahan." [In my two years of teaching, I have known and believed that children with autism should receive intensive intervention and enhance their abilities.] – Daycare Worker 10*

Adequate training and knowledge of daycare workers on teaching children with autism may influence their belief that these children still need to be educated and experience typical setting and environment in the centers as confirmed by all daycare workers. They still acknowledge that they can be of help and may be able to help children with autism along with typically-developed children. Their beliefs are suggestive in nature to acquire skills and knowledge about autism.

Daycare workers acknowledge the deficits and lack of learning skills and development that they believe may affect the learning of a child with autism inside the daycare center. However, 73% of daycare workers believe that giving additional attention to children with autism inside their centers will be beneficial. It is their right to be educated with other regular children and include them in various activities as revealed by 80% of daycare workers. Along with these, all daycare workers believe they need to have deeper understanding and patience pertaining to the delays that may exhibit and interfere the class. Teachers of children with special needs believe they can influence their students' achievement. Professional experiences and education level play a big role in delivering positive intervention. The more teaching experience the teachers have, the higher efficacy belief observed, lack of training and certification results in lower efficacy. However, staff development training is recommended to fill-up gaps in the teaching strategies and techniques (Dunlosky et al., 2013).

### **Need for Special Education**

Daycare center is an avenue of learning, social interaction and play in early childhood. It provides ample opportunities to experience being involved in group activities where sharing and collaboration among pupils and teachers happen. It is a natural environment where children with autism can also be a part of. Among the daycare worker, 66% of them indicated the need for special education training for them as well as for children with autism. 53 % of daycare workers referred their stuents to special education either in public or private institution.

**Daycare Worker 7:** *"Sa tingin ko po ay dapat isama siya o kaya ay doon paturuan sa mga eskuelahan na mga ganun din sa mga katulad niya na may espesyal na pangangailangan."*  
[In my opinion, they must be enrolled in a school that offers special education.]

These children need special education to meet their pre-academic, psychosocial, language, cognitive and address behavior problems wherein regular school cannot be met. Group instruction promotes observational learning as an upgrade from one-on-one instruction to give these children a chance to hone their skills, increase attention, play with peers, develop tolerance from sensory issues, and receive proper educational placement (Leaf et al, 2008).

Daycare workers reported positive beliefs about the possibility of children with autism to join daycare play activities with other typically-developed peers. With 86% of them viewed the training program as successful intervention strategy. All daycare workers indicated a change in their perception of what children with autism can do if given the proper intervention.

Daycare workers noted that continuous training is needed in early intervention especially play. They supported and encouraged to share their knowledge to parents and other co-teachers to impart their beliefs. They felt instrumental in establishing play and learning environment among children with and without autism.

### **Practices toward Children with Autism**

Daycare workers revealed that there was an inadequate training when it comes to teaching practices needed to accommodate children with autism. Seminars and workshops were not consistent and regularly done to update them in teaching especially with special needs as claimed by 80% of daycare workers. Some of them attended private conferences if they were only invited. Their training was obtained when they were already teaching in the daycare centers as confirmed by all daycare workers.

Daycare workers attitude plays a vital role in performing duties and responsibilities when teaching children with autism. According to most participants, they are willing to accept children with autism with emotional and physical support from the organization. They all agree that appropriate practice require change in views and perception on the autism condition. The involvement of the teacher in a child's play during the early years can be useful in laying a solid foundation for the child (Tarman & Tarman 2011).

### **Daycare Workers Allow Children with Autism to Participate in Class**

*"Pagkakaroon ng palatuntunan aktibidad sa paaralan. [Children with autism should be included in center program or activities.] "Sinasabay sa pagkanta kasama ang ibang mga bata. Laging tinatawag sa klase at hindi isinasantabi."* [Join them in group singing. They are always given the chance to participate in class.] – **Daycare Worker 2**

It is beneficial to spend time working with typically-developing children concerning their peers with autism. Classmates of children with autism can be taught to interact, initiate, reinforce, and prompt their peers with autism to participate in appropriate social interaction and functional play (Belchic & Harris, 1994).

*"Isinasali sila sa mga exercises at games sa loob ng daycare."* – **Daycare Worker 5**

*"Isama sa mga classmate, obserbahan ang daily routine, gumamit ng program materials tulad ng blocks, mga bagay na pinagduduktong, mga bagay na maddedevelop siya at wag ipakita na special child siya."* – **Daycare Worker 6**

*"Isinasali sila sa palatuntunan o aktibidad ng paaralan. Pakikisalamuha sa ibang bata. Bigyan ng higit na atensyon.* [They are included in the program or activities in school. They are allowed to join other kids. They should be given more attention.] – **Daycare Worker 10**

*“Wag ibukod na nag-iisa, ipakita na normal din siya, wag ipakita na may diperensya. Bigyan ng activities na mabibilang siya. Kung saan may interes siya. Alamin ang gusto niya.”* [Do not isolate children with autism from others. Treat them as if they are like other typically-developed children. Give them activities that interest them. Know their other needs.] – **Daycare Worker 12**

*“Unti-unting nilalapit sa mga normal na bata, paulit-ulit na pagkausap at pagsasanay sa word na iyon.”* [Find ways on how children with autism can be friends to other children. Introduce them to each other by name. Slowly talk to them more often.] – **Daycare Worker 14**

Developmental differences in children with autism should not be a barrier in receiving inclusive learning. Daycare workers are one of the people who play an important role in using these children's interest and strengths rather weaknesses. It is important to guide children with autism when introducing play, assisting in group activities to learn new things and reduce problematic behavior, and establish rapport and relationships among other pupils (Beavan & Phillips, 2007).

Inclusion of children with autism in the regular setting with typically-developed peers might be a trial and error for teachers. But still, it evidently works especially when they see improvement no matter how big or small, as long it builds momentum for early learning foundation. Positive attitude is one of the important factors to enable teachers effectively support the inclusion of children with autism. The teachers are also responsible in making these children feel safe, confident and accepted (Casey, 2010).

### **Daycare Workers Provide Behavior Strategies.**

Daycare workers facilitate what they have previously learned about managing and teaching children with autism in their centers. They exert effort to modify themes and daily lessons to at least make sure that these children learn every day. 60% of daycare workers stressed out that they make use of ignoring, social praises and reward to accommodate maladaptive behaviors.

*“Kunwari yung bata hindi mo ma-catch ung atensyon niya hayaan mo lang siya sa gusto niyang paglaruuan hanggan sa tumigil siya. May oras naman para makuhha mo ung atensyon niya, magsasawa din sya.”* [If you can't get their attention, let them do their own thing until they stopped. Time comes they will be tired of what they are doing. In this case you may get their attention.] – **Daycare Worker 1**

*“Sa story telling nagbibigay ng example tungkol sa pang araw araw na buhay. Halimbawa: Pag-ginawa mo ito, may Jollibee ka kay mommy.”* [I tell stories and relate it to day to day activities. i.e If you will do this, you can have Jollibee (reward) from your mother.] – **Daycare Worker 1**

*“Gusto ko matutunan kung paano mai-improve yung pag-aaral nila. Kung paano makuhha yung atensyon nila.”* [I want to learn how to improve their (children with autism) education and to increase their attention.] – **Daycare Worker 4**

*“Ayo-ayuin mo sila, mapapasunod mo din sila. “Kailangan nila ng malaking pagmamahal.”* [In order for them to follow you, you have to convince them (children with autism). They need a lot of love.] – **Daycare Worker 4**

*“Kukuhinan ko muna atensyon niya bago ko siya turuan kasi minsan may tantrums siya.”* [Since children with autism may exhibit tantrums, you have to get their (children with autism) attention for compliance before proceeding to teach.) – **Daycare Worker 9**

*“Magkaroon ng extrang oras para turuan sila sa loob ng daycare.” “Isinasali sila sa mga exercises at games sa loob ng daycare.”* [We practice giving extra time to teach them at daycare center. Encourage them to join in groups games and exercise in the daycare center.] – **Daycare Worker 5**

*“Ang aking stratehiya ay dapat ako ay mayroong pang unawa sa kanilang katangian, matiyaga sa pagtuturo, may puso at pagmamahal sa mga batang may autism.”* [My strategy is that I have to understand their abilities, patient in teaching, a heart and love to autistic children.] – **Daycare Worker 7**

*“Kailangan pa naming ng mga makabagong kagamitan, kaalaman o karagdagang pag aaral at psychological knowledge sa mga batang may autism.”* [We need modern equipment and knowledge and additional learning and psychological knowledge in order to handle autistic children.] – **Daycare Worker 9**

Since children with autism manifest delays that prevent them from participating in group class, daycare workers assist them in group activities. Daycare workers who have previous training and workshop in managing children with autism were able to implement activities using flashcards, pictures, blocks and visuak aids in manila paper to establish attention and compliance. They provide reward such as social praises, free time and access to toys when positive behavior are presented. There were 86% of daycare workers admitted they have resorted to verbal promises and bribing of materials and allowing guardian to pacify unwanted behaviors during class.

Encouragement to participate in daycare programs and to attend everyday class were suggested by 73.33% of daycare workers. There were 80% of daycare workers who emphasized consistent communication as a helping tool to inform about the progress the child with autism has made.

*“Pagsasali sa mga aktibidad kasama ang ibang mga bata”, “pinapangakuan ng premyo kung susunod sa guro”, “paggamit ng iba’t-ibang stratehiya sa pagtuturo kasama ang drawing, play, story-telling at exercises at games sa loob ng daycare”, “isinasama din sa mga palatuntunan sa daycare” “sinusuyo ang mga batang may autism”, “may kasamang pang unawa sa pagtuturo”, “may koneksyon o pakikipagtulungan sa tagapag alaga ng mga batang may autism”.* [Engaging different activities together with other children, give rewards if they accomplish things instructed by the teacher. Utilizing different strategies in teaching like drawing, play, story-telling, exercises and games inside the daycare center is included in our practice. Give them the chance to participate in the program, giving them tender loving care with understanding. There must be close communication with the guardians of children with autism.] – **Daycare Worker 10**

### **Daycare Workers Provide Art and Play Activities**

To catch the attention of children with autism, daycare workers use manipulatives available in their own center. They also use paper-pencil tasks which to some are enticing while some pupils may not be receiving enough reinforcement to establish attention. Children with autism manifest their preferred toys or activities in different ways from each other. *“Katulad lang ng*

*pagtuturo ko sa mga normal na bata.”; “Paglalaro, training at seminar sa mga daycare worker.”* [The same of what I am teaching to normal kids. Playing, training and conducting seminars to daycare workers.] – **Daycare Worker 6**

*“Gumagamit ako ng play, drawing, at pakikisalamuha sa ibang bata.”* [I used play, drawing and mingling with other kids.] – **Daycare Worker 5**

*“Binibigyan ng mga laruin, doon nakatuon ang kaisipan, sa bagay na kanyang pinaglalaruan.”* *“Unti-unting nilalapit sa mga normal na bata, paulit-ulit na pagkausap at pagsasanay sa word na iyon.”* [Give them toys that nice interest them. Talk to them more often at let them associate themselves with other kids.] – **Daycare Worker 14**

*“Halimbawa nakikipaglaro, hayaan na makipaglaro sa iba. Kaylangan laging kasali, ipaunawa sa ibang bata ang kalagayan niya. .”* [Let children with autism play with other kids. Make other children understand the autism condition.]

*“Kasali rin sila sa snack at kung kaya yung buong oras sa center. Sa pagkain, nauubos ung lahat ng baon.”* [Children with autism participate in the snack time, and if possible the whole time. They were able to finish their food during snack time.], – **Daycare Worker 13**

*“Hayaan mo silang makipaglaro sa ibang bata, pero susubaybayan mo parin siya. Yung pagkilos, kaylangan nakasunod sa kanila dahil mabilis silang kumilos.”* [Facilitate play of (children with autism) with other kids. Monitor their movements because they (children with autism) tend to move fast.] – **Daycare Worker 15**

*“Paggamit ng mga visual aids, yung napapanood nila paulit-ulit na ipa-play sa television para makuha nila.”* [The use of visual aids and watching videos repetitively may aid their (children with autism) learning.] – **Daycare Worker 15**

Through art and play, daycare workers may understand their preferences, skills and abilities. Children with autism increased verbal communication and eye contact and at the same time lessen body movements during table top activities. Child-directed play with teacher support is an important factor when considering early intervention using play especially for those who have Autism (Lantz, 2001).

### **Need for Parent Communication and Evaluation**

Effective teaching involves constant update and communication between parents and daycare workers on children's development and improvement in the center. Some parents of children with autism who look for an early intervention rely on the daycare centers' capacity to accommodate their children to socialize and address delays. School interventions for children with autism should prefer periodic parent-teacher communication rather than the usual agreement and initial meeting, to improve assistance at home and strengthen collaboration (Azzad et al., 2016).

Studies suggest that the earlier the start of intervention, the higher percentage of developmental improvement occurs. Furthermore, early intervention is lesser expensive and efficient compared to late intervention (Koegel et al, 2014).

*“Nagbibigay din kami ng suggestion sa magulang kapag alam namin yung pag-handle sa bata.”*  
[We give suggestions to parents on how to handle their children.] – **Daycare Worker 4**

*“Kailangan ay pakikipagtulungan ng mga magulang para turuan din sila sa bahay yung mga bagay na nahuhuli sila. Pwede naman sila bigyan ng activities na kaya nila sa bahay.”* [Parents' cooperation is needed at home. They can give activities to children with autism.] – **Daycare Worker 5**

*“Kailangan ang pag-approach ay yung parents ay di didiretstuhin, di bibiglain, alamin yung kakayahang bata. Baka pwede nating i-evaluate.”* [There is a need to approach the parents involved and ask some questions pertaining to the behavior of the child. This must be done for proper evaluation of the child.] – **Daycare Worker 6**

*“Wag ibukod na nag-iisa, ipakita na normal din siya, wag ipakita na may diperensya. Bigyan ng activities na mabibilang siya. Kung saan may interes siya. Alamin ang gusto niya.”* [Do not isolate the child rather treat them as a normal child. Let them join other children. Know what his interests and likes.] – **Daycare Worker 12**

*“Alamin muna kung ano ang lebel ng behavior. Halimbawa sa paglalaro kung binigyan mo ng laruan yung bata at binalibag sayo espeyal yung bata. Kung hindi interesado, hindi naman dapat hinaharas, palakasin mo yung desire nya, masisira yung loob niya kung lalo mong idadown, unti-unti mong ituro kaylangan unawain.”* [Be aware of the child's behavior of he throws a toy given to him, he is special. Treat him as a normal one.] – **Daycare Worker 13**

*“Halimbawa sa pakikisama sa iba, kaylangan madevelop yung pakikisama hindi puro sila lang. Kaylangan kasama sila, pagtatawagin mo rin sila, kahit hindi nila kaya. Kaylangan may self-interest, sa indoor activity halimbawa isali mo sila may reward sila para mapush sila, at magkaroon ng interest.”* [Let him play with other children. Care them to recite as much as possible. Let them participate in indoor activities and give them reward as needed.] – **Daycare Worker 8**

*“Halimbawa pag kayong dalawa lang kailangan turuan mabuti, ipaliwanag ang kahalagahan ng tinuturo. Yung ibang mga magulang hindi naman nila tinuturuan. Dapat tinuturuan din nila sa bahay.” “Pwedeng isama, ipaunawa na sa pag-aaral na kaylangan matuto sya, na kailangan umangat siya.”* [Teaching children with autism needs an extra effort especially ensuring that they learn. Some parents do not teach their children at home. But it should be emphasized the importance of follow up at home.] – **Daycare Worker 13**

*“May mga problema din yung mga magulang nila na pang pinansyal kaya minsan hindi nakakapasok.”* [Financial problem is one of the reasons why children with autism were not able to go to school.]

*“May mga magulang na di tanggap yung kondisyon ng anak nila, ikinakahiya, kailangan kumbinsihin, ipakita na tanggap nila.* [Some parents are in denial of their children's condition. They must be open minded to accept the fact that they have children who need their unconditional love and care. The conditions cause by autism may worsen if not given properly addressed.]

*“Pwede lumala yung kalagayan nila, bigyan ng atensyon ng parents, nasa parents yung problema.” [Parents should provide attention to their child with autism to prevent the condition to worsen.] – Daycare Worker 12*

*“Papaulit sa kanya, pagagawa muna sa isang bata, tapos ipapaulit sa kanya. Practis para mas matuto sya.” “Sa family, dapat nandun yung subaybay nila, dapat laging kasama yung bata. Wag laging hayaan na nagcocomputer at more on educational CD.” [Ask the child to do an activity by what other children did. Practice doing activities. The family must give the child proper guidance. Give the children the importance that they need. Refrain from giving those gadgets instead give them educational toys.] – Daycare Worker 14*

The prevalence of undiagnosed and suspected children with autism increased in public school systems. For these pupils to be successful learners, it is imperative that they have the opportunity to experience an effective early-intervention program. Because there is a high probability that many of them will get their education and intervention in the public school setting, teachers, paraprofessionals, specialists and administrators must be provided with best practices in training and evidence-based.

An inclusive setting refers to the full-time placement of children with disabilities in a classroom with typically developing peers. Within the inclusive setting, children with disabilities are participating in the same activities and routines as typically developing children (Odom, 2000). The daycare workers expressed the need to be exposed in seminars and training about teaching children with autism. They stressed out the use of educational materials and toys inside the daycare center. Play, art, fine and gross motor activities are important in the intervention of children with autism.

### **Daycare Workers Teach with Patience.**

Continuous training and teaching greatly contribute to the positive attitude of teachers of children with autism. Daycare workers believe that children with autism and regular children can be taught and learn side by side. Daycare workers also learn from experience and improve their areas of expertise such accommodations, play program and delivery of instructions (Walters, 2012).

*“Ang aking stratehiya ay dapat ako ay mayroong pang-unawa sa kanilang katangian, matiyaga sa pagtuturo, may puso at pagmamahal sa batang may austismo.” [My strategy is I have to understand their characteristics, patient in teaching, heart and love to autistic children.]*

*“Yung pagtuturo naman ay iba sa daycare kasi mas marami kami laro. Pero maraming pagkakataon na nagwawala sila pero sa pagtuturo naman kailangan ng mahabang pasenysa e.” [The manner of teaching in regular school is different from daycare centers. There is more play in daycare center. There are times children are not in the mood and are uncontrollable but it took a lot of patience in teaching.] – Daycare Worker 8*

*“Kung nakakaupo sila, mas maganda. Minsan inuuuna ko yung ibang bata tapos nilalapitan ko naman yung may autism para iaassist. Natuturuhan namin sila kasama ng ibang bata kahit mahirap. Natututo din naman kami dahil kakaiba yung mga ugali nila.” [It is better if children with autism learn to sit still during class. Sometimes I teach other children before attending children with autism. It is really hard teaching them at the same time. At least I can learn from their behavior.] ---” Daycare Worker 9*

*“Case-to-case basis ang kailangan ng mga batang may autism dahil iba’t-ibang level ang mga batang may autism. Iba’t-ibang atensyon ang kanilang kailangan. Halimbawa, late sa speech, kulang sa socialization, kulang sa self-help, binibigyan ko sila ng special attention at isinasali naming sa mga regular na bata. Kailangan din naming ng mga espesyal na gamit para sa mga batang may autism.”* [Center needs of children with autism varies because there are different levels and conditions of children with autism. They need different kinds of attention example are those with speech delay, lacking in socialization, self-help receptive and expressive language, I give them special attention and let them join other normal children. We also need special equipment’s to be used to autistic children.] – **Daycare Worker 10**

Daycare workers practice the inclusion of children with autism by accepting them in the daycare because of the policy of “no child left behind.” Sitting-in or accepting them formally in the daycare were a common practice since their parents usually request for socialization and if possible, address delays. But due to lack of training, materials and understanding, these children’s condition may get worsen instead. Daycare worker practice from reward system to group integration are already existing. They also stressed out “*pagsasali sa mga aktibidad*”, “*pagbibigay premyo*”, “*paggamit ng iba’t ibang stratehiya sa pagtuturo*”, “*sinasama sa ibang bata*”, “*pag-unawa*”, “*pakikipagtulungan*”, “*pagkuha ng atensyon*”, “*pagbibigay ng pagmamahal*”, “*pagbibigay ng pasensya*”, “*pinaglalaro*”, “*pangangailangan ng ibang gamit*”, “*kaalaman at pag aaral*”, and “*pagtitiyaga*”. [They also stressed out participating in different activities, giving rewards or prizes, using strategies in teaching and allowing them to join other children, understanding, cooperation, giving attention. Giving them the chance to play with others, providing their needs and patience.]

Program sustainability indicates challenges in teaching efforts of children with special needs. Supportive conditions from their supervisors provide opportunities for training and align practices of staff to support each other. The collaboration between regular and special education teachers yield goal leading to enhancement of learners (Tomlinson, 2008).

Teachers have mixed feelings about the current mainstreaming practices. They acknowledge some benefits for children with disabilities being educated in the general education setting, they were also quick to point out areas in the mainstreaming practices were less than desirable. The teachers’ negative attitudes toward mainstreaming impact their professional practices. Teachers who do not support mainstreaming practices demonstrate this disapproval by their actions and by the strategies they use in the classroom (Fuchs & Fuchs, 1998).

Daycare workers reflected on the importance relationship of both positive attitude and effective practices. Most of the daycare workers appreciate the training program compared before where they have limited knowledge about early intervention and play.

The results showed that early intervention training program enhanced attitude, beliefs and practices using play. It creates an awareness among daycare workers about the play-based interventions and may share their experience to address the daycare needs of children with autism.

Daycare workers realized the importance of play and its many applications and modification that can be done. They were able to identify play strategies through singing, group games and free play that will work to increase communication, imitation and joint attention. Pre-

training interview and observations revealed that daycare workers have little or minimal play time for children, unfacilitated play where children have their free play instead of having specific games of group play. They also rely on what they only have in their centers. They have their own strategies when dealing children with autism such as ignoring, letting caregiver or parent stay inside the room to assist and calm the child, giving verbal praises as well as conditions that they will have their free time if they behave in class.

In post-training, daycare workers were able to modify songs and group play that could be suitable in an inclusive classroom. Positive attitude, beliefs could reinforce successful teaching practices. These can also assist other teachers to change their views and perceptions with regards to early intervention using play and children with autism.

#### **4.2. Research Question 2: What is the Level of Skills in Teaching Imitation, Joint Attention and Language Among Daycare Workers**

- a. Before intervention
- b. After intervention

During the focus group discussion and initial training session, most daycare workers stated that their knowledge about autism are lacking. However, some of the daycare workers said that they were able to make adjustments for these children. Some of the daycare workers were familiar with circle time songs and games. They were able to listen, follow instructions, and asked for clarifications when the children exhibit inappropriate behavior and not able to follow them. Some daycare workers feel that play will only happen if the children with autism cooperates with lesser tantrums. They were inconvenient in giving verbal and gestural commands, use materials and assist children to play.

They stressed out that they cannot choose the severity of children with autism who will enroll in their center. There are times that daycare workers observed and asked questions because of the unfamiliarity of the autism condition exhibited by the children and the activity itself. Some daycare workers were able to ask how they will incorporate play activities in their lessons and schedule. But during the third up to fifth day of early intervention training program, the level of skills of daycare workers improved through cooperation, patience and perseverance. The daycare workers started to memorize circle time songs, implement games which they can observe children with autism participate, modify group activities where they can make children with autism attend and display joint attention, identify materials which they can make such as flashcards and flipflap book. They were able to sing and memorize songs. Finally, the daycare workers were able to recognize continuous training, additional knowledge and meaningful interaction among the class.

The level of skills in teaching imitation, joint attention and language was determined before using the Play-Based Early Intervention Program. The same skills were assessed after implementing the Play-Based Early Intervention Program. The results are shown in the figure below

**Table 1**  
*Level of Skills in Teaching Imitation, Joint Attention and Language Before Play-based Early Intervention Training Program*

<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
ImitationPRE	10	30.00	75.00	57.8000	16.27404
LanguagePRE	10	30.00	55.00	49.8000	7.81452
JointAPre	10	13.00	20.00	16.2000	2.61619
Valid N (listwise)	10				

Overall, the mean scores prior to intervention were at the average level.

Table 6 shows that before the play-based early intervention training program, the overall mean of skill level is 57.80 for Imitation, implying that the daycare workers were at average level. Daycare workers can implement imitation activities such as *Paggaya Gamit ang Malaking Bahagi ng Kalamnan* (Gross Motor), *Paggaya Gamit and Isang Bagay* (Object Imitation), and *Paggaya Gamit ang Maliit na Bahagi ng Kalamnan* (Fine Motor) with minimal to moderate supervision to use physical and hand-over-hand assistance to children with autism, modelling the skills, to reward the appropriate response and modify activities concerning imitation.

**Table 2**  
*Level of Skills in Teaching Imitation, Joint Attention and Language After Early Intervention Training Program*

<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
ImitationPost	10	47.00	75.00	67.4000	9.58239
LanguagePost	10	47.00	59.00	54.8000	4.07704
JointAPost	10	16.00	20.00	18.3000	1.76698
Valid N (listwise)	10				

Overall, the mean scores prior to intervention were at the high level,

After using Play-Based Early Intervention program, Table 7 above showed that there was a significant improvement in imitating *pag-upo*, *pag-tayo*, *pag-talon*, *paghagis ng bola*, *pagpapatunog ng dalawang bagay na hawak*, *pagpalakpak at pagkawayng kamay*. The overall mean was 67.40, which implies that daycare workers can generally implement imitation activities with minimal to unsupervised manner. This improvement over pre-test results showed that Early Intervention Training Program is an effective approach on how to teach Imitation to children with Autism.

Teaching skills of daycare workers facilitating Language before the early intervention training program was at 49.80. They were familiar with the activities such as *pagtuturo ng kanta*, *pagtuturo ng aksyon sa mga pang-batang kanta*, *pagtuturo upang tumingin kapag tinawag ang pangalan*. However, daycare workers had difficulty in getting the attention of children with autism. Other factors that contribute to the problems pertaining to the delivery of instructions were the level of assistance the child needs, the persistent inappropriate behavior, environmental distracters and lack of child's attention. Verbal imitation is used for corrective feedback and supervision.

After using Play-Based Early Intervention Program, marked improvement was noted in most of the skill when teaching Language activities. These were *pagtuturo ng kanta, pagtuturo ng aksyon sa mga pang-batang kanta, pagtuturo upang tumingin kapag tinawag ang pangalan, pagtuturo upang umupo, Pagtuturo sa pagsunod sa isang utos, pagtuturo upang pangalanan ang iba't-ibang bagay, pagtuturo ng tunog ng letra*. Daycare workers were able to use behavior strategies such as ignoring inappropriate behavior, using social praises when the child follows and exhibits positive behavior, and redirective activities to inappropriate behaviors.

Teaching Joint Attention Skills was the third skill included in the play-based early intervention training program. As indicated by the mean of 16.20, the daycare workers needed corrective feedback and practice supervision on establishing joint attention activities such as *pagtuturo ng pisikal na paglalaro, paglalaro gamit ang laruhan, pagtuturo upang humingi ng gusto, pagtuturo ng pagkuha ng bagay na inutos*. Challenging behaviors of children with autism affect the establishment of play focusing on joint attention.

A substantial improvement was noted after using Play-Based Early Intervention Program. Joint attention activities were implemented by daycare workers by themselves with observed teaching techniques they find working with children with autism. These were as *pagtuturo ng pisikal na paglalaro, paglalaro gamit ang laruhan, pagtuturo upang humingi ng gusto, pagtuturo ng pagkuha ng bagay na inutos*, with an overall mean of 18.30.

Daycare workers were reminded that play is child-centered and should not be insisted since play can be facilitated when the child with autism is compliant-ready. Since it was the first time that the researcher introduced the play-based program, repetitions of drills were done initially.

Daycare workers were still motivated and persistent to get the attention of children with autism and make a “connection” through eye contact before giving the commands to imitate object movement and actions. They said teaching children with autism are physically tiring and needs a lot of patience. They also added that a program is necessary for them to have something to follow when teaching happens in the daycare center.

Problems in addressing compliance were observed together with hyperactivities such as climbing on the table, running away, lying down on the floor, throwing and crying. But after two sessions, daycare workers were able to initiate redirections and engage the children with autism in making them to look, hold objects, imitate body movements and sounds. Daycare workers gradually felt confident and patiently waiting for responses from children with autism. Play engagements occurred between the daycare workers and children with autism on the third up to the fifth day.

#### **4.3. Research Question 3: Is there a Significant Difference in the Skills in Teaching Imitation, Joint Attention and Language Among Daycare Workers After Intervention Using the Play-based Program?**

Overall, there was a significant difference in skills in teaching imitation, joint attention and language skills among daycare workers after using the play-based program. The following table shows the SPSS output of Wilcoxon Signed Ranks Test:

*Table 3*  
*SPSS Output of Wilcoxon Signed Ranks Test Result*  
*Test Statistics<sup>a</sup>*

	<i>ImitationPost - ImitationPRe</i>	<i>LamguagePos t - LanguagePRe</i>	<i>JointAPost - JointAPre</i>
<i>Z</i> <i>Asymp. Sig. (2-tailed)</i>	-2.670 <sup>b</sup> .008	-2.499 <sup>b</sup> .012	-2.687 <sup>b</sup> .007

*a. Wilcoxon Signed Ranks Test*

*b. Based on negative ranks.*

The Non-Parametric Wilcoxon Signed Rank Test was used to determine if there is significant improvement in how the daycare workers facilitated the areas of concern for children with autism using the play-based program. Pre test and Post test scores were subjected to Wilcoxon signed rank test, the values computed showed that higher mean values in the post test were statistically different from the mean values in the pre test and are therefore statistically higher. On this account, the null hypothesis is rejected, and the alternative hypothesis is accepted. It can be inferred that Play-Based Early Intervention Program was effective. Teachers and paraprofessionals improved their skills in working with children with autism with performance feedback, modelling and correction procedure. Furthermore, instructional training of daycare workers elevated the level of interactions. The combination of training, goal-setting and of performance increased teacher-child interactions in daycare centers (Hall et al., 2010). Attitude, beliefs and practice were also improved followed by a series of training especially when teachers experienced positive results from the intervention (Patel, R., & Khamis-Dakwar, 2005).

According to Mazurik & Stefanou (2010), children with autism increased their social skills were improved when facilitated by paraprofessionals in the general education classroom and at the same time, those improvements can lead to better relationship with typically-developed peers.

A Wilcoxon signed-rank test showed that the play-based intervention program elicited a statistically significant change teaching imitation ( $Z=-2.670$ ,  $p=.008$ ), joint attention ( $Z=-2.499$ ,  $p=.012$ ) and language skills ( $Z=-2.687$ ,  $Z=.007$ ) among daycare workers. It can be inferred that the Play-Based Early Intervention Program was effective in establishing early intervention play level of daycare workers focusing on Imitation, Joint attention and Language of children with autism. Daycare workers performance feedback and demonstration of play activitie in imitation, joint attention and language were noted ater two days of initial training sessions. In imitation of body movements: pagtuturo ng pag-upo, pagtayo, pagtalon; Object Imitation: shaking maracas and tambourine; and Action Imitation: clapping, waving, and raising arms were successfully implemented to children with autism. Children with autism on the otherhand can performed the imitation activities with physical assistance from daycare workers.

#### **Changes in Teaching Imitation Skills.**

From the table, it can be seen that there was a statistically significant change in teaching imitation skills ( $Z=-2.670$ ,  $p=.008$ ), among the participants.

Following the training, all daycare workers were able to show imitation of object and action techniques supplied with corrective feedback during the first two days of training proper. They also became increasingly aware of other problems that may cause a child with autism the inability to imitate in a play setting. They stressed out that teaching imitation using objects was easier than teaching to imitate both fine and gross motor activities.

Imitation is an important social-communication skill that emerges early in development. It performs an important role in the development of cognitive and social skills in young children (Ingersoll, 2010). In children with autism, imitation has been found to be significantly impaired (Williams et al., 2004). Delays in imitation have been associated with impairments in other social-communication skills led to propose that imitation is a critical skill to target in early intervention (Ingersoll, 2008; Rogers et al., 2003).

### **Changes in Teaching Language Skills.**

From the table, it can be seen that there was a statistically significant change in teaching language skills ( $Z=-2.687$ ,  $p=.007$ ) among daycare workers.

The ability of daycare workers to incorporate language into play have significantly increased. However, they also recognized that most if not all children with autism have language delays that may be a barrier in producing meaningful utterance. They have agreed that verbal imitation is prerequisite in teaching children with autism to make verbal sound initially before moving up to labels. They were able to lead circle time and memorize nursery rhyme songs. They were able to reconnect their observation to actual teaching of verbal imitation to children with autism that attention, looking and listening are prerequisite in teaching language skills. They were able to teach children with autism to follow receptive commands easier than making children with autism imitate words due to inattention and inappropriate behaviors displayed.

By providing the teachers with appropriate strategies for communication, children with autism will improve. This would lead for the teachers to facilitate meaningful communication among students with and without special needs inside the classroom (Min & Wah, 2011).

### **Changes in Teaching Joint Attention Skills.**

From the table, it can be seen that there was a statistically significant change in teaching joint attention ( $Z=-2.499$ ,  $p=.012$ )

Joint attention was the first skill to be taught and implemented that showed positive results. Daycare workers were able to engage children with autism in joint attention bids that lasted for three to ten minutes or more, depend on the preference of the child with autism on the toy being used. They were able to use toys to make these children attend and manipulate to establish joint attention.

Significant changes were noted in the following Joint attention activities: jumping, crawling and climbing on blocks during gross motor play, sitting down on the chair, looking and holding hands during circle time, and participating in trip to Jerusalem, stop and go, shooting

balls with minimal to moderate assistance. Maladaptive behaviors such as shouting, throwing, and resistance were noted when assisted by daycare workers.

Joint-attention (JA) has emerged as a potential underlying link between socio-communication deficits and primary cognitive substrates of autism. It is defined as an early social-communicative behavior in which two individuals share attentional focus on an object or event, for the sole purpose of sharing that interesting object with each other (Rao, 2014).

Studies using group comparison design and matched sample design showed that teaching approach may be effective in improving joint attention skills in children with autism (Kasari, 2002). Children who were taught at the appropriate developmental play level acquired the play activities and generalized them more often than when taught play skills at their actual age level (Lifter, et al., 1993).

Studies have documented proofs on the outcome of interventions that target joint attention. Intervention models in which joint attention figures as one of the key components of the curriculum have reported good and positive results. Children with autism would show deficiencies in development of joint attention behavior and this would be one of the first characteristics of the disorder (Naber et al., 2007).

We should acknowledge that joint attention is lacking in children with autism, and we should increase our efforts in addressing this skill, similar to increasing our efforts toward acting reciprocally with them (Gernsbacher, 2006). Three important elements were found to be essential in training paraprofessionals: practical training, staff should find the training favorable, and long term on-going support for trained skills for maintenance (Leblanc et al., 2005). Teacher training is important to provide quality service for those individuals with autism. Basic principles, instructional techniques, behavioral teaching methods may improve (Luiselli et al., 2008).

Study shows that special education teachers have a high degree of importance in competencies representing the foundation for services and intervention programs confirmed by professional standards of practice (Theeb et al., 2014). The result showed a high degree of importance for all professional competencies of teachers. However, there are needs in special education to consider the improvement of the level of practice of competencies. Training in play-based early intervention will enable daycare workers to implement activities focusing to improve imitation, joint attention and language of children with autism.

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#### **4.4. Research Question 4: What are the Components of Play-based Early Intervention Program for Children with Autism that Daycare Workers find to be Significant?**

Activities of the play-based early intervention program came from the focus group discussions, baseline teaching skills, observations and interviews of daycare workers. General activities which can be task analyzed and breakdown into specific ones are identified. They expounded that inclusion of children with autism together with regular children is important if they want to implement the trainings they have had undergone. They gave characteristics a typical teacher would do such as “*turuan ng maayos at maliwanag*” (teach orderly and clearly) refers to breaking down lessons, adding examples, and lots of repetitions. They were eager to know more about the autism in general as well as behaviors they already observed in their centers.

## Causes of Autism and Maladaptive Behaviors

The first significant component of play-based early intervention program is about providing established and accurate characteristics of children with autism to daycare workers using reliable sources such as DSM5 and researched-based literatures. The participants asked "Saan ba talaga ito nakukuha?" [What causes autism?] "Bakit noong araw ay wala namang mga ganyan." [Why are there no reported cases back in the day?] Some participants were able to say common behaviors they observed such as "Para silang bingi kasi di sila lumilingon pag tinatawag." [They (children with autism) are like deaf. They do not attend when they are called.] "Hindi sila sumasagot pag tinatanong." [They (children with autism) do not answer when asked.] "Nagsasalita at naglalaro sila mag-isa sa isang sulok." [They (children with autism) do self-talk and play solitarily.] "Minsan pinapabayaan ko dahil umiiyak at sumisigaw pag inaya mo." [Sometimes, I ignore them (children with autism) when they shout and cry when you called them.] "Hindi sila makagaya ng mga pinapagawa halimabawa yung mga exercise bago magsimula yung klase." [They (children with autism) cannot imitate activities such as exercises before the class starts.] Teachers who have limited knowledge and experience in teaching children with autism should be provided with information on what is really the autism condition. To meet the expectations of being a teacher of children with autism, related training and hands-on experience are counted to increase understanding and effective teaching service (Hoff, 2008; Syriopoulou-delli et al., 2012).

## Additional Activities and Teaching Strategies

Daycare workers stressed out that "case to case basis na pagtuturo ang kailangan sa mga batang my autism", "iba't ibang pagtuturo ang kailangan nila dahil nahuhuli sila sa pagsasalita at pakikisalamuha, kulang sa espesyal na gamit." [Various teaching strategies are needed for them (children with autism) because of the delayed in speech and socialization. Materials or teaching are lacking.] Daycare workers have ideas and understanding of the delays. But still, additional training and materials are needed; "kulang sa training sa pagtuturo", "pagtuturo na gumaya, makisalamuha at makipag usap/makipag ugnayan sa ibang tao", "nahihirapan sila mag-focus habang nakikinig sa teacher", at "paulit ulit na pagtuturo", "paulit ulit na praktis" at "pagsubabaybay ng mga magulang ang kailangan." "Sana may magsuporta sa amin para may mga ganitong training kasi mahirap talaga kng paano mo sila tuturuan kasama ang ibang bata." Daycare workers stressed out how important training is in addressing impairments commonly observable in children with autism in the daycare. The need for adapting teaching methods was necessary due to the fact that these children exhibit various behaviors with different level of skills. It is important to evaluate the attitude and experience of community-based workers as basis for creating appropriate programs. This will also give way to apply evidenced-based techniques in early intervention programs (Stahmer et al., 2005).

## Parental Support and Cooperation

There were overlapping answers from daycare workers such as a "kulang sa pang pinansyal ang magulang" [Parents are lacking financially.], Daycare workers need the full cooperation of parents especially financially in order to carry out tasks for their children. "Dalhin ang mga batang may special needs sa eskwelahan na tulad nila". [Bring children with autism to the schools that will cater them.] They understand that there were options related regarding the early intervention of children with autism which is related to the financial capacity of families to send their children to therapy or bigger school. Parental involvement from program planning, program monitoring up to following-up activities at home are important for effective early

intervention. They assist teachers by giving vital information about the history of the family and child's present behaviors. They continue doing hands-on supervision for possible learning opportunities (Zwaigenbaum et al., 2015).

Play is a way of learning. Daycare workers provide a variety of play approach where core deficits in autism are targeted indirectly. They stressed out the importance of play with manipulatives such as clay, water, and other materials that can be found in the surroundings. Beads, strings, blocks and other wooden and colorful materials were also helpful in getting the attention of children with autism. Singing, dancing and other body movements were found to be enjoyable and imitative. Some children with autism respond to musical sounds and physical activities. Daycare workers believe that listening and watching other kids sing to nursery rhyme songs were also instrumental in improving speech. Modeling was also important to get attention and teach appropriate behavior in the center.

Daycare teachers stressed out that continuous training is very important to be successful in implementing early intervention programs. They found out that children with autism imitate peers more than structured or one on one play. Body movements such as dancing, jumping and running are effective activities to lower hyperactivity

Daycare workers found language as a commonality in terms of significant delay. However, they thought that verbal imitation and indirect activities such as listening to songs and tapping on a beat will help these children acquire language

Daycare workers understood and applied the activities that may improve joint attention, language and imitation of children with Autism thru one on one and group activities. Although there were lacking materials, they were able to modify to facilitate activities.

## **5. Summary, Conclusions and Recommendations**

### **5.1 Summary of Findings**

The results in the study are presented according to the specific raised questions. Data gathered revealed the following findings:

1. The existing attitudes, beliefs and practices of daycare workers in managing children with autism are towards in providing early intervention of autism symptoms using acquired knowledge, addressing delays in general terms, understanding the autism condition, attending to the various needs of children with autism, and total acceptance. Ten daycare workers were able to complete the focus group discussions, interviews, and training for two week to implement imitation, joint attention and language activities. They were able to realize the importance of early intervention for children with autism and accepted the training procedures.
2. Daycare workers were trained and applied play-based early intervention program addressing imitation, joint attention and language of children autism. These are under the revised DSM V's autism symptoms: Social and Communication Domain which combines social interaction aspects and verbal/ non-verbal communication aspects.

3. Play-based early intervention training program is an effective approach to increase imitation, joint attention and language. Early detection and early intervention are critical factors to the success of any child who has a disability. The effects of teaching play strategies to children with autism show significant increase in the amount of complex types of play when toys are incorporated. (Francke & Geist, 2004). Improvement in receptive and expressive communication have been found to prevent maladaptive behaviors. (National Research Council, 2001). Joint attention was closely linked with deficits in play. This is an import target for early communication intervention (Gwynne-Atwater, 2011). Play is correlated with imitation in autism. Children with autism have problems on the imitation of functional and arbitrary actions with play materials. However, Ingersoll and Scheibman (2006) found an increase in the use of spontaneous pretend play in young children with autism after teaching them to imitate actions with objects.

## 5.2 Conclusions

1. This study reveals daycare workers have existing knowledge and baseline experience about autism which can be used for continuous teacher training and acceptance of children with autism and other disabilities in the daycare. It is also proven that play can bridge communication gaps, imitation and joint attention problems which can assist children with and without special needs in the daycare. Most daycare workers rated themselves with the highest scores on imitation, joint attention and language activities. They have previous knowledge on children with autism, their behaviors and management. They were also familiar with the songs, games and some activities as it were also included in their curriculum.

Following the training program, daycare workers' attitude and beliefs made a substantial improvement and reflected into their practices. They also have high expectations that early intervention program may produce positive results for children with autism. Teacher's attitude and beliefs regarding inclusion of children with autism greatly influence the delivery mode of their instruction. Attitude were more positive if they are adequately informed and have the necessary knowledge about autism. It is recommended that daycare workers of children with autism should immerse to professional development (Agojo, 2011).

2. There was a significant difference in scores before and after the training program. Pre-test and post-test were subjected to Wilcoxon Non-Parametric Test. The test revealed that Post-test was higher than the pre-test of daycare workers. Overall, there was a significant difference in skills in teaching imitation, joint attention and language skills among daycare workers after using the play-based program. Training workshops were related to higer quality skills of child care workers regardless of educational attainment. Informal training works to meet the necessary skills a daycare should possess (Burchinal et al, 2002).
3. Daycare workers expressed positive and favorable feedback about the play-based training and its implementation to children with autism. Support for future training of daycare workers to teach children with autism is possible. When teachers of children with autism were trained and follow the teaching procedure to meet the baseline skills and improve behaviors, there is high probability of engagement, increased repetitions of acquired behaviour and generalization which have practical and functional value (Barton & Wolery, 2010).

### 5.3 Recommendations

1. Future research would benefit from exploring the daycare workers' attitude, beliefs, and practices and their effects on teaching competencies and practices. Positive attitude, beliefs and practices were found to be significant in creating goals, activities, facilitation and modification of training programs. Long term planning and goals for training supervision will yield better training foundation for new daycare workers to enhance their attitude, beliefs and practices.
2. The play-based early intervention program can be improved and modified to the changing needs of both daycare workers and children with autism. It may be also used by daycare workers who teach other disabilities. In the current study, attitude, beliefs, and practices of fifteen daycare workers were identified and found out to be similarly positive. Having more participants and comparing their attitude, beliefs and practices to childcare institution and private early childhood centers would be beneficial. With these positive traits among daycare workers, there will be a higher chance of being successful in future training especially when these daycare workers experienced positive results where they witnessed positive outcome as a result of these kind of trainings. On the other hand, the findings addressed the need to expand early intervention training programs to include other developmental and behavior problems cause by autism.
3. Play-based early intervention program can be facilitated by daycare workers to children with autism and continuously be improved, sustained and modified according to the changing patterns, severity of conditions, and culture of Filipino children with autism is possible since average daycare centers per city are between seventy to one hundred or more. Play inside the daycare center can be done to teach children with autism to imitate, introduce communication and joint attention. Studies on different types of play and their possibility of implementation in daycare centers with children with autism are needed. It is important to include the necessary materials to establish play and use specific skill to children with autism. Specific type of play can be identified and used to address specific type of delays or other related developmental problems. Play-based early intervention program can be used in transition from daycare to kinder level and kinder to grade one.
4. Researchers may study the effects of play-based early intervention program on children with autism and other disabilities. Additional research is needed to develop and validate play-based programs focusing on children with autism as participants. Future studies can focus on behavior-based play components and strategies a well a use of play across discipline such as occupational therapy, physical therapy and speech and language therapy. The daycare workers taught the imitation, joint attention and language activities in their own teaching methods. Needs assessment, focus group discussion, lecture and training were facilitated to improve their way of teaching. They were familiar with the activities but material such as wooden blocks, musical instruments animal figures and cars are some of the things they wish to have in their center

## 6. Implications

This chapter presents implications from the research findings that may enlighten the role of daycare workers as one of professionals who can teach children with autism given with appropriate training to enrich their skills and to direct and make a significant impact for future studies in the field of special education, program planning and play development.

### 6.1. Special Education Study

In the fields of early childhood education and special education, a number of research may be conducted by using different population and participants. Self-rating scales can be adapted or add to other instruments. This study can be replicated in private daycare centers and preschool programs with daycare workers teaching other conditions such as attention deficit hyperactivity disorder and down syndrome.

This study is valuable to the local government agencies and private institutions whose task is training supervision. The study provided relevant information on attitude, beliefs and practices that somehow transpired the skills. Therefore, identify personality attributes that can affect them teaching. Learning competencies of daycare workers can be also identified to be a basis of new training programs.

The use of different quantitative approaches such as causal comparative and correlational can be used to identify relationships of play and academic achievement of children with and without autism. Causal comparative can be used to find out the effectiveness of training programs in improving specific teaching skills of daycare workers or early intervention effectiveness for children with autism with different level of severities. Multiple baseline across behaviors, across participants, and longitudinal study designs can also be applied to measure effectiveness of interventions.

### 6.2. Development of Training Programs

The present criteria of autism and daycare center activities were the basis for the play-based early intervention training program for daycare workers. Daycare workers have existing knowledge about autism from previous seminars and workshops but still needs to be trained and guided to put those concepts into actions. Teachers who are already teaching in an inclusive environment seek proper preservice training and support from administrators to maintain a successful inclusive environment (Leatherman & Niemeyer, 2005).

Specific teaching skills should be enhanced to improve imitation, joint attention, and language of children with autism. The focus group discussions and interviews were used to create the content of the training program. These also explore broad and overlapping issues on daycare worker existing attitude, beliefs and practices as well as the present issues on meeting the competencies of daycare workers to teach children with autism.

The training program can be applied in other public and private early intervention centers where children with autism and other related conditions can be accepted. This study proved that positive attitude and beliefs on teaching children with autism lead to effective practices and higher percentage that these individuals will be successful in future trainings on the other related disabilities. The demographics of child care workers and teachers such as age and educational attainment, other personality traits such as creativity, adaptability, and leadership

and organizing skills can be studied to determine if these variables can have an effect on the implementation of play-based programs on children with autism. Play can be also modified to fit in other traditional or progressive type of education and specific curriculum to investigate its adaptability and effects on inclusion. This will also aid for recognizing learning areas to be improved and pave the way in creating programs to accommodate various cultural and social perspective.

Aside from possible effectiveness of the training program, this study can be a benchmarking tool to balance quality service delivery leading to an increased enrollment. Daycare workers can also be trained to receive basic counselling skills to augment their interpersonal skills especially for newly diagnosed families that go through the process of adaptation. Lastly, this study suggested that there should be an evaluation criteria to come up with an alternative certification or licensure to raise the standards of daycare workers.

## **Play Development**

The importance of having a play program for teachers of children with autism especially in an early intervention setting is undeniable. The program can be aligned to the present daycare programs and support the implementation, modification and accommodation for children with autism. Inclusion is proven to be effective in the early childhood intervention. Therefore, childcare workers and other personnel including daycare workers should undergo training to receive appropriate skills and knowledge to meet the needs of children with autism (Sucuoglu et al., 2014)

When developing training programs for daycare workers of inclusive settings, gathering of data to identify the needs and current problems that need to be addressed is important. Planning and formulation of goals should be realistic and doable.

The activities and materials must be aligned with the developmental delays that need to be targeted. Modifications are practical strategies to cater the changing needs and behaviors of children with autism. Early skills that are affected by autism are imitation, joint attention and language. These core areas are critical in establishing the foundation of reading, writing and math and are interrelated with social and language. These are prerequisite to acquire more complex learning areas. Daycare center is an ideal and practical place where play is already existing. It is progressive and promoting quality informal education when inclusion becomes a norm. Laws are already in place to back-up both training of daycare workers and teaching children with autism. Commitment, financing and enforcement of policies should take place to keep special education moving forward.

Gross motor play using obstacles, nursery rhyme songs, flashcards, books, and group games had to have more demonstrations, modeling and supported visuals and auditory to get the attention of children with autism. Baseline skills of daycare workers helped them to recall and review teaching strategies and finally make a connection to the play-based training program. Daycare workers were familiar with the activities with a sense of discovering and exploring new ideas in managing children with autism. Related activities and materials such as outdoor facilities, assistive technologies and computer application can be interspersed in play with varying level of teacher support. Play-based training programs and activities are innovative on its own that needs to be harnessed with creativity.

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# SPECIAL CHEF CORNER PROGRAMME: A JOB SKILLS TRAINING PRACTICE AS A PREPARATION FOR CAREER TRANSITION PROGRAMME

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## ABSTRACT

This study was conducted to discuss the implementation of Job Skills Training (JST) activities for Special Needs Students (SNS) in Special Education Integration Programme (SEIP), Bandar Sungai Buaya Secondary School. Information and research data were obtained through mixed methods (qualitative and quantitative) with 2 existing SEIP teachers, school administrators and also the school canteen operators to identify issues and problems that cause JST activities to stop. The findings show that the purpose of the implementation of this JST needs to be explained to the relevant parties. Implementation methods and procedures also need to be improved. The Kaizen approach is used. Following that, SNS SEIP Bandar Sungai Buaya Secondary School has implemented a Special Chef Corner Programme which involved 3 teachers, 13 SNSs during break time and 4 SNSs in the afternoon. The implementation of Special Chef Corner Programme has been carried well in 2018 and 2019. SEIP students are also more confident, cheerful and able to socialize well. This programme has indirectly provided services to Form 3 and Form 5 students who need to attend extra classes in the afternoon. The idea of this Special Chef Corner Programme successfully improved the implementation of JST activities and was further effective in resolving the challenges of SNS's preparation for the Career Transition Programme.

**Keywords:** Students with Special Needs, Job Skills Training, Career Transition Programme, Advocacy, Kaizen Approach, Observe-Plan–Do–Check–Adjust (OPDCA) Cycle

## 1. Introduction

SEIP was first introduced in Malaysia in 1962 among others to achieve the goal of developing the talents and potential of students through vocational education to produce semi-skilled groups and in turn become an asset to the country.

This is in line with the Philosophy of Special Education which is, "Special Education in Malaysia is a continuous effort to produce people who are skilled, oriented, capable, faithful, independent, able to plan and manage life and realize their potential as an individual and a balanced and productive member of society in line with the National Education Philosophy."

While the Special Education Mission is, "Provide quality education to students with special needs to make them independent, successful in life and contribute to society and the country."

Since the academic mastery of SNS SEIP is minimal, then they need more skills training that can guarantee the future at least to be independent after school. To achieve this goal, a special education curriculum has also been established. The definition of Curriculum according to the Education (National Curriculum) Regulations 1997 Under the Education Act 1996 (ACT 550) is "An educational programme that includes curriculum and co-curricular activities that cover all knowledge, skills, norms, values, cultural elements and beliefs to assist a student's development in terms of physical, spiritual, mental, and knowledge imparting".

Beginning in 2017 the Special Education Secondary School Standard Curriculum has been implemented. Based on the Curriculum and Assessment Standards Document (CASD) of the Special Education Secondary School Standard Curriculum on page 6, it is stated that JST should be disclosed to SNSs, especially SNSs with learning difficulties. JST is a set of coordinated activities for SNSs with learning disabilities that are outcome or impact oriented to enable them to transition from school to after school including vocational training, employment, community service and independent living training. The main goal of JST is to provide opportunities for SNS to improve and master self-skills, communication, socialization and basic skills related to work in life. JST can be divided into three forms, namely:

- a) Internal training in the form of well-planned project work.
- b) Job training involving external parties or external work.
- c) Actual job training.

Based on the CASD on page 9, the Career Transition Programme (CTP) is an element of SNS's readiness to be in the world of work. SNS needs to have employability skills, namely various basic skills and soft skills. The application of such skills should take place throughout the teaching and learning process. The CTP is a skills development and support development programme for SNS implemented from form one to form five. The programme provides psychological, emotional and mental support to help SNSs adapt to the environment, individuals and communities in schools, families, training places and workplaces. This programme also aims to provide and support the transition process of SNS towards the world of work and adulthood, including aspects of family, social community and recreation based on the ability, strength, interest and potential of SNS after school.<sup>1</sup> The CTP needs to be supported by JST activities that are practiced in schools. Therefore, JST is a preparation for the CTP.

While CASD on page 20 discusses the application of the Entrepreneurial Element. It aims to form the characteristics and practices of entrepreneurship to become a culture among SNS and able to cultivate attitudes such as diligence, honesty, trust and responsibility as well as develop creative and innovative minds. Based on all the factors mentioned above, an action research needs to be made so that JST activities in SEIP Bandar Sungai Buaya Secondary School can be implemented again.

## 2. Problem Statement and Objectives

The Special Education Integration Programme (SEIP) at Bandar Sungai Buaya Secondary School was established in 2010 starting with 2 teachers and a Student Management

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<sup>1</sup> Kementerian Pendidikan Malaysia (2019)

Assistant to handle a total of 6 students with various disabilities. However, the number of SNS has increased from year to year.

Job Skill Training (JST) activities have been implemented every year since it was established. The idea of this Special Chef Corner Programme has been sparked and is planned to start in 2018 to meet that need. It is an effort to improve the practice of JST, the implementation of practical activities for the subject of Self-Management and Basic Culinary Skills as well as PPKI Entrepreneurship Club activities that have been carried out over the years. It is also related to the Career Transition Programme (CTP) which was first implemented in 2020 as well as the continuation of the implementation of 1 PPKI 1 Product Programme organized by the Hulu Selangor District Education Office which was launched on 15 August 2016.

SNS in Bandar Sungai Buaya sells Malaysian ice cream and repackaged snacks on a small scale. Each SNS takes on their respective roles according to their level of ability. However, in 2017, the school management brought up issue that put this programme to an halt. The challenge arose on how advocacy for SNS can be done. This issue is very important to be overcome to ensure the development and progress of SNS of SEIP at Bandar Sungai Buaya Secondary School. It is also important for MBK if teaching and learning activities can be implemented in practice so that they understand better and subsequently achieve a competent skill level.

This study was conducted to achieve the following objectives:

- a) Review the implementation of JST and 1 SEIP 1 Product Programme.
- b) Complete sales activities as in the syllabus of Self-Management and Basic Cooking.
- c) Continuing the activities of the Entrepreneurship Club.
- d) Explore more efficient and systematic implementation methods.
- e) Build a friendly and harmonious relationship with the whole school and community.
- f) Build the skills of SNS SEIP, namely:
  - i. Improve communication skills and self-advocacy skills.
  - ii. Increase self-confidence.
  - iii. Able to interact and socialize with mainstream students well.
  - iv. Be a mentor to other SNSs.
  - v. Ready to join the CTP.

The main challenge for special education teachers is to make plans in learning to meet the curriculum that is appropriate to the level and cognitive abilities of each SNS. At the same time special education teachers need to fight to help and guide SNS for their self-advocacy. Therefore, the special education teacher profession requires individuals with strong self-efficacy and resilience. Programmes in the form of advocacy and administrative skills for special students need to be intensified throughout the school. This is to coordinate the understanding of administrators and management in handling matters related to students with special needs. Thus, it streamlines the management process and facilitates special education teachers to improve the teaching and learning of students without any unnecessary administrative barriers. (HA Amran et.al. 2019)

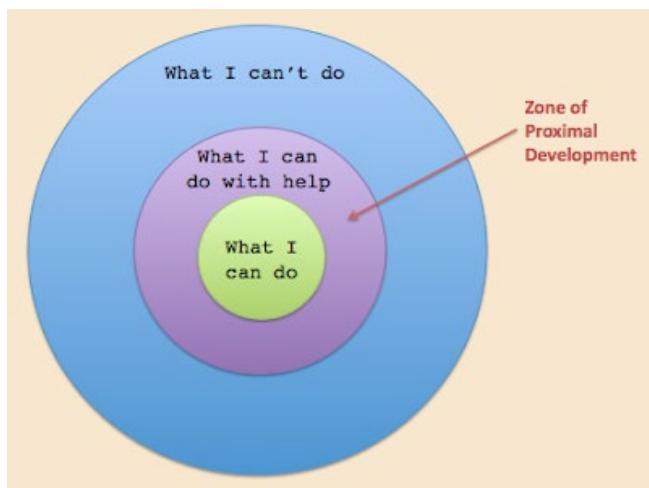
### **3. Literature Review**

A number of theories are found by the researcher to compliment the smooth management of JST SEIP Bandar Sungai Buaya Secondary School and also other activities in education management.

### 3.1 Zone of Proximal Development

It is a concept developed by the Russian constructivist psychologist and sociologist Lev Vygotsky (1896-1934). Zone of Proximal Development (ZPD) is defined by Vygotsky (1978) as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky 1978, p. 86).

Figure 1: ZPD Model



Source: Azman bin Safii, 2018

Based on the ZPD model shown above, ZPD is marked on the second purple circle which is a situation where teachers still need guidance and assistance in solving problems or performing tasks assigned to them. The blue outer circle is the zone where either a teacher is in that zone that needs total guidance and help from teachers, peers or MKO (More Knowledgeable Others). The green circle in the middle is the potential of the teacher that has been developed, that is, the teacher can independently perform tasks or problem solving on their own without the need for assistance.

The zone of proximal development is the gap between what a learner mastered (actual level of development) and what he or she can achieve when provided with educational support (potential development). It is a process in which a teacher or peer provides assistance to their peers who are in the ZPD as needed. Assistance continues to be provided to a point where the teacher is able to complete his or her own tasks or problems and no longer needs guidance. In the context of leadership, competent administrators are able to identify the ZPDs of teachers under their supervision so that planned interventions and improvements can be focused on teacher development more effectively in line with the role of administrators as leaders, mentors and motivators.

### 3.2 Kaizen Approach

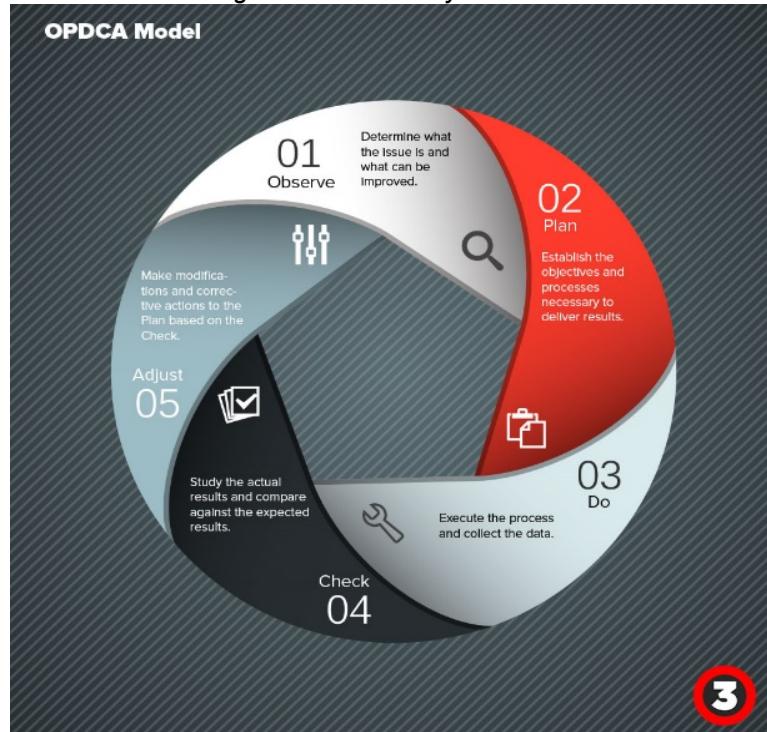
The concept of Kaizen was founded in Japan which means “continuous improvement” that focuses on processes as well as outcomes (Slobodan Prošić, 2011). Kaizen refers to every action, operation, or rule used to make a change. The focus is to maximize efficiency by influencing all parties, from ordinary employees to high-ranking individuals in the

organization. Kaizen consists of two parts, with action being the main part while the second part is philosophy or way of thinking.

There are 2 models in the Kaizen approach, namely the OPDCA Cycle Model and the "The 5 Why System" Model. (Brian Onorio, 2015)

### 3.2.1 Observe-Plan-Do-Check-Adjust (OPDCA) Cycle Model

Figure 2: OPDCA Cycle Model



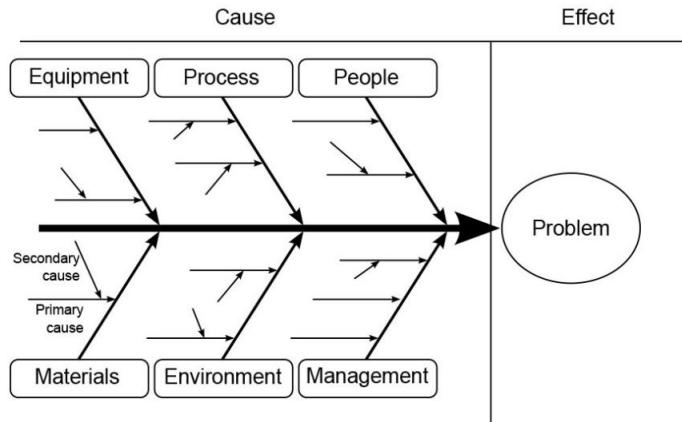
Source: Brian Onorio, 2015

The OPDCA cycle is a systematic cycle to achieve improvement of a product or process

- ✓ Observe. Determine what the problem is and what can be fixed.
- ✓ Plan. Set the objectives and processes needed to deliver results.
- ✓ Do. Implement the process, and collect data.
- ✓ Check. Check it out. Study the actual results and compare with the expected results.
- ✓ Adjust. Perform modifications or corrective activities on the planning plan based on the inspection.

### 3.2.2 “The 5 Why System” Model

Figure 3: Ishikawa Fish Bones



Source: Brian Onorio, 2015

The 5 Whys is a repetitive search technique used to examine the cause-and-effect relationship underlying a particular problem. The main goal of this technique is to determine the main problem of the defect or problem. This is a form of primary cause analysis in which the user asks a ‘series of why questions’ about a failure that has occurred while basing each subsequent question on an answer to the previous one. There are usually a series of symptoms that stem from a single cause and all of them can be seen using the Ishikawa Fishbone diagram.

## 3.3 Strategic Planning and Strategic Communication

The challenges of an uncertain and ever-changing environment demand that organizations devise a careful and reasonable planning process. This requires efforts to find and evaluate various alternatives through the formulation of the best strategy to realize the vision, mission and objectives set. Strategic planning is a key aspect in setting the direction of the organization so that all strategies and services provided are always up to date, relevant and meet current aspirations. (Samsuri, 2005)

Strategic communication is communication that is planned and used to achieve organizational goals. Communication should be seen as constitutive, based on careful planning, careful implementation and continuous evaluation. Its most discussed role is to find solutions in organizational communication issues, followed by improving employee morale and reducing emotional conflict, managing public sector reputation effectively and driving the process of organizational change, communication effectiveness and its impact on the organization, communication direction, communication channels, content communication and communication style. Other aspects seen are the role of leadership, interpersonal relationships, planning, implementation and evaluation of communication. (Maizatul Haizan et.al. 2019)

## 4. Research Methodology

This study was conducted to discuss the activities of JST by SNS SEIP Bandar Sungai Buaya Secondary School. The idea is to continue and improve the implementation of JST activities and further identify its effectiveness in resolving the challenges of implementing the CTP.

This study involved 3 SEIP teachers in Bandar Sungai Buaya Secondary School to continue the guidance of JST towards SNS with the support of all school members. It is also involved 6 moderately functional SNS who will act as mentors to share experience with other SNS. This study uses a mixed method by conducting structured interview and Need Analysis on the Special Chef Corner Programme among SEIP teachers, school administrators and canteen operators. The researcher has also analysed JST programme files and documents such as working papers and financial notes. Apart from that information on sales products is also obtained.

This study examined these research questions:

1. What are the challenges faced by the Special Need Students (SNS) of Bandar Sungai Buaya secondary school in continuing Job Skill Training (JST)?
2. Given the prescribed programme outline on Job Skill Training (JST), does it show effectiveness in solving the challenges faced?

A need analysis was done before the programme was carried out to find out the challenges faced by the SNS. A survey question was distributed to the SEIP teachers. Based on the data collected, the intervention was done. As a follow-up to check the effectiveness of the programme, another survey question was distributed to the respondents.

#### 4.1 Data Analysis

The following are the results of a questionnaire related to the implementation of Job Skills Training (JST) at Bandar Sungai Buaya Secondary School in 2017. It was given to 2 respondents.

No.	Questionnaire	Yes	No	Not relevant
1.	JST could not be continued because it did not have full support from the administrator.	1	1	
2.	JST could not be continued because it did not have full support of school people.		2	
3.	JST could not be continued due to opposition from the school canteen.	2		
4.	JST could not be continued because SEIP teachers were unable to implement.		2	
5.	JST cannot be continued because the student is incompetent.		2	
6.	JST could not be continued due to financial factors.		2	
7.	JST is well implemented.	2		
8.	The implementation of JST went smoothly.	2		
9.	JST needs to be continued.	2		
10.	Snack sales are well accepted.	1	1	
11.	Ice cream products are well accepted.	2		
12.	Buttermilk products are well accepted.	1	1	
13.	The price of the product is reasonable.	2		
14.	Break time is the most suitable time for JST activities.	2		
15.	JST activities are well recorded.	1	1	

The following are the findings of the study:

- a) There was a lack of understanding of the relevant parties and school people in general about the importance of this JST programme.
- b) Recording of JST activities is less systematic.
- c) Teachers are demotivated to continue JST because of the obstacles and challenges.
- d) JST activities and Entrepreneurship Club sales activities stopped immediately.
- e) Product revenue for Programme 1 SEIP 1 Product also stopped.
- f) The SNS training process did not run smoothly and caused the goal to achieve the objectives of JST to be hindered.
- g) Improvement in terms of product production and activity documentation is necessary.

Based on the findings of the study, there is a need to re-implement JST activities and maintain them as an important and ongoing practice for SNS. Therefore, proactive measures need to be taken. It must also be guided by policy stipulations in education and implemented in a planned manner. It also involves a careful and reasonable planning process. The implementation strategy of the programme should be seen in terms of appropriate time, appropriate product and appropriate quantity. The researcher has designed the implementation of JST using the Kaizen approach by making observations and improvements over time. A Module of Special Chef Corner Programme was outlined and has been carried out.

Among the actions that have been implemented is to prepare a complete working paper as a way to explain the purpose and method of implementation clearly such as schedule and distribution of tasks along with details of activities. Special education teachers are invited together in meetings held including meetings with school canteen operators. A letter of notification to the canteen operator containing the importance of the activity and detailed information on the implementation schedule of the activity was delivered and received well. Advertisements and promotions are distributed to the entire school population with clear product lists and quotes. Special Chef Corner Programme as a module of Job Skills Training (JST) combined 1 SEIP 1 Product Programme. The management file was created. The same goes for financial files. It is provided so that records are easily referenced and monitored.

Records of entries should be written in detail. Records of material purchases, income and expenses are also recorded. Activity reports are also prepared and presented in the SEIP management meeting every year.

JST's activities have continued smoothly. There has been an improvement from only selling Malaysian Ice Cream products to toast, fruit and milk flavoured jelly and donuts. The SEIP students involved are more cheerful and more confident. The response from the residents of Bandar Sungai Buaya Secondary Schools was also very encouraging. It has also improved the implementation of practical activities in the subject of Self-Management and Basic Culinary Skills which are implemented in a modular manner with the activities of the Entrepreneurship Club. This programme has indirectly provided services to Form 3 and Form 5 students who need to attend extra classes in the afternoon.

The following are the results of a questionnaire after the programme.

No.	Questionnaire	Yes	No	Not relevant
1.	Job Skills Training through the Special Chef Corner Program went smoothly.	2		
2.	The Special Chef Corner programme receives support from administrators.	2		
3.	The Special Chef Corner programme was well accepted by the school canteen operator.	2		
4.	The entire school community support the Special Chef Corner Programme	2		
5.	The special need students like to get involved in the Special Chef Corner Programme	2		
6.	Special Chef Corner Programme helps improve the skills of special needs students	2		

Suggestion from the SEIP teachers:

1. Train students according to certain skills until they are really proficient or master the skill.
2. Increased sales time.
3. Additions and various menus.
4. Addition and disclosure of sales and marketing / promotion knowledge among students.

## 5. Conclusion

The idea of this Special Chef Corner programme successfully improved the implementation of Job Skills Training (JST) activities and was further effective in resolving the challenges of SNS's preparation for the Career Transition Programme (CTP). This activity will be continued with improvement from time to time with the hope that all parties will continue to work together, support and work with special education teachers either directly or indirectly towards upholding the high-quality national education system in producing SNS that are skilled and noble in character.

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## SCHOOL BASED INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

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### ABSTRACT

School-based intervention can be used to solve the problems of children with autism spectrum disorders who are in the lower-middle economic class. This research aimed to find out the types of intervention in school-based interventions and implementation of school-based interventions for children with autism spectrum disorders. This research used a literature study with a qualitative approach consisting of three stages, data collection, data analysis, and conclusion/drawing. The literature was collected from various sources related to school-based interventions for children with autism spectrum disorders. Eleven out of twelve articles showed that school-based interventions with multiple types of intervention could provide positive benefits for developing social communication and behavior of children with autism spectrum disorders. The implementation of school-based interventions consists of 4 stages, namely: (1) identification and assessment, (2) program planning, (3) program implementation, (4) program evaluation. School-based interventions for children with autism spectrum disorders are strategic solutions to overcome children's social-communication and behavior problems and obstacles without spending more.

**Keywords:** school-based intervention, autism spectrum disorder

### 1. Introduction

Autism spectrum disorder is a neurodevelopmental disorder characterized when a deficiency in social communication is accompanied by repetitive, exaggerated, and limited interest behaviors and routine and rigid behavior towards change (American Psychiatric Association, 2013). Communication of students with autism spectrum disorders is very limited or even non-existent by a lack of reciprocity in communication, a lack of understanding of nonverbal communication in social interactions, and a lack of initiating, developing, maintaining, and understanding a relationship (Hart Barnett, 2018). Students with autism spectrum disorder have patterns of behavior, limited activities and interests, and repetitive behavior. Children with autism spectrum disorder also have challenging behaviors, such as tantrums, self-injury, and aggression. (Koegel et al., 2012). The term spectrum is used because of the heterogeneity and severity of symptoms of each child with autism. Every child with autism has different characteristics from other autistic children. The characteristics of sensory processing of children with autism spectrum also differ from child to child. Sensory symptoms are a complex set of behavioral reactions to the sensory environment. Sensory symptoms can be broken down into three patterns: hyperresponsiveness, hyporesponsiveness, and sensory seeking

(Boyd et al., 2010). Hyper-responsiveness involves overreacting to the sensory environment (e.g. covering their ears to hear someone's singing). Hyporesponsive behavior lacks reaction to the sensory environment (for example, not turning to loud sounds). Examples of sensory seeking include prolonged visual inspection of toys or repeated touching objects. The communication characteristics of each child with autism also vary. Therefore, treating students with the autism spectrum requires individual intervention.

Interventions carried out individually support children in developing communication and social interaction. Individual interventions are also used to improve the behavior of children on the autism spectrum. In addition to being carried out individually, the experts must carry out detection and intervention as early as possible to provide more satisfaction to parents of children with autism than children with autism who are detected and given intervention late. (Bejarano-Martín et al., 2020). After an autistic child is intervened early individually and is obedient, the child can take a transition class and be included in a classical class with other friends. Children with autism obtained interventions obtained individually by enrolling them in therapy institutions. Usually, parents feel that their child needs to be brought to a specialist and then handled individually in a therapy institution. Therapy is to improve communication skills and reduce excessive or hyperactive behavior.

Caring for children with autism causes heavier stress for parents than children with special needs of other types (Dabrowska & Pisula, 2010). Based on a study conducted by (Schieve et al., 2007), even parents of autistic children who already know about the condition of autism can experience high stress and irritation with their autistic children's behavior. Therefore, families strive to provide the best services and interventions for their children to improve their communication and behavior. Families face the challenge of adapting to the new and unexpected realities of having an autistic child in the family. They have to rearrange their family roles, find a suitable treatment, and in many cases, pay high fees for specialist or expert advice ((Hock et al., 2012); (Keenan et al., 2010); (Depape & Lindsay, 2015).

Therapy institutions provide individual intervention services for children with autism to improve their social communication and improve children's behavior for the better. However, the cost of similar intervention services in therapy institutions is relatively expensive. Rahayu (2020) states that around Jabodetabek, the cost of therapy for children with autism is around Rp. 200,000 per session. UPT Autism Service Center (PLA) Solo provides therapy for children with autism disorders for Rp. 35 million, which is run for eight months. (Ryanthie, 2017). Meanwhile, Sulistiyo (2019) stated that the cost of therapy for children with autism is around Rp. 250,000 to 3,000,000 per month and can reach IDR 8,000,000 for the middle to upper-class economy. This fact is certainly burdensome for families of autistic children who come from middle to lower economic circles or are less fortunate. The high cost makes parents think twice about including their children in therapy institutions. Besides, parents tend to choose their children to go to school without special services. In the end, not all children with autism participate in therapy services outside of school, so that communication, social interactions, and behavior are not handled optimally. Therefore, special intervention services for children with autism would be better if implemented at schools. So, parents do not need to spend a lot of money to provide special intervention services or treatment to their children outside the school. These are also known as school-based intervention.

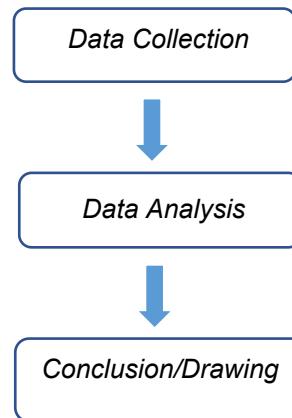
School-based intervention is effective in helping children with autism adjust to friends, especially in improving communication and socialization (Dykstra Steinbrenner et al., 2015; Einfeld et al., 2018; Hart Barnett, 2018; Whalon et al., 2015). Besides that, school-based intervention has a positive effect on improving good behavior. School-based intervention also significantly affects language and learning skills with ABA implemented at school (Grindle et al., 2012). Therefore, this research aims to determine the types of intervention in school-based interventions and the implementation of school-based interventions for children with autism spectrum disorders. Solutions and initiatives for developing a special school-based

intervention for children with autism spectrum disorder need to be implemented in an integrated manner to support activities of children with autism in the classroom. Parents will be optimistic in raising their child with school-based intervention.

## 2. Method

The literature study method is used in solving the problems in this study. Twelve papers related to school-based interventions and school-based therapy were selected through several kinds of literature such as articles, journals, official reports, and books. The articles of this research found by searching some of the keywords. Some of the keywords used are school-based intervention for autism spectrum disorder, school-based intervention for children with autism, school-based therapy for children with autism, autism spectrum disorders. The process in this research consists of data collection, data analysis, and Conclusion/Drawing. The research process can be seen in Figure 1 as follows:

Figure 1. Research Procedure



Data collection was carried out by selecting and collecting data related to school-based interventions and school-based therapy. After the data is collected, the data is analyzed to find information and facts that answer the research questions. The process of the data analysis used the meta-analysis technique by employing the inductive descriptive technique. Then the final process of this literature review is to draw conclusions based on data analysis. It can find the answer to the research questions and objectives.

## 3. Results and Discussion

School-based interventions for autism are devoted to providing interventions for children with autism and are implemented in an integrated manner. This service eases parents of autistic children with the low economic ability to enrol their children for free intervention or therapy at school. School-based interventions for children with autism support parents of autistic children to be optimistic that their autistic children receive intervention or therapy services. Even though they are economically disadvantaged and are not included in the intervention service program (therapy institute) outside of school. The objectives of this school-based autism intervention are (1) overcoming socialization and communication problems and adapting to society, (2) training language functions, (3) fix and reduce behavioral issues, (4) train independence, (5) increase competence, explore talents and interests. (Bektinginsih, 2009). Collaboration between school principals, therapy teachers, counselling teachers, parents, psychologists, and all school members is needed to achieve this goal. Intensive and comprehensive interventions that can be provided focus on improving communication and socialization and developing talents and interests so that it is necessary to pay attention to the readiness of teachers and school members in implementing interventions. (Koegel et al., 2012).

This article analyzes 12 studies on school-based interventions that have been compiled from various sources. There are multiple forms of interventions used to provide school-based interventions for children with autism spectrum disorders. Almost all of them deliver positive results in developing communication, social skills and improving children with autism spectrum disorders behavior.

*Table 1: School-Based Intervention for Children with Autism Spectrum Disorder*

Research	Intervention	Target Behavior	Result
Apriyani et al., 2012	Established a Learning Support Center (LSC) with a curriculum modification by creating a Social Communication and Individual Educational Program (IEP)	Social communication and learning abilities	Not explained
Bektiningsih, 2009	Creating autism therapy programs with behavior modification or the ABA (Applied Behavior Analysis) method, Occupational, Sensory Integration, Physical, Intervention with peers in Special Schools Social communication, Behavior, Sensorimotor	Social communication, Behavior, Sensorimotor	Positive
Einfeld et al., 2018	The Secret Agent Society (SAS) Program in autism special classes by Social Aspect (Autism Spectrum Australia)	Social Communication	Positive
Anderson et al., 2018	Peer social interactions and backward chaining procedures combined with different reinforcement	Social communication and behavior	Positive
Spaniol et al., 2018	(Computerized Progressive Attentional Training; CPAT)	Attention (Communication)	Positive
Eldevik et al., 2012	Early Intensive Behavioral Intervention (EIBI) in mainstream preschools	Behavior	Positive
Sutton et al., 2019	behavioral interventions (direct verbal or visual instruction, feedback, encouragement, and reinforcement), cognitive-behavioral interventions, peer and participant training on social or academic skills, or social clubs' formation in the same particular interest.	Social communication and behavior	20 of the 22 articles reviewed showed positive results
Whalon et al., 2015	Social competence interventions associated with Peer	Social Communication	Positive
Dykstra Steinbrenner et al., 2015	Advancing Social-Communication and Play (ASAP) intervention (additional intervention targeting joint attention and symbolic playing skills)	Social Communication	Positive
Martinez et al., 2016	Social stories (63% of all research on instructional interventions)	Challenging Behavior	Positive
Hart Barnett, 2018	Play with peers	Social Communication	Positive
Grindle et al., 2012	Applied Behavior Analysis (ABA) class in public schools	Adaptive behavior and learning abilities	Positive

All studies show that children with spectrum disorders have problems with social communication and behavior. Those need to be developed and improved—communication of children with autism experiences barriers. For example, children with autism spectrum disorder often have difficulty forming and maintaining peer relationships, understanding the intricacies of social communication (for example, interpreting nonverbal cues such as facial expressions and gestures), and participating in symbolic/dramatic play (Hart Barnett, 2018). Also, children have the character of challenging behavior such as tantrums, injuring themselves, and being aggressive. Those are why schools must provide an ideal mechanism for interventions for autism when children are in school for hours every day. (Koegel et al., 2012)

Handling children with the autism spectrum requires professional teacher competence. School-based interventions carried out with the support of teacher professional competence can reduce stereotypical behavior of children with autism spectrum disorder (Edwards et al., 2018). In addition to professional competence, handling children with autism spectrum disorder also requires high dedication and loyalty. (Giles et al., 2018) train novice teaching assistants in a classroom to implement interventions developed in specialized care centres, response disorders, and distraction. They found that all three teaching assistants learned to intervene with high fidelity and loyalty reduced repetitive behavior for two out of three students with autism spectrum disorders. School-based interventions provide positive development for children with autism.

Several forms of school-based intervention services for children with autism spectrum disorders have been implemented in Indonesia. Apriyani et al. (2012) describe in their research SDIF Al-Fikri is an inclusive school that provides special intervention services for children with special needs, including children with autism spectrum disorders. The school forms a Learning Support Center (LSC) that offers individual intervention services, monitors children's development, develops individual learning programs, and works with psychologists and special companion teachers in supporting service programs. Also, SLB Negeri Semarang has established an individual education program for children with autism at SLB Negeri Semarang from 2004-2005. Most children with autism who register at SLB Negeri Semarang have transferred from autism schools or foundations because they have difficulty paying for school fees and expensive therapy. At the same time, the cost of education at SLB Negeri Semarang with individual intervention services is relatively cheap. (Bektiningsih, 2009)

From the 12 studies above, school-based intervention for children with autism spectrum disorder can provide positive benefits for developing social communication and behavior of children with autism. It is done through various forms of intervention. School-based interventions for children with autism spectrum disorders can be used as solutions to overcome social problems and barriers to communication and children's behavior without having to spend more.

Several forms of intervention can be carried out in school-based interventions as follows:

### **3.1 Applied Behavioral Analysis (ABA)**

Applied behavioral analysis is a form of early intervention for children with autism to modify behavior. In SLB Negeri Semarang, each child gets two full hours of study time handled by one therapy teacher. The handling of children at this stage varies according to the condition of each child. (Bektiningsih, 2009). The entry criteria for an ABA class or intervention room is that the child must receive an official statement of special educational needs, a diagnosis of autism, and be recommended by the local education department to be placed in an appropriately resourced school setting. (Grindle et al., 2012)

### **3.2 Early Intensive Behavioral Intervention (EIBI)**

Early Intensive Behavioral Intervention (EIBI) helps children with autism learn appropriate behaviors, which replace difficult ones. These interventions also help children learn to imitate, focus their attention more, improve their understanding and use of language, develop play and daily living skills (such as brushing their teeth). EIBI provides positive and effective benefits in treating the behavior of children with autism disorders from an early age. (Eldevik et al., 2012)

### **3.3 Social Stories**

Social Stories are instructional interventions that are carried out by teaching socially appropriate behaviors incompatible with their challenging behavior or using visual support to teach socially appropriate behaviors. Social stories effectively reduce the challenging behavior exhibited by children with autism spectrum disorder (Martinez et al., 2016). Besides that, social stories can help children with autism spectrum disorder improve their communication skills because it contains visual support. Social stories also illustrate the steps of activity daily living and understand a situation.

### **3.4 Social Coaching with Peers**

In supporting and overcoming social and communication barriers for children with autism, SLB Negeri Semarang holds group programs for children with autism to train their socialization. Activities carried out by communicating and carrying out activities together with autism peers. (Bektiningsih, 2009). Peer guidance and intervention can improve children's communication and social skills. (Anderson et al., 2018; Sutton et al., 2019; Whalon et al., 2015). Furthermore, play provides an opportunity to improve social skills in all development domains in an integrated manner. Playing with peers can also provide opportunities to develop a sense of belonging and friendship, which are important goals for children with autism.

### **3.5 The Secret Agent Society (SAS) Program in Autism Classes by Aspect (Autism Spectrum Australia)**

In research by (Einfeld et al., 2018), the Secret Agent Society (SAS) Program improved social skills at home and school, emotional regulation and awareness, and social problem-solving skills in children with autism spectrum disorders. SAS Program is a computer-based social/emotional skills training specifically designed for autism level 1 child aged 8-12. Research shows that the SAS program has led to significant improvements in children's social and emotional skills compared to controls.

### **3.6 Computerized Progressive Attentional Training (CPAT)**

Computerized Progressive Attentional Training (CPAT) is an attention training program typically used for children with ADHD. The CPAT consists of four structured task sets that uniquely activate sustained attention, selective attention, attention orientation, and executive attention. (Spaniol et al., 2018) tested the effectiveness of the CPAT in improving the academic achievement of children with autism spectrum disorders. The CPAT showed good cognitive and educational improvement and was better than the active control group. (Spaniol et al., 2018)

### **3.7 Advancing Social-Communication and Play (ASAP) Intervention**

The original idea for developing the ASAP intervention was inspired by Kasari, Freeman, and Paparella's clinical-based efficacy study in 2006. In this research, preschool children with autism spectrum disorder who received 30 hours of weekly behavior analysis therapy (ABA) and additional interventions improved joint attention or symbolic play skills. It compared to a control group where the children received only 30 hours of ABA intervention (Dykstra Steinbrenner et al., 2015). ASAP is intended to complement other, more comprehensive intervention programs for children with autism. ASAP aims to enhance shared attention and symbolic play skills in preschool children with autism to help them reach their potential full age.

### **3.8 Individualized Education Program (IEP)**

Autistic children need individual guidance. It causes teachers to provide individual programs called Individualized Education Program (IEP). IEP is carried out by implementing modifications to the curriculum and conducting assessments based on student abilities (Apriyani et al., 2012). In her research, (Apriyani et al., 2012) found that teacher used a modified curriculum for children with autism disorders in an elementary school. This modified curriculum adapts to the needs and abilities of the student with autism spectrum disorder.

### **3.9 Occupational Therapy**

Children with autism spectrum disorders usually experience obstacles in fine motor development. Therefore, children's muscles with autism need occupational therapy to train their agility and flexibility to be healthier and develop. Children can do occupational training with many activities, such as holding objects, wearing and taking off shoes, sewing, playing plasticine, etc. The therapeutic tools used are gym balls, button-down shirts, balls and stacking blocks, shoes, and other valuable tools for training fine motor skills, stimulating the senses of touch (tactile), and improving blood circulation. (Bektiningsih, 2009)

### **3.10 Sensory Integration Therapy**

Sensory Integration Therapy aims to train the ability to process and interpret all sensory stimuli from the body and the environment. (Bektiningsih, 2009) The therapeutic tools used include a pool of spiked balls by inserting children into the pool. Children also hoard textured balls so that children are trained to feel stimuli from outside. In addition to the ball pool, the therapy teacher uses a sizeable textured ball by telling the child to hold the ball.

### **3.11 Physical Therapy**

Physical therapy is a therapy that aims to strengthen muscles and train children's body balance. The tools used include a footbridge to train balance, large balls, balance balls. With the help of these tools, therapy teachers in physiotherapy will carry out therapy aimed at training weak muscles of autistic children and exercising balance. (Bektiningsih, 2009)

The implementation of school-based interventions for children with autism spectrum disorder as follows:

#### *Identification and Assessment*

The first thing done in implementing school-based interventions for children with autism spectrum disorders is conducting an assessment. Assessment is an effort to collect information about the strengths and weaknesses of children with autism so that the teacher can identify the need for educational services for children with autism. First of all, the teacher seeks information from parents. This information is given to therapy teachers during parent-school meetings and discussing learning agreements and cooperation between schools and parents. (Apriyani et al., 2012). This initial step is a diagnostic stage where teachers or child therapists with autism plan and formulate the following steps to provide appropriate therapeutic and intervention treatment according to each child's needs with autism. For children who a psychologist has not diagnosed, the therapy teacher can identify steps by observing the child and determining the child's service needs. (Bektiningsih, 2009). Before deciding on a curriculum for children with autism disorders, an assessment is carried out first by a psychologist. After that, a meeting will be held with parents to inform the child's condition and learning program. (Apriyani et al., 2012)

### *Program Planning*

After the special intervention teacher assesses the child, the next step is the preparation of individual programs. Program planning is prepared by students' circumstances and needs, arranging service schedules, and coordinating with the class teacher. The program runs according to the goals that have been formulated by the plan and are carried out individually.

### *Program Implementation*

The management of therapy programs for children with autism includes implementing early intervention programs, companion therapy programs, and transition education. The early intervention program is based on the therapy teacher team's observations when the child first enters school. The intervention is then carried out according to the child's needs with interventions tailored to the child's needs.

### *Program Evaluation*

Evaluation is carried out to determine the progress of activities, assess the achievement of goals that have been formulated in program planning, and measure what needs to be done in the future. The assessment was conducted on children with autism at SDIF Al-Fikri using portfolios. (Apriyani et al., 2012). Also, the teacher assesses children with autism by adjusting the students' abilities, such as simple sentences used when answering questions understood by the teacher. (Bektiningsih, 2009) In general, evaluation of this case is held at the end of the month, followed by a team of therapy teachers, principal, and parents of students. (Bektiningsih, 2009). Evaluation of the semester program is carried out every semester or every six months. The evaluation aims to measure or assess the extent to which the programs that the entire therapy team has designed can be mastered by children, both therapy programs and learning programs in classes of autistic children. (Bektiningsih, 2009)

## **4. Conclusions and Suggestions**

School-based interventions for children with autism can be implemented to solve the problems of children with autism spectrum disorders. School-based interventions can improve social and communication and reduce the challenging behavior of children with autism spectrum disorders. The form of intervention that can be used varies depending on the target to be achieved. For example, to change behavior, the teacher can use ABA therapy (Applied Behavior Analysis). School-based interventions positively impact the development of children with autism spectrum disorders without spending a fortune. Therefore, school-based interventions need to be improved to meet educational services for children with autism spectrum disorders with middle to lower economic abilities. School-based intervention can be recommended for principals to supervise the implementation of autistic children in learning and provide solutions for school-based implementation for the better intervention for autism. Teachers should be able to implement school-based intervention for children with autism spectrum disorder. Government make policy that can help the parents give the best intervention for their child with autism spectrum disorder without having to spend more with school-based intervention. And for further research, the researcher can research the same topic with other types of methodology.

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## CHALLENGES AND COPING STRATEGIES OF SPECIAL EDUCATION TEACHERS WITH ONLINE AND MODULAR LEARNING

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### ABSTRACT

This study aimed to investigate how Special Education (SpEd) teachers are coping with the challenges of online and modular learning brought about by the pandemic. This study utilized an online questionnaire which asked SpEd teachers from public and private schools regarding challenges and problems they encounter; coping strategies that they perform; and recommendations they may give to mitigate the problems being experienced. 43 SpEd teachers responded to the online questionnaire. The researcher also conducted a virtual focused group discussion (FGD) with 14 SpEd teachers, in attendance, to validate the responses. Among the mentioned roles of a SpEd teacher, more than half identified screening (intake of new students to the SpEd program) and choosing appropriate teaching strategies as challenging or they were able to do so after performing adjustments. Almost half of the respondents identified assessment (identifying students' performance for the school year) and creating Individualized Educational Plans (IEPs) as very challenging or they were not able to do them anymore when they shifted to online learning. The most identified challenges encountered were: families lacking resources; slow/ intermittent internet connection; difficulty balancing time between teaching and family life; and students being more distracted at home. The most identified coping strategies were: seeking help from families for support, self-care tasks, time management, and praying. Most of the teachers identified having constant communication with their students' families helped in the adjustment with online learning. On the recommendations, most of the teachers mentioned that there should be more teachers to be hired especially in the public school setting, implement adequate training to help teachers perform their roles accordingly, and provide clear guidelines that will be implemented by the school administration together with the teachers and families. The study then offered suggestions to help teachers cope with online and modular learning.

**Keywords:** Special Education, Teachers, Coping, Online Learning

### 1. Introduction

Coronavirus disease (COVID-19) is an infectious disease that affects people globally. COVID 19 cases, as of the time of writing, continues to increase affecting almost 156 million people worldwide, and more than 1 million people in the Philippines. COVID 19 not just affected people's health, it has also affected people's livelihood and even the educational system.

In the Philippines, schools have closed due to the COVID 19 pandemic. This meant that more than 28 million students were affected.<sup>1</sup> But although the schools were closed, the educational

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<sup>1</sup> UNESCO. (March 2021). Education: From disruption to recovery. Retrieved from: <https://en.unesco.org/covid19/educationresponse>

system shifted from face-to-face learning to online/ modular learning. This meant that the Department of Education (DepEd) of the country implemented distance learning wherein students may receive instruction through online classes, TV/ radio-based instruction, or by modular learning. The latter utilized self-learning modules or SLM based on the most essential learning competencies (MELCS) provided by DepEd.<sup>2</sup>

The shift to distance learning particularly online and modular learning affected many stakeholders.<sup>3</sup> Teachers, parents, and most especially students were affected by this shift. Among the concerns that these stakeholders have voiced are the lack of technological resources, living conditions that may not be conducive to learning, and the difficulty of balancing work of parents and teaching students at home.

These concerns are being faced by Special Education (SpEd) teachers and families of students with special educational needs. It may also be stated that these concerns may even be at a greater level as those in regular education. Most students with special needs require hands-on experiences in their learning and SpEd teachers need to individualize learning for their students. Although parents and families of students with special educational needs are already encouraged to be involved in the education process, it is a difficult task to perform the education and handling at home wherein there is lack of resources and parents lack the appropriate strategies to do so. Some students with special educational needs also manifest increased behavioral and emotional concerns at home with family members. The increase in behavioral concerns may pose difficulties in teaching them. Thus, this continues to add up to the concerns SpEd teachers need to address.

Both teachers and parents of students with special educational needs are facing challenges when the educational system shifted to online and modular learning. A study by Toquero (2021) which involved five SpEd teachers indicated that they have experienced "educational, social, and psychological difficulties and challenges." They have encountered difficulty in the delivery of lessons since shifting the lessons they use in face-to-face classes need to be modified to be contextualized to the current needs of students learning at home. Moreover, communicating with parents was also identified as challenging by the teachers interviewed because not all have smartphones or social media accounts (Toqeuro, 2021). In relation to the latter, intermittent internet connection was also identified as a challenge in this study which makes lessons more limited and difficult for both teachers and parents.<sup>4</sup>

These challenges related to technology such as difficulty accessing or needing to learn how to use such are also indicated in the study by Schuck and Lambert (2020) from their interview of two Special Education teachers who shifted to emergency remote teaching. Teachers interviewed in this study mentioned that some parents of their students experienced "difficulty logging on to online portals and even getting access to the internet." Moreover, they also stated

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<sup>2</sup> FlipScience. (2020). Nanay, handa na ba kayong maging tagapagdaloy?

Retrieved from: <https://www.flipscience.ph/news/features-news/tagapagdaloy-modular-distance-learning/>

<sup>3</sup> Bagood, J. (2020). Teacher-learning modality under the new normal. Retrieved from: <https://pia.gov.ph/features/articles/1055584>

<sup>4</sup> Toquero, C.M.D. (2021). 'Sana All' Inclusive Education amid COVID-19: challenges, strategies, and prospects of Special Education Teachers. *International and Multidisciplinary Journal of Social Sciences*, 10(1), 30-51. Retrieved from: <http://doi.org/10.17583/rimcis.2toquero021.6316>

that students pose various challenging behaviors while learning at home and parents or other caregivers need help in managing them (Schuck and Lambert, 2020). Lastly, teachers in this study also mentioned that both of them experience increased personal stress due to the shift of teaching from face-to-face to teaching through a screen.<sup>5</sup>

Although teachers and parents experience challenges in this change of teaching and learning process, the studies mentioned above also enumerate strategies and mechanisms that teachers use to cope with the new situation. In the study of Schuck and Lambert (2020), teachers emphasized on the importance of self-care such as making sure to disconnect from gadgets at certain times of the day. The importance of taking care of psychological safety was also a theme identified by the study of Toquero (2021). Teachers interviewed in this study emphasized that getting moral support from the parents of their students is helpful for them to gain courage in facing the challenges being encountered. Teachers also mentioned that parental engagement and regular online communication strengthens learning of students with special needs at home (Toquero, 2021).

In light of the above mentioned concerns, there is a need to identify the challenges being encountered by SpEd teachers as well as how they are coping with the shift to online and modular learning. Identifying challenges and coping strategies of SpEd teachers may help in developing programs and strategies that will address their concerns which in turn will also be beneficial to students with special educational needs and their families.

## 1.1 Objectives of the Study

This study aimed to investigate how Special Education (SpEd) teachers are coping with the challenges of online and modular learning brought about by the pandemic.

## 1.2 Research Questions

Specifically, this study answered the following questions:

1. What are challenges, problems, and difficulties SpEd teachers encounter in shifting from face-to-face classes to online and modular teaching?
2. What coping strategies do SpEd teachers do to mitigate the difficulties that they encounter?
3. What recommendations do SpEd teachers can give to mitigate the problems being encountered in online and modular learning?

## 2. Methods, Results and Discussion

### 2.1 Methods

This study used an exploratory research design to investigate the challenges being faced by Special Education teachers as well as their coping strategies to mitigate the problems being

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<sup>5</sup> Schuck, R. and Lambert, R. (2020). "Am I doing enough?" Special educators' experiences with emergency remote teaching in Spring 2020. *Education Sciences*. 10, 320. Retrieved from: <https://www.mdpi.com/2227-7102/10/11/320>

encountered. The study utilized an online questionnaire executed through Google Forms as well as a focus group discussion with selected SpEd teachers as respondents.

The researcher-made online questionnaire included three sections: basic information, challenges and problems; as well as coping strategies and recommendations. The first section asked respondents to provide name and email addresses (optional), school, years in teaching, types of students being handled, and mode of teaching. The second section asked the respondents about how they are able to perform the common roles of SpEd teachers when they shifted to online and modular learning. They were also asked to rate if each task is considered *very challenging* (unable to perform when shifted to online learning), *challenging* (able to perform but needed modifications/ adjustments that made it difficult to perform), *just ok* (able to perform with simple adjustments), *this is fine* (able to perform just like in face-to-face classes). If the task was not performed even during face-to-face classes, the respondent stated *not applicable*. The second section included a question where they will just check common challenges being encountered by SpEd teachers in online and modular learning. In addition, the section included two more open-ended questions for the respondents to talk about the challenges they encounter as well as problems being observed from families of students with special educational needs. On the third and last section, the respondents were asked to choose among common difficulties that SpEd teachers encounter. Lastly, two open-ended questions were asked for them to explain about strategies they have done to help the families and students as well as recommendations that they can give to mitigate the problems they are facing. The focus group discussion included questions based on the online questionnaire distributed.

Convenience sampling was implemented to gather data from SpEd teachers. The researcher sent out the online questionnaire to known teachers. Answering the questionnaire was voluntary. After a week, 43 SpEd teachers from public and private schools responded to the online questionnaire. 14 selected SpEd teachers attended the virtual focus group discussion conducted via Google Meet.

Twenty-three teachers came from public schools while 20 came from private settings (school, clinic, and center). Among the 43 respondents, one teacher have been teaching for more than 20 years (2%); six teachers have been teaching for 16-20 years (14%); seven teachers have been teaching for 11-15 years (16%); ten have been teaching for 6-10 years (23%); and 21 teachers have been teaching for less than 5 years (49%). Most of the respondents handle students with cognitive disabilities: 93% handle students in the Autism Spectrum Disorder; 88% handle students with intellectual disabilities; 67% handle students with Learning Disabilities; and 58% handle students with Behavioral Problems. Only a few respondents handle students with sensory impairments: 7% handle blind students; 4% handle deaf students; and 2% handle students with physical disabilities.

On modes of teaching, 26 out of 43 respondents (61%) perform online classes with individual students while 24 out 43 or 56% perform group online classes. Moreover, 56% of the respondents do modular learning. Only 7 out of 43 teachers (16%) of the respondents do home visits. The data was analyzed using triangulation. This was done by comparing data gathered from literature review, responses from the online questionnaire, and responses from the focus group discussion.

## 2.2 Results

### 2.2.1 Common Tasks of Special Education Teachers

The following are the results gathered from the first section of the online questionnaire on the various tasks of Special Education teachers.

#### 2.2.1.1 Screening: In Take of New Students to the SPED Program

40 out of 43 teachers responded that they are required to perform screening tasks in their respective schools. Three teachers mentioned that they do not perform this even in face-to-face setting. Among the 40 teachers, 10 of them (25%) stated that they find screening very challenging or they are not able to perform this accordingly when they shifted to online and modular learning even when they are tasked to do so. On the other hand, 24 teachers (60%) said that they are able to perform screening tasks but they had difficulty in adjusting or modifying the tasks in order to do so. Three teachers (7.5%) mentioned that they performed minimal modifications in doing screening tasks. Lastly, one teacher (2.5%) said that he/she is able to do this just like in face-to-face classes. From the group discussion, the teachers mentioned that not all of them have standardized screening tools. The tools to identify students' present level of performance is based on policies being conducted in their division or their respective schools. A teacher mentioned that administrators' value of appropriate SpEd placement of students is a factor in the availability of appropriate tools in the school.

#### 2.2.1.2 Assessment: Identify Students' Performance Prior to the School Year

43 out of 43 teachers responded that they are required to perform assessment tasks in their respective schools. Among the 43 teachers, 18 of them (42%) stated that they find assessment very challenging or they are not able to perform this accordingly when they shifted to online and modular learning. Teachers from the focus group discussion mentioned that lack of appropriate tools hindered them from performing assessment accordingly. They also added that they do not have an assessment tool that is adjusted to virtual assessment. Some teachers also mentioned that even if they want to perform home visits in order to perform assessment accordingly, they are not able to do so due to community quarantine restrictions. On the other hand, 15 teachers (35%) said that they are able to perform screening tasks but they had difficulty in adjusting or modifying the tasks in order to do so. Seven teachers (16%) mentioned that they performed minimal modifications in doing screening tasks. Lastly, three teachers (7%) said that they are able to do assessment just like in face-to-face classes.

#### 2.2.1.3 Program Planning: Creating an Individualized Educational Plan (IEP)

One of out 43 respondents mentioned that he/she does not make an IEP even in face-to-face setting. That means 42 teachers are tasked to create programs for their students. However, among the 42 teachers, 16 (38%) found program planning very challenging. That means, they are not able to do so during online and modular learning. Some teachers mentioned that they are not able to update or create an IEP anymore because they have a lot of other tasks in school. Most of the teachers mentioned that besides doing roles expected of a SpEd teacher, they are also expected to perform tasks of regular education teachers in their respective schools. This means that their teaching load involves making learning modules, instructional videos for students, and even completing forms required of all teachers especially those in public schools. Some teachers also mentioned that making an IEP is a very tedious task and since families are

not even aware of the utilization of individualized plans thus teachers do not bother themselves in making such plans. Moreover, 15 teachers (35%) mentioned that they are still able to perform program planning but deemed this task difficult to modify. On the other hand, seven teachers (16%) stated that program planning is easy for them and were able to adjust to online and modular learning mode. Three teachers (7%) did not have to adjust their program planning tasks to online learning as they are able to perform this just like in face-to-face setting.

#### **2.2.1.4 Choosing Appropriate Teaching Strategies**

All 43 respondents mentioned that part of their role as a SpEd teacher is choosing appropriate teaching strategies for their students. Out of the 43, only 9 teachers (21%) found this very challenging or they are not able to do this accordingly when they shifted to online and modular learning. 23 teachers (54%) identified this task as doable but challenging. The teachers mentioned that the challenges they encounter in choosing appropriate strategies stem from available resources for them and their students as well as knowledge in strategies that are appropriate for online learning. A factor that they mentioned is that they need to be trained more in order to adjust their teaching to the new learning environment which is online mode. Out of the 43 respondents, five (12%) mentioned that they did minimal modifications in choosing appropriate strategies for their students. Moreover, six teachers (14%) said that they perform such task just like during face-to-face setting. Lastly, most teachers mentioned that guidelines related to teaching strategies customized for different students with special educational needs may be helpful in providing such service for students and their families.

#### **2.2.1.5 Modifying Lessons for Students in Inclusive Setting**

Forty-one out of 43 respondents mentioned that modifying lessons for students in an inclusive setting is part of their role as a SpEd teacher. Two of them are not required to do so. Among the 41 respondents, 11 teachers (27%) stated that modifying lessons is not something that they are able to do during online and modular learning. A reason pointed out by the teachers is that they are overwhelmed with the amount of tasks being done. Another reason is that they seek the help of the regular education teacher assigned to the student but sometimes the appropriate modifications are still not conducted. 16 teachers (39%) mentioned that they are able to modify lessons despite the difficulties being encountered. They also mentioned that modifying lessons is also based on the load of lessons taught to students. They have stated that even if the learning competencies were decreased, the students still have to complete modules expected of those in inclusive settings. Some teachers mentioned that since parents are the ones teaching the students, sometimes, the modules are not completed accordingly. Also, teachers mentioned that the availability of a modified curriculum for students with special educational needs may be helpful for them to perform modifications. On the other hand, nine teachers (22%) mentioned that they are able to modify lessons with minimal adjustment on their part while five teachers (12%) are able to do this task easily and similar to face-to-face setting.

#### **2.2.1.6 Making Progress Reports**

All 43 respondents mentioned that they are required to make progress reports. Among the 43 respondents, only seven (16%) identified this as being very challenging while 17 (40%) stated that this task is challenging. Thus, they are able to do this with moderate difficulty. 30% or 13 teachers identified making progress reports as doable with very minimal modifications while 14% or six teachers identified this task as similar to what they have been doing in face-to-face.

### **2.2.1.7 Communicating with Parents**

Two respondents mentioned that they are not required to communicate with parents regularly as part of their role as SpEd teachers in their respective schools. Among the 41 teachers, six of them (15%) mentioned that this role is very challenging, thus, they are unable to do this during online and modular learning. A reason that was mentioned was partly because of the fact that parents were more unavailable because of their current schedule. 15 teachers (37%) stated that they are able to communicate with parents despite the challenges of schedule and overwhelming tasks. On the other hand, nine teachers (22%) identified this task as doable with minimal modifications and lastly, 11 teachers (27%) are able to communicate with parents regularly just like how they do this during pre-pandemic. Teachers from the group discussion mentioned that they are able to make use of social media platforms such as Facebook and Instagram when communicating with parents of their students.

### **2.2.2 Challenges and Problems Encountered**

“Families I teach lack resources” was identified by 24 out 43 teachers (56%0 as the challenge being most encountered. Second to this is “I have slow or intermittent internet connection” which was identified by 21 teachers (49%). Next to this are two statements, both identified by 18 teachers (42%): “I have difficulty using technology” and “My students lack motivation in learning or are not interested anymore.” The fifth statement identified as a challenge was “I lack resources to use in teaching.” This was identified by 17 teachers (40%). Other statements on challenges encountered were identified by 35% down to 12% of the respondents: “Families are not involved in the students' education” (35%); “I have difficulty making contact with my students' parents/families” (21%); “I lack gadgets to use” (19%); “I still have difficulty using technology” (14%); and “I share gadgets with my family” (12%).

The open-ended questions on challenges and difficulties being encountered by teachers when they shifted to online and modular learning validates the chosen statements. The teachers in the group discussion also mentioned that resources, technology (internet connection and gadgets), and students' motivation are identified challenges during online and modular learning. Moreover, the responses of the teachers also identified lack of balance between work and personal life especially for teachers who are also parents working at home with their children studying at home with them is an identified challenge for many. Some teachers mentioned that they experience anxiety due to the overwhelming tasks that they need to perform. Moreover, most of the teachers also mentioned that students have a shorter attention span and get easily distracted during online classes while at home. Students also lack social interaction due to not being at school. Lastly, other challenges mentioned by the teachers in the open-ended questions as well as in the group discussion were lack of support from administrators as well as teachers and parents needing training (both in technology usage and teaching strategies) to be more efficient in this new learning mode.

### **2.2.3 Coping Strategies and Recommendations Given by SpEd Teachers**

Among the coping strategies and recommendations, “asking parents/ families for their support” was identified by 35 teachers (81%) as a method to mitigate the difficulties being encountered. In this light, the teachers shared that regular communication with families not just help the parents but also help themselves as well. Since this gives both parties a shared responsibility towards the education of the student with special educational needs. regular communication was also identified as giving a sense of encouragement for both teachers and parents. Regular communication was emphasized by many as being an avenue to teach strategies to parents and answer their queries about their child.

Second to asking parents/ families for support is “self-care tasks like exercise and taking breaks” which was identified by 34 teachers (79%). The third strategy identified by the teachers as a coping strategy for them is “time management” which was mentioned by 32 teachers (74%). Other coping strategies were also identified as being performed by 50-60% teachers: “finding and participating in webinars to gain information” (65%); “talking to my co-teachers for emotional support” (61%); “talking to my co-teachers/ administrators for helpful information” (61%); talking to my family for emotional support” (53%).

The open-ended questions and even the group discussion identified “praying” or “engaging in any spiritual wellness activity” as a coping strategy by most respondents. Some of the respondents also indicated that having a certain form of relaxation/ recreation or break is needed to maintain motivation for work. Some of them mentioned that they reward themselves or give themselves a treat at the end of the week of any task that has required a lot of effort from them. Lastly, some mentioned that having a positive mindset helps in coping with the challenges being encountered.

On the recommendations, most teachers mentioned that hiring more SpEd teachers will help in addressing the needs and concerns of students with special educational needs especially in the public school setting. Most teachers also mentioned that the overwhelming amount of other tasks such as forms are also not helping teachers focus on their roles as SpEd teachers. Moreover, teachers identified that there should be a strong support system from school administrators. They should be the ones who are knowledgeable of SpEd policies in order to provide better opportunities for students with special educational needs and teachers as well as to implement Inclusive Education better. With such, this would also pave the way to giving equal opportunities for SpEd teachers like attending training and webinars related to professional development.

## **2.3. Discussion**

This study provided information that may be used by future researchers in identifying the challenges being encountered and coping strategies being performed by Special Education teachers. Some of the challenges identified in this study were related to lack of resources and those related to technology such as slow internet connection. These findings are similar with the findings of Toquero (2021) wherein she stated that teachers experience intermittent virtual socializations and parents need help regarding online communication and homeschooling. Moreover, lack of resources and access to technology which are identified as challenges in this study are similar to the study of Schuck and Lambert (2020). On the other hand, the coping strategies identified in this study were also similar with Toquero’s (2021) findings regarding

parental engagement and psychological safety<sup>6</sup> as well as Schuck and Lambert which identified that special education teachers now rely on families and parents for support to educate the child with special educational needs (2020).<sup>7</sup>

The data gathered in this study may also be used by administrators and other personnel concerned with developing webinars and training manuals that will benefit SpEd teachers as well as parents of students with special educational needs. Webinars may include wellness programs for teachers and families which may include, but not limited to the following topics: proper time management, recreational activities that can be performed that targets overall well-being, using technology efficiently through interactive websites and available learning resources, and establishing support groups with specific objectives.

The information gathered in this study may also be used as a basis for reviewing current SpEd guidelines and practices both in public and private school settings. This may include developing and improving guidelines related to the different roles of SpEd teachers mentioned in this study namely: screening, assessment, program planning, choosing appropriate strategies, modifying lessons, making progress reports, and communicating with parents. The information provided in this study may also be used in reviewing current practices related to Inclusive Education in various educational institutions in order to help students with special educational needs, SpEd teachers, families, and even regular education teachers involved in the Inclusion program.

Moreover, the data gathered in this study may also be used as a baseline for other research. This study was exploratory in nature thus only used triangulation as a data analysis method since the purpose of the study was to explain a phenomenon being experienced by SpEd teachers as they shifted from face-to-face to online and modular learning. Other researchers may utilize a more in-depth data collection and data analysis method in order to provide more information that can be used in developing programs that will further benefit SpEd teachers in their facilitation of various roles and tasks in teaching students with special educational needs and being an efficient member of implementing Inclusive Education.

### 3. Conclusion

Due to the shift in online and modular learning, some of the roles expected from the Special Education (SpEd) teachers are not performed anymore due to the limitations being encountered. There are roles of SpEd teachers that are still being performed even during online and modular learning but require modifications to meet the demands of the current situation. It is essential to determine the challenges being encountered by SpEd teachers in order to provide activities that will help them and in turn, benefit the students and the families that they cater to. Moreover, finding out the coping strategies of SpEd teachers is also necessary in order to provide for training and clear guidelines that will continue to help them professionally and that addresses their needs and concerns. These guidelines and policies should also be communicated to school administration in order to ensure proper implementation.

<sup>6</sup> Toquero, C.M.D. (2021). 'Sana All' Inclusive Education amid COVID-19: challenges, strategies, and prospects of Special Education Teachers. *International and Multidisciplinary Journal of Social Sciences*, 10(1), 30-51. doi: 10.17583/rimcjs.2021.6316. Retrieved from: <http://doi.org/10.17583/rimcjs.2021.6316>

<sup>7</sup> Schuck, R. and Lambert, R. (2020). "Am I doing enough?" Special educators' experiences with emergency remote teaching in Spring 2020. *Education Sciences*. 10, 320. Retrieved from: [www.mdpi.com/journal/education](http://www.mdpi.com/journal/education)

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## HOW TO IMPROVE AUTISTIC STUDENTS' HANDWRITING

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### ABSTRACT

Autism is a lifelong neurological disorder that affects the weaknesses of memory and causes visual-motor coordination skills impairment. This problem constrains autistic students from mastering handwriting skills. Their handwriting is illegible. This single-subject design research aims to identify the effect of "Efficient Writing" on autistic students' handwriting in the following aspects: visual motor skills and letter formation proficiency to improve the autistic students' handwriting. In this study, the ABA design was selected. The study was carried out in an intervention centre at Seberang Perai Tengah, Penang. In this study, just one sample was used. The independent variable of this research is "Efficient Writing" which underpins the combination of the Brain Gym and The Size Matter Handwriting Programme concept that underlies the Bandura social cognitive learning theory. Over six weeks, "Efficient Writing" was implemented for 80 minutes daily by an experienced special education teacher. A pre-test was given in the first phase (baseline phase) before the intervention was implemented. During the intervention phase, the informal assessment was carried out to identify the respondent's progress. A post-test was given after the treatment ended. The data collected during the intervention phase was analyzed using visual inspection. The documentation analysis was done on the respondent's pre and post-test paper to support the data collected during the intervention phase. The outcome of the research shows that there is a significant difference in the respondent's handwriting. The independent variable in this research, "Efficient Writing" can improve autistic students' handwriting.

**Keywords:** handwriting, autism, intervention, visual motor, legible, brain gym

### 1. Introduction

Handwriting skills are the basis of literacy. Mastering handwriting allows the pertaining knowledge to become cognitive resources utilized at the mentalist writing level (Graham et al., 2000). It was commonly used to express feelings, communicate and record one's experiences and common sense. Thus, all students with disabilities must be educated (NCLB, 2001; IDEA, 2004) to master basic writing skills.

Generally, two factors are used to assess and/or define poor handwriting: (1) legibility and (2) performance time (Koziatek & Powell, 2002; Rosenblum et al., 2003). Dysgraphia implies seriously poor legibility or low writing speed, or both, interfering with the child's educational achievements and with daily activities requiring these abilities (APA, 2013). The condition represents a neurocognitive disorder associated with executive functioning and fine-motor and visual-motor deficits (Mayes et al., 2017). According to Calhoun (2007), 50%

of 724 autistic students between 6 to 16 years old have dysgraphia. Autism is a lifelong neurological disorder that affects the weaknesses of memory and causes visual-motor coordination skills impairment. This problem constrains autistic students from mastering handwriting skills.

Although there are studies that suggest that short term interventions focusing on fine motor skills and visual motor skills are effective in improving handwriting skills among all categories of primary school students (Ohl et al., 2013), research on handwriting interventions for autistic students is currently limited (Asaro-Saddler, 2015; Finnegan & Accardo, 2018; Kuskiki, Chau & Anagnostou, 2011; Pennington & Delano, 2012). "Efficient Writing" is a handwriting intervention specially designed to improve autistic students' handwriting. It underpins the combination of Brain Gym and The Size Matter Handwriting Programme concepts. It was carried out based on Bandura's (1977) social cognitive learning theory.

The Size Matter Handwriting Program Intervention is a comprehensive method that combined the principles of three theories: Motor Learning Theory, Cognitive Theory, and Motivation Theory (Moskowitz, 2009). The principle of Motor Learning Theory is implemented by incorporating practice and repetition into program materials and daily life. The principle of Motivation Theory is incorporated through colourful, fun, and engaging activities. Meanwhile, the cognitive principles are incorporated into the direct instruction of explicit letter formation techniques with consistent, and meaningful terminology. Children learn the importance of letter size at different stages. The Size Matter Handwriting Program suggests teachers motivate their students by incorporating meaningful learning activities and rigorous objectives in teaching based on student needs and modifying their teaching methods according to students' achievement levels. This will assist them in mastering writing skills in terms of forming legible alphabet letters. The Size Matter Handwriting Program Intervention uses explicit teaching sessions, correction, self-assessment, and verbal feedback with visual motivation (Pfeiffer et al., 2015).

Besides, The Size Matter Handwriting Program Intervention also supports the development of handwriting skills in a linear sequence. It begins with precise alphabet formation, placement of alphabet writing on lines, and able to justify the spaces between alphabets. This is in line with Bandura's cognitive social learning theory where the theory prioritizes the use of visual cues and frequent verbal descriptions (Moskowitz, 2009). Several past studies have shown that SMHP is a curriculum for improving effective handwriting skills and can be absorbed in classroom teaching (Pfeiffer et al., 2015; Zylstra & Pfeiffer, 2016). Other than explicit teaching and handwriting practice, "Efficient Writing" also focuses on Brain Gym to enable the integration between both sides of the brain hemisphere via simple visual-motor activities, which consist of gross motor activity, fine motor activity, bilateral coordination activity, vision training activity and hand-eye coordination activity with visual cues and verbal feedback. According to Ocampo et al. (2017), Brain Gym is an effective intervention in improving writing skills. The study involved four first-year students who had difficulties in handwriting. The students were instructed to undergo Brain Gym exercises including SBCH, drinking water, Brain Buttons, Cross Crawls, Hook-ups, and six movements such as Lazy 8, The Energy Yawn, The Owl, The Thinking Cap, The Positive Points, and The Gravity Glider. After the exercises, the students were able to write correctly and neatly following the blue-red-blue lines and correct spacing between letters and words.

Given that the combination of Brain Gym and The Size Matter Handwriting Program has never been studied among autistic students in Malaysia, this study can be used to strengthen both interventions and contribute to new knowledge in the field of Special Education research.

## 1.1 Problem statement

Dysgraphia is closely related to executive functions such as working memory (Rosenblum, 2016). Both motor and cognitive development are interrelated (Diamond, 2000). Automatic deficits at the cognitive level, caused by the deterioration of procedural learning networks involving the cerebellum at the neural circuit level that occur in dysgraphia, cause a decline in the motor-cerebellar circuit (Nicolson & Fawcett, 2011). Damage to the cerebellum will affect an individual's motor function (Konczak & Tim-mann, 2007). Thus, a person with dysgraphia has difficulty remembering and mastering the sequence of automatic motor movements required to write letters or numbers (Bright Solutions for Dyslexia, 2014). They need explicit instructions and feedback on letter formation and guidance to achieve automated handwriting performance before using letters to write words, phrases, and sentences (Bright Solutions for Dyslexia, 2014).

According to Datuk Dr Yasmin Binti Hussain, Deputy Director, Special Education Division, during a special interview with the media at the Ministry of Education on 25<sup>th</sup> December 2018, the Ministry of Education will strengthen the Zero Reject Policy to ensure Special Needs Students receive education in line with their disabilities. However, 60% of autistic children have dysgraphia (Mayes & Calhoun, 2006). The study found that of the 40% of occupational therapist cases consisting of autistic students, as many as 86% of those who sought ongoing treatment sought help to overcome writing skills or fine motor skills (Cartmill, Rodger, and Ziviani, 2009). This is because 87% of autistic students suffer from motor impairment (Bhat, 2020). This caused them to have difficulty in the formation of the alphabet.

Studies show that visual motor skill is an important factor in determining the handwriting quality of autistic students (Hellinckx et al., 2013). Although there are studies that suggest that short term interventions focusing on fine motor skills and visual motor skills are effective in improving handwriting skills among all categories of primary school students (Ohl et al., 2013), the handwriting interventions studied among autistic students is still lacking (Asaro-Saddler, 2015; Finnegan & Accardo, 2018; Kuskhki, Chau & Anagnostou, 2011; Pennington & Delano, 2012). Furthermore, studies show that the visual motor skills achievement of autistic students is lower when compared to their peers (Hellinckx et al., 2013). The condition worsens if they do not receive proper treatment (Cheatum & Hammond, 2000; Jackman & Stagnitti, 2007; Mu et al., 2002). Handwriting skills of autistic children or students are normally not emphasized due to lack of specialized teachers (Graham et al., 2008). The phenomenon lingered when incompetency in handwriting skills is viewed as trivial or ignored by researchers and schools (Mayes & Calhoun, 2007). Thus, they need guidance from environmental agents to help them improve their visual motor skills.

Brain Gym is a simple movement that can be used to train the cognitive, motor skills, and agility of the small muscles on the fingers and connect the brain with the shoulders, arms, and eyes (Ningrum et al., 2018). It was effective in improving students' handwriting skills on blue-red-blue lined paper (Ocampo et al., 2017). The SMHP intervention effectively improves handwriting skills on three-lined paper among students with learning difficulties (Pfeiffer et al., 2015). According to Bandura's social cognitive learning theory, the principle of learning is to increase attention through observation, reinforcement, and motivation as three key teaching guidelines. In that way, the movement task information presented can remain in the working memory. Since the number of previous studies that can support the effectiveness of both types of interventions is still lacking, a study needs to be conducted to improve autistic students' handwriting.

This study aims at answering the following research questions:

- i. To what extent is the "Efficient Writing" intervention affect the visual motor skills of autistic students with dysgraphia?
- ii. How effective is the "Efficient Writing" intervention on the letter formation proficiency of autistic students with dysgraphia?

## 2. Literature Review

According to the American Psychiatric Association (2013), dysgraphia is not a disease but is a neurological developmental disorder such as ADHD (hyperactive), developmental coordination disorders, dyslexia, and autism spectrum disorders. It stems from neurological damage (Rapcsak et al., 2009; Rapp, Purcell, Hillis, ECapasso & Miceli, 2016). Dysgraphia also occurs among students with cognitive-developmental problems such as autism, cerebral palsy, and ADHD (Reisman & Severino, 2020). Educators often overlook the symptoms of dysgraphia, and students with the condition are viewed as unmotivated or uncaring (Berninger & Wolf, 2009). Other than poor handwriting, students with dysgraphia might display some of the symptoms as listed below (Berninger & Wolf, 2009). Not all of the symptoms listed will be present in all students. It's because it's still unclear how many students are observed on a regular basis.

- Poor legibility
- Excessive erasures
- Inefficient speed of copying
- Misuse of lines and margins
- Frequent need of verbal cues
- Poor spatial planning on paper
- Relies heavily on vision to write
- Inattentiveness over details when writing
- Mixed upper-case and lower-case letters
- Cramping of fingers while writing short entries
- Difficulty in visualizing letter formation beforehand
- Inconsistent form and size of letters or unfinished letters
- Difficulty in understanding homophones and what spelling to use
- May feel pain while writing (cramps in fingers, wrist and palms)
- Difficulty in writing and thinking at the same time (creative writing, taking notes)
- Having a hard time translating ideas to writing, sometimes using the wrong words altogether
- Handwriting abilities that may interfere with spelling and written composition
- Odd wrist, arm, body or paper orientations such as bending an arm into an L shape

Handwriting execution involves not only motor sensors influencing muscle energy to perform fine movements to grip a pencil, release pressure on a pencil to write, and perform the autographic coordination needed to form a legible alphabet, but also a memory to form the alphabet in the correct sequence in composing and performing movements when writing. (Amundson, 2005). A key component of cognitive function is working memory. Working memory plays an important role in the execution function because it is a short-term memory system that controls current information processing (Gathercole & Baddeley, 2014). It is an important factor in the development of writing (Hayes & Berninger, 2014) and the academic achievement of autistic students (Bauminger-Zviely, 2013, 2014). Many studies have found that dysgraphia commonly occurs among autism category students in primary and secondary schools (Fuentes, Mostofsky & Bastian, 2010; Ghaziuddin & Mountain-Kimchi,

2004; Hellinckx, Roeyers & Van Waelvelde, 2013; Kushki, Chau & Anagnostou, 2011; Mayes & Couhoun, 2008; Mayes et al., 2012; Myles et al., 2003). A large number of meta-analytic studies have found that people with autism have impaired executive function (Demetriou, Lampit, & Quintana, 2018; Habib, Harris, Pollick, & Melville, 2019; Lai, Lau, Lui, Lok, & Tam, 2017; Wang, Zhang, Liu, & Cui, 2017). They experience working memory deficits in the phonological and visual (visual-spatial) memory domains (Habib et al., 2019).

Weaknesses in motor skills among autists occur from the early stages of development until adulthood (Fournier, Hass, Nait, Lodha & Cauraugh, 2010; Ming, Brimacombe & Wagner, 2007; Minshew, Sung, Jone & Fuman, 2004). Gross and fine motor skills, as well as dexterity (Greffou et al., 2012), balance and body posture position (Memari et al., 2013), daily living skills (Jasmin et al., 2009), and the use of dominant hands (handedness) and laterality, are all examples of motor skill deficiencies (spatial awareness that aids memory) (Preslar, Kushner, Marino & Pearce, 2014). Thus, they are unable to perform rapid movements involving motor integration and sensory fusion, including tasks involving both sides of the brain hemisphere (lateralization task) (Halayem et al., 2010, 2017) and have motor coordination and motor movements that have complex sequences (Mayoral et al., 2010). In addition, they may also have problems with visual movement coordination that makes it difficult to mimic body movements because there is a deficit of visual focus retention in one place (visual fixation) (Connolly, Rinehart, Johnson, Papadopoulos & Fielding, 2016; Johnson et al., 2012; Schmitt, Cook, Sweeney & Mosconi, 2014). Thus, they are unable to gain a complete visual picture while acquiring handwriting skills due to such deficiencies.

Autistic students often have weaknesses and difficulties in alphabet formation from an individual point of view as distinct factors that contribute to handwriting clarity (Cartmill et al., 2009; Fuentes et al., 2009, 2010; Myles et al., 2003). Among the shortcomings in alphabet formation that is often detected are the use of sharp straight-line angles at curved corners in some parts of the alphabet and the use of font sizes larger than the proper size (Fuentes et al., 2009). The situation is exacerbated when there is a shortage of specialized teachers in the field of teaching handwriting skills (Chiu, Heidebrecht, Wehrmann, Sinclair & Reid, 2008; Mu, Royeen, Paschal & Zardetto-Smith, 2002). As a result, they are hesitant to teach such skills (Graham et al., 2008). Given that autistic students suffer from motor skills problems and executive function impairments that make it difficult to learn handwriting skills among autistic students (Broun, 2009), the "Efficient Writing" intervention designed in this study aims to improve the autistic students' handwriting through visual-motor skills training and writing training to facilitate the learning process of handwriting skills based on the needs of autistic students.

## 2.1 "Efficient Writing" Intervention

"Efficient Writing" intervention is an intervention specifically designed to improve the handwriting skills of autistic students with dysgraphia. It underpins the combination of Brain Gym and The Size Matter Handwriting Programme concepts that underlies Bandura's social cognitive learning theory.

Brain Gym is based on the Theory of Educational Kinesiology. It was defined as learning through movement. Body movement is closely related to brain function (Kirpichnikova, 2006, p.2). The founder of Brain Gym, founder Paul Dennison (1969), believed that good physical development could optimize the learning experience. He also revealed that when the brain can function laterally (e.g. from left to right), bilateral integration and the ability to perform bilateral skill activities can activate both sides of the hemisphere, which allows the brain to function. The movement of crossing the midline can improve neural communication, which helps the blood flow to both sides of the brain hemisphere (Blaydes,

2001) and, in turn, balance the activation rate on both sides of the brain hemisphere. Consequently, cognitive functions such as concentration and working memory can be improved. Therefore, Brain Gym is widely used to integrate both sides of the brain's hemisphere and reduce stress in enabling individuals to concentrate on optimizing study experiences (Dennison & Dennison, 2007; Spaulding, Mostert & Beam, 2010). It is also capable of improving the coordination skills of an individual's movement through activities involving bilateral coordination skills and crossing the midline (Dennison & Dennison, 2007) that is required during writing. As such, it is suitable for an autistic student with dysgraphia, who experiences uneven activation rates on both sides of the brain hemisphere during information processing.

Based on the Brain Gym concept, different movements can stimulate brain function in several parts of the brain. The Brain Gym movements selected for use in this intervention include Cross Crawl, Lazy 8, and Alphabet 8s. While among the selected SMHP concepts include line names, alphabetical lines, contact points, stars and dice games, second and third alphabet sizes and noodles and balls. The Size Matter Handwriting Program Intervention uses explicit teaching sessions, correction, self-assessment, and verbal feedback with visual motivation (Pfeiffer et al., 2015). It suggests teachers motivate their students by incorporating meaningful learning activities and rigorous objectives in teaching based on student needs and modifying their teaching methods according to students' achievement levels. This will assist them in mastering writing skills in terms of forming legible alphabet letters. According to Ghani and Ahmad (2011), the explicit teaching process consists of setting (content introduction), description (teaching and learning content), modelling (demonstration), and guidance. Through this method, teachers can make lesson plans more carefully by using various activities and effective teaching aids. Meanwhile, teachers can also assess the level of student achievement at each teaching session. In addition to focusing on writing exercises, "Efficient Writing" also focuses on training to improve visual motor skills that can stimulate the parts of the brain connected to the body's motor nerves so that the cognitive function of autistic students can be developed. In addition, teaching aids used for the purpose of training and teaching writing are also built based on the needs of autistic students. For example, 4 lines of red-blue-blue and red paper with Alphabet 8s printed on it is constructed based on the needs of the autistic students.

"Efficient Writing" underlies Bandura's cognitive social learning theory. The theory uses the principles of learning consisting of learning through observation, reinforcement, and motivation as teaching guidelines to increase the attention needed so that the movement task information presented can remain in the working memory. According to Bandura (1977), the learning of motor movement skills through imitation depends on 4 processes in sequence, namely the process of concentration, retention, repetition, and motivation. This theory acts as a key teaching step in the "Efficient Writing" intervention. Autistic students are taught to practice visual motor skills and handwriting skills to improve their handwriting.

Each intervention session begins with a Brain Gym exercise (simple visual-motor coordination movement or activity) that acts as a stimulus to draw the students' attention to observe the demonstration, followed by a repetition exercise of the movements demonstrated by the model. Guidance supported by visual cues teaching aids such as Alphabet 8s is provided to increase their attention to strengthen their memory on how to form lower-case letters in the correct sequence. Next, reinforcement activities such as reading words based on pictures aim to strengthen students' memory of the lower-case letter shapes learnt. Finally, feedback and motivation such as praise and stars given before, during, and after writing exercises serve to correct mistakes made and maintain encouraged movement so that the information to be conveyed can remain in the students' memory (Bandura, 1977). Bandura's theory is a good fit for "Efficient Writing" because the learning principles used can help students improve concentration and strengthen the memory of information conveyed

through guidance, motivation, and reinforcement provided by environmental agents, allowing them to write lower-case letters legibly.

### **3. METHOD**

#### **3.1 Research Design**

This is a quantitative study using a single-subject design. The researcher chose the most basic pattern for studying one subject, which is a withdrawal design, known as ABA design. The independent variable of this study is the "Efficient Writing" intervention designed by the researcher. The "Efficient Writing" intervention serves as the primary teaching method to improve autistic students' handwriting. The dependent variable of this study is lower-case writing achievement which was assessed based on changes in the respondents' motor visual skills achievement and changes in the respondents' letter formation proficiency. There are three phases in this study. The first phase is the baseline phase, the second phase is the "Efficient Writing" treatment phase, and the third phase is the baseline phase. A pre-test was given in the first phase to identify existing skills before treatment was given. In the second phase, a total of 30 sessions of "Efficient Writing" treatment were provided for 6 weeks. During the treatment period, quantitative data was collected from informal assessments on the respondents' visual-motor skills and handwriting skills. In the third phase, no treatment was given. In this phase, post-test was given until the respondents' results are stable. It aims to help the researcher identify the respondents' handwriting progress after using the "Efficient Writing" teaching method.

#### **3.2 Sample**

The purposive sampling method was used to ensure the most suitable sample for this study was selected. The sample was taken from an intervention centre in Seberang Perai Tengah, Penang, based on the students' individualized educational plan and development progress report. Few criteria were used to filter out the most suitable sample from the population. First, the sample selected must understand the teacher's instructions and answer when his or her name is called. Next, the sample should be autistic students who have poor handwriting even though they have exceeded the age of 12 years old. Finally, the sample should be able to use both sides of his or her finger and wrist. Only one sample was chosen based on these criteria, and the chosen sample was given the nickname Chong in this study.

#### **3.3 Instrumentation**

In this study, two performance tests were employed. The first one is the visual-motor skill assessment instrument. The second one is the letter formation skill assessment instrument. A formal test paper was modified as a pre-test and post-test to determine the students' handwriting ability before and after treatment. The formal test paper consists of two parts. The questions in the first part aim to assess one of the lower-case letter formations from each letter family, while the second part aims to assess the lower-case letter formation on four-lined paper. Questions in the first part were adapted from the first constructs of the LINUS test, while the questions in the second section were extracted from the Year 2 3M Malay basic activity book (learning disabilities) based on the standard curriculum of primary school.

The visual-motor skill evaluation test assessed five different aspects. These aspects include visual skills, bilateral coordination skills, gross motor skills, fine motor skills, and visual-motor skills. Each of these aspects consists of at least one item that needs to be

evaluated. Scores are given based on scales 0, 1, and 2 according to the criteria stated in the scale on the instrument. Total marks are calculated by dividing the total marks obtained by the maximum marks then multiplied by 100. 5 items assessed for the visual skills aspect consisted of activities tracking the movement of a laser light moving from left to right, from left to right, then to bottom left and to the right, clockwise rotation, counter clockwise rotation direction and Lazy 8 drawing direction. One item assessed for aspects of bilateral coordination skills was Cross Crawl by standing for 20 times. The 3 items assessed for gross motor skills consisted of the ball shooting 10 times, bouncing the ball while walking forward in a distance of 2 meters, and bouncing the ball while walking to the right in a distance of 2 meters.

The 2 items assessed for the fine motor skill aspect consisted of grasping 5 marbles in hand and inserting them one by one into a mineral bottle and grasping 10 buttons, and inserting them one by one into the 4 In A Row game rack. There were 3 items assessed for aspects of visual motor skills. Part A assessed the student's ability to copy various types of lines. Section B assessed the student's 'ability to copy geometric shapes, and Section C assessed the student's ability to copy combinations of geometric shapes. Scores were given based on the criteria stated in the scale on the visual motor skills assessment instrument.

There are two types of scoring rubrics in this study: scoring rubrics for visual-motor skills assessment and scoring rubrics for letter formation skills assessment. The scoring rubric for motor visual skills assessment was obtained using a scale set. The scoring for visual-motor skills is based on the criteria of each skill assessed on the motor visual skills assessment instrument. The skills assessed on the motor visual skills assessment instrument consist of gross motor skill, fine motor skill, bilateral coordination, vision training, and hand-eye coordination. The purpose was to identify the effect of "Efficient Writing" on autistic students' visual-motor skills. It was adapted from past year's research conducted by Afiqah (2019). According to Afiqah (2019), visual-motor skill is an important prewriting skill that should be mastered in the early stage of handwriting skill.

The scoring rubric for the assessment of handwriting skills in terms of legibility is the same for formal assessment (pre and post-test) and informal assessment (during the treatment period). According to Keifer (2015), the direction or sequence of writing, the point of overlap (closure of circle shape and accuracy of straight lines), and the type of line (alphabetical component) should be prioritized. Due to the validity of the assessment rubric that has never been studied in Malaysia, the researcher adapted the scoring rubric for the handwriting skills instrument designed by Keifer (2015). Besides, Cori (2015) also emphasized that all letters must touch the lines of the paper at the correct point. It is similar to the concept of The Size Matter Handwriting Programme. The rubric aims to identify the autistic students' handwriting progress after using the "Efficient Writing" teaching method.

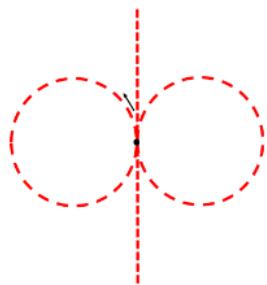
In the first part of the lower-case letter writing assessment paper, Chong was instructed to write down the lower-case letters based on the card shown while the teacher mentioned the name of the letter. One of the alphabets for each letter family will be evaluated. Chong was asked to write a selected letter in the space of each of the five square boxes provided. Then, the same letter was then instructed to be written five times in the four-lined space. The teacher will choose the most appropriate letter to give marks. All the lower-case letters learnt were assessed through an informal assessment. The full mark for each letter is four. The total assessment mark obtained by the students will then be divided by the maximum total mark and then multiplied by 100%. The scores are recorded in percentage in a table in the visual motor skill assessment instrument and the letter formation skill assessment instrument and interpreted in line graphs.

The pre-test was given in phase one, and the post-test was given in phase three. Informal assessments were carried out throughout the treatment period in phase two during the handwriting practice. A laminated four lined paper with alphabet 8s printed on it, and a four-lined exercise book used to practice handwriting were treated as informal assessment instrument.

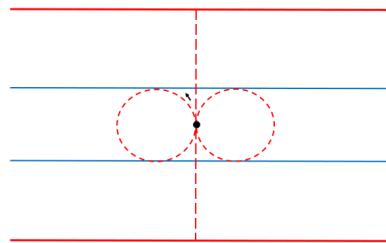
### 3.4 The Procedure of the Intervention

“Efficient Writing” was conducted by an experienced special education teacher in an intervention centre. A total of 30 sessions of treatment were provided in six weeks, with each session consisting of four slots taking a total of 80-minutes. The first slot started with simple visual-motor activities of the Brain Gym for brain activation. In the second slot, Chong learned lower-case letter formation using a laminated blank A4 paper with Alphabet 8s printed on it (see Figure 1). Visual cues and verbal guidance such as bright colors teaching aids, and verbal instructions describing the line characteristics of each component for each alphabet were given. In the third slot, Chong learned and practiced the same lower-case letter on four-lined laminated A4 paper with alphabet 8s printed on it (see Figure 2). Chong was guided to read the syllabus in the fourth slot, where the first letter started with the letter learned. Chong was required to write the letters taught under parental observation at home. Chong's handwriting on the teaching material (laminated A4 paper printed with Alphabet 8s), and the four-lined exercise book were being assessed informally during treatment. The effectiveness of interventions was assessed based on changes in the achievement of visual motor skills and the lower-case letter formation.

*Figure 1: Laminated blank A4 paper with Alphabet 8s printed on it*



*Figure 2: Four lined laminated A4 paper with Alphabet 8s printed on it*



### 3.5 Data Analysis

In phase one, Chong was given a pre-test, and in phase two, Chong was given a post-test. In phase three, repeated measurements on letter formation were carried out until the data collected was consistent. Quantitative data collected from an informal assessment based on Chong's visual-motor skills and letter formation achievement during the treatment period was rated in percentage and then interpreted into a line graph for visual analysis. The documentation analysis was then used to support the results by comparing the respondents' handwriting on their pre-test and post-test papers.

### 3.6 Results

Figure 3: Analysis of Chong's visual motor skill

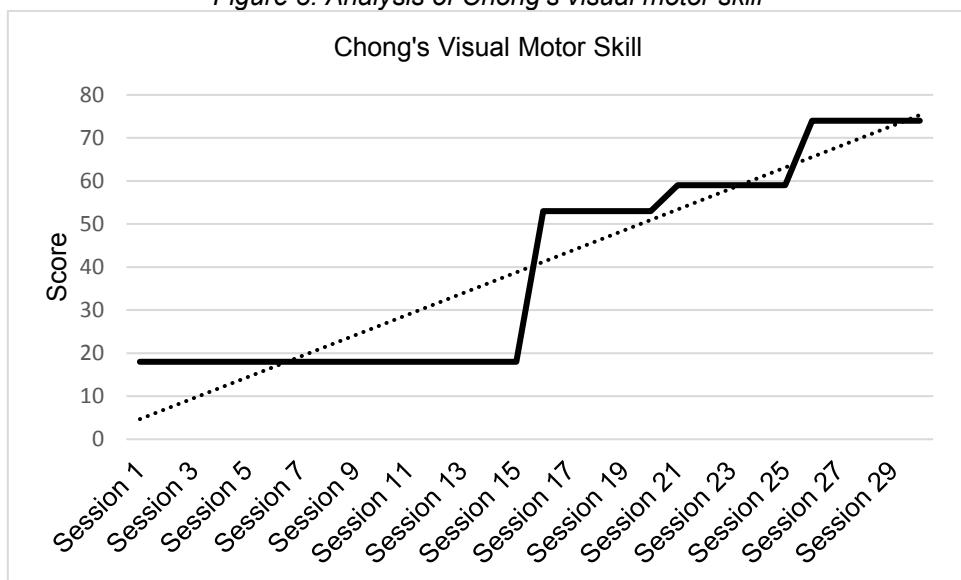


Figure 3 shows the data analysis of Chong's visual-motor skills. There was a significant increment of Chong's visual-motor skills throughout the treatment period. Chong's visual-motor skills improved from 18% to 53% after 15 sessions of treatment. After 20 sessions of treatment, Chong's visual-motor skills increased to 59%. After 25 sessions, Chong's visual-motor skill performance was maintained at 74%.

Figure 4: Analysis of Chong's letter formation proficiency

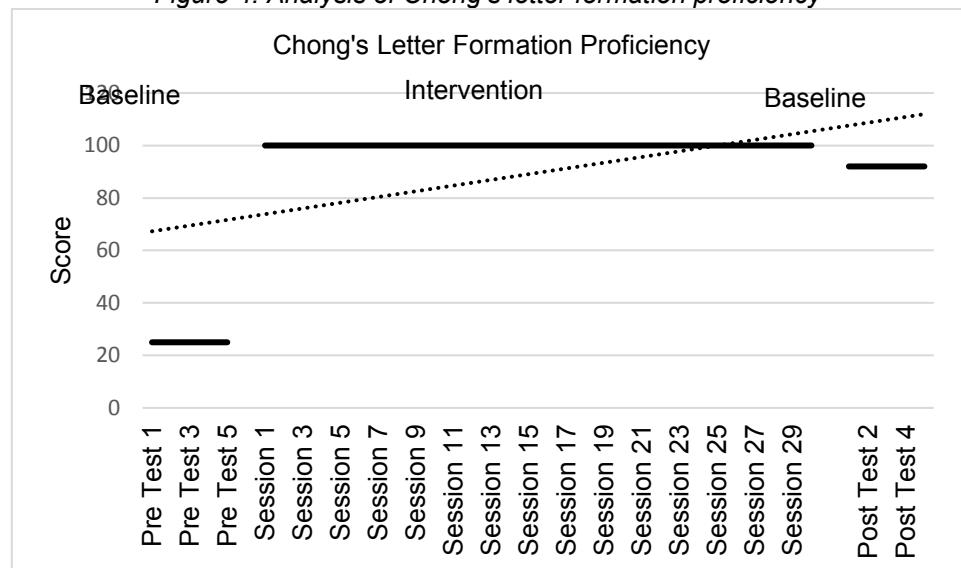
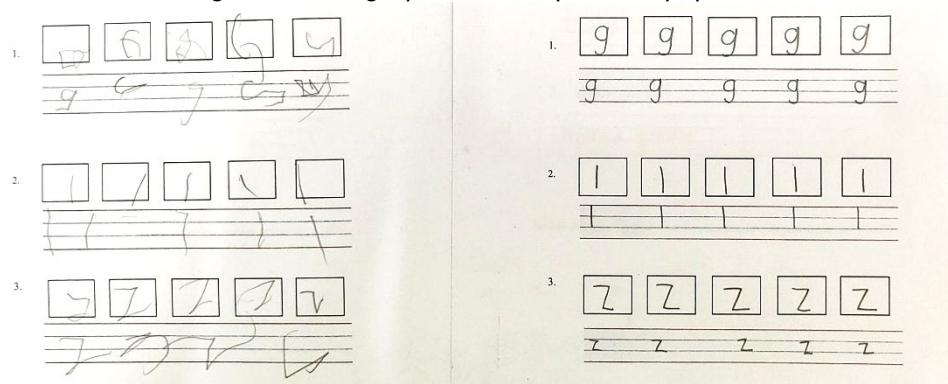


Figure 4 shows the data analysis of Chong's lower-case letter formation proficiency. There was a significant increment of Chong's letter formation proficiency throughout the study phase. Chong's letter formation proficiency improved from 25% to 100%. Even though the treatment had been removed in phase 3, his accomplishment was maintained at 92%.

Figure 5: Chong's pre-test and post-test papers



As shown in Figure 5, after treatment, Chong can write lower case letters more legibly. Furthermore, he could also maintain his handwriting proficiency even after the treatment was stopped.

#### 4. Discussion

This study has proven that "Efficient Writing" can improve the handwriting skills of autistic students with dysgraphia. This outcome is aligned with the study conducted by Ohl et al. (2013). Interventions focusing on fine motor skills and visual-motor skills effectively improve handwriting skills among all categories of primary school students. Visual-motor skills training adopted in "Efficient Writing" such as Cross Crawl and Lazy 8 managed to activate the brain's visual parts, which connects the motor part of the brain. The documentation analysis data obtained has supported the quantitative data which was collected during the treatment period.

The lower-case letters on the post-test paper were more legible compared to the handwriting on the pre-test paper. Based on Chong's post-test paper, Chong could remember the correct writing sequence for each letter tested. He could copy all the lower-case letters correctly. Each part of the lower-case letter was written legibly. Furthermore, the size of each letter written by Chong is consistent and no longer too large until it exceeded the space provided. The result obtained is supported by a previous study conducted by Ocampo et al. (2017), which concluded that Brain Gym is effective in improving students' handwriting skills on blue-red-blue lined paper. Pfeiffer et al. (2015), who indicated that the SMHP intervention is an effective intervention in improving handwriting skills among students with learning difficulties, is in line and consistent with the findings of this study. Since the relevant studies are still limited, it is important to develop an intervention that can be used to guide all parties, especially teachers and parents, to improve autistic students' handwriting. Curriculum legislators can propose "Efficient Writing" as an annual school program to familiarize such teaching methods among teachers. This is because inadequate training among teachers is a major issue in preventing teachers from experiencing such provision (Graham et al., 2008).

Through "Efficient Writing", teachers can be more confident while teaching and dealing with autistic students with dysgraphia. The teaching method allows the teacher to set teaching objectives based on the special needs of each student specifically. Parents who participated in "Efficient Writing" should provide their full support by collaborating with the teachers and following the rules in Bandura's learning theory for the autistic students' handwriting to develop properly. The theory prioritizes verbal cue guidance and feedback, reinforcement, and motivation through processes (concentration process, retention process, movement repetition process, and motivation process). When engaging with new ideas, students who have mastered handwriting abilities retain their learning more effectively. Thus, they can effectively transform knowledge.

## 5. Conclusion

This study has proven that "Efficient Writing" can improve autistic students' handwriting skills through explicit teaching methods that focus on visual-motor skills training and guided handwriting training. This means that autistic students with dysgraphia should be guided using "Efficient Writing" continuously until they had fully mastered handwriting skills. They are encouraged to participate in "Efficient Writing" intervention that includes appropriate writing exercises led by teachers and supported by parents.

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## PROBLEM OF SENTENCE STRUCTURE OF CHILDREN WITH HEARING IMPAIRMENT IN ELEMENTARY SCHOOL

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### ABSTRACT

This study aims to find out the problem of sentence structure of deaf children in elementary school. The methods in this study are quantitative and qualitative. The subjects in the study were seven deaf children in grade 5 at one of Surakarta's outstanding private schools. The data collected in this study used oral tests and interviews. The data analysis technique used is data triangulation. The result of this study is the ability to structure the sentence structure of deaf children with normal children differently. Some deaf children have difficulty understanding between subjects, objects, and predicates in placing these elements reversed. As a result, the sentences spoken and written are meaningless, nor the information conveyed and written is not appropriate.

**Keywords:** children with hearing impairment, special education, the problem of sentence structure.

### 1. Introduction

Communication skills have begun to be taught informally in the family environment since the child was born. These abilities continue to be developed at the formal education level (School). At the primary education level, children's activeness affects their ability to communicate. Communication skills are included in the language skills that every child must have (Aviana, 2019; Wulandari and Marlina, 2018). Language has specific rules or rules, whether it is about sound, grammar, or sentences. The rules of language are essential to master so that there is an agreement between fellow language users, thus avoiding mistakes in their use (Pradipta and Lesmana, 2019). Some of the language skills taught are speaking and writing skills.

Speaking and writing is a person's ability to pour his thoughts and feelings in oral and written form and as a means to communicate. Writing and speaking are fundamental tools in the

teaching and learning process (Wulandari and Marlina, 2018). In speaking or writing, the sentence must have a clear meaning to deliver the message as it should be by following the existing rules. The rule in the language is called grammar which is a grammar with a word that forms a sentence which is the largest unit for syntactic administration and the most diminutive word (Pradipta and Lesmana, 2019)

A sentence is a series of arranged words and becomes a whole sentence and have an accurate message. A sentence is a unit of language that has a pattern and contains a particular thought or idea. Patterns in a sentence can be referred to as sentence structures. When communicating, mastery of sentence structure is very important because, with the correct sentence structure, the message can be conveyed well (Siti, 2016; Pradipta and Lesmana, 2019). In speaking and writing skills, proper sentence structure is indispensable in everyday life (Junaidi, 2016; Sunarsih, 2012).

According to Sugihastuti and Saudah (2016), the sentence structure consists of several elements, namely the subject, predicate, object, complement, and description. Still, the sentence must contain at least the subject and predicate. The sentence components must be owned by each sentence and have an appropriate pattern to explain the meaning in a sentence, written, or spoken (Siti, 2016; Haliza et al., 2020). The ability to compose a sentence by the right sentence structure can be taught within the school's scope and outside the school. The power of each child in the preparation of a good and correct sentence structure is undoubtedly different, one of which is for deaf children.

Deafness can be interpreted as a person who has hearing loss and thus experiences obstacles in daily life, but basically, deaf children have an average level of intelligence (Nofiaturrahmah, 2018; Sirait et al., 2016; Haliza et al., 2020). The acquisition of language related to language skills in deaf children is influenced by the factors that cause their submission. Submission can occur in prelanguage and post-language periods. Prelingual deafness is a loss of hearing that occurs before speech and language skills develop. In contrast, post-lingual deafness is a loss of hearing that happens after spontaneous speech and language skills (Kirk & Gallagher, 2000). Language problems in deaf children include not much vocabulary, difficulty interpreting words containing expressions, and poor grammar (Rahmah, 2018).

Differences in factors that cause submission certainly affect them in the ability to structure sentences. Still, they must convey messages both verbally and in writing that can be understood by others (Sirait et al., 2016). The direct impact experienced by children who experience hearing barriers is language skills, communicating verbally or verbally (Hidayat, 2015). In general, especially the deaf get a speech skills development at the age of occupying elementary school (Aviana, 2019). Language is an essential skill that must be possessed despite its limitations. As is the case in schools, with a lack of language skills, it is not unlikely that there will be misperceptions that the child will accept. With the proper use of sentence structure, a sentence written will mean it. That's why proper sentence structure is needed in everyday life, including in learning.

In everyday life, deaf children often have difficulty conveying their thoughts and feelings to others. On the contrary, it is also the case for non-deaf children; it is difficult to understand what the Deaf convey in communicating with non-deaf people. Moreover, the sentence structure used by the Deaf often does not follow the language rules commonly used in communication. Therefore, this study aims to analyze the sentence structure in deaf children in elementary school.

## 2. Method

This study used a quantitative and qualitatively discrete approach involving seven grade 5 students at one of the outstanding private schools in Surakarta as the subject of research. All five students had hearing loss rates in the moderate category. In communicating daily in the school environment, they use total communication, a combination of sign language and oral language. The data collection techniques used are verbal tests and interviews. The data analysis technique used is a qualitative descriptive narrative. The criteria in the assessment of verbal tests and interviews are as follows:

1. Simple sentence pattern, including S-P-O elements (subject, predicate, object)
2. Simple and complementary sentence patterns, including elements of S-P-O-Pel (Subject, predicate, object, and complement)
3. Simple sentence patterns and captions, including elements of S-P-O-Ket (Subject, predicate, object, and description)

Each sentence structure used criteria very well, well, less, and very less (SB, B, C, K, SK).

SB : describe that the child can communicate by using a complete sentence structure pattern appropriately. A quantitative score between 81 – 100.

B : describe that the child can communicate by using a complete pattern of sentence structure but still not precise or inconsistent. The quantitative score between 61 – 80.

C : describe that the child can communicate using incomplete and inconsistent sentence structure patterns but can still be understood. Kuantitatif score between 41 – 60

K : describe that the child in question can sometimes communicate using a pattern of sentence structure but is incomplete and inconsistent, and difficult to understand. The quantitative score between 21 - 40

SK : describe that the child is no longer able to communicate by using a complete sentence structure pattern appropriately or sentences is not clear. His quantitative score is 20 and under from this.

Based on the findings, recommendations are prepared in guidance as necessary through remedial teaching, more intensive guidance through corrective and training, and advice with special programs. In addition, the third group needs to be created an individual language learning program.

## 3. Results and Discussion

### 3.1. Result

*Table 1. Mastery of sentence structure in research subjects*

No	Subject	Mastery of sentence structure	Assessment Results	Quantitative score	Category
1	NT	<ol style="list-style-type: none"><li>1. Simple sentence pattern</li><li>2. Simple sentence pattern plus complement</li><li>3. Simple sentence pattern plus description</li></ol>	<ol style="list-style-type: none"><li>1. The sentence structure of the child is not patterned.</li><li>2. The sentence structure of the child is not patterned.</li><li>3. The sentence structure of the child is not patterned.</li></ol>	15	Very less

2	ZH	<ol style="list-style-type: none"> <li>1. Simple sentence pattern</li> <li>2. Simple sentence pattern plus complement</li> <li>3. Simple sentence pattern plus description</li> </ol>	<ol style="list-style-type: none"> <li>1. The sentence of the child is only a patterned subject. Therefore, there is no Predicate and Object element/there is only one sentence element in the correct position.</li> <li>2. The sentence of the child is only a patterned subject. There is no Predicate and Complement element, or there is only one sentence element in the correct position.</li> <li>3. The sentence of the child is only a patterned subject. There is no Predicate, Object and Description element, or there is only one sentence element in the correct position.</li> </ol>	26,6	Less
3	RN	<ol style="list-style-type: none"> <li>1. Simple sentence pattern</li> <li>2. Simple sentence pattern plus complement</li> <li>3. Simple sentence pattern plus description</li> </ol>	<ol style="list-style-type: none"> <li>1. The sentence of the child is only a patterned subject. Therefore, there is no Predicate and Object element/there is only one sentence element in the correct position.</li> <li>2. The sentence of the child is only a patterned subject. For example, there is no Predicate and Complement element, or there is only one sentence element in the correct position.</li> <li>3. The sentence of the child is only a patterned subject. For example, there is no Predicate, Object and Description element, or there is only one sentence element in the correct position.</li> </ol>	26,6	Less
4	ST	<ol style="list-style-type: none"> <li>1. Simple sentence pattern</li> <li>2. Simple sentence pattern plus complement</li> <li>3. Simple sentence pattern plus description</li> </ol>	<ol style="list-style-type: none"> <li>1. The sentence structure of the child is not patterned.</li> <li>2. The sentence structure of the child is not patterned.</li> <li>3. The sentence structure of the child is not patterned.</li> </ol>	5	Very less
5	ZL	<ol style="list-style-type: none"> <li>1. Simple sentence pattern</li> <li>2. Simple sentence</li> </ol>	<ol style="list-style-type: none"> <li>1. The sentence of the child is only a patterned subject. Therefore, there is no</li> </ol>	21,6	Less

		3. pattern plus complement 3. Simple sentence pattern plus description	Predicate and Object element/there is only one sentence element in the correct position.  2. The sentence of the child is only a patterned subject. For example, there is no Predicate and Complement element, or there is only one sentence element in the correct position.  3. The sentence of the child is only a patterned subject. There is no Predicate, Object and Description element, or there is only one sentence element in the correct position.		
6	AD	1. Simple sentence pattern 2. Simple sentence pattern plus complement 3. Simple sentence pattern plus description	1. Children's sentences are predicate-object patterned only. Therefore, there is no Subject element/there are only two elements of the sentence in the correct position.  2. The child sentence is only subject-predicate patterned, or there are only two elements of the sentence in the correct position.  3. The child sentence is the only subject-predicate pattern, or there are only two elements of the sentence in the correct position.	53,3	Enough
7	RD	1. Simple sentence pattern 2. Simple sentence pattern plus complement 3. Simple sentence pattern plus description	1. S-P-O patterned but inconsistent child sentences 2. Subject-Predicate-Object patterned child sentences. Occasionally it comes with complementary elements in the correct position. 3. Subject-Predicate-Object patterned child sentences. There are Subject, Predicate, Object, and Description elements in the correct but inconsistent position.	70	Good

*Table 2. Summary of Sentence Structure Mastery Assessment Results in Research Subjects*

No	Name (Initial)	Value	Information
1	NT	15	Very low
2	ZH	26,6	Low
3	RN	26,6	Low
4	ST	5	Very low
5	ZL	21,6	Low
6	AD	53,3	Enough
7	RD	70	Good
Average		31,15	Low

Based on these results, it can be known that there are 2 (two) subjects with very little mastery of sentence structure, 3 (three) subjects including fewer categories, and 1 (one) subject with good types, and 1 (one) subject with a good type. Of the seven subjects, most or 5 (five) children are less and significantly less or if made a percentage reaches 70.7%. Only 2 (two) subjects fall into the category of sufficient and good, or if made, a percentage reaches 29.3%.

### **3.2. Discussion**

This finding illustrates that in grade V elementary school deaf students with moderate impairment rate, it turns out that most of them (70.7%) experiencing real language difficulties is characterized by the inability to communicate using the standard and correct sentence structure pattern, i.e. the simple pattern of S-P-O or S-P-O-Pel. or S-P-O-Pel-Ket. These findings illustrate that language learning in deaf children at the elementary level has not been effective. Failure in language learning at the elementary level will greatly affect the mastery of knowledge in other subjects, either at the elementary level or the development of education at the next level. Indeed, they need more intensive guidance, remedial learning, and exceptional guidance outside of learning hours, especially language practice activities using the correct sentence structure. Language delays due to hearing impairment require all components of the school, especially teachers, to be more intensive in providing language learning materials, especially at the elementary school level.

The child's understanding of the elements of sentence structure is still low. For example, some children still have a misconception between "Subject", "Object", and "Predicate" by placing the element upside down. Some children only understand the concept of "Subject". This can cause sentences that are spoken and written to be meaningless or information submitted and written inappropriately. So it can lead to hampered communication of children with others. Based on observations, daily sentences in children used in the learning process and to communicate with others are not patterned. In composing a sentence, the pattern of children's sentences is still often reversed, both in writing and verbally. For example, when the child is working on making a sentence that should be "I go to school with my father" to "school goes with the father". It also has an impact on their ability to absorb the information provided.

The ability of deaf children in composing sentence structures is different from normal children. In line with the study results, Hanafi et al. (2016) and Nofiaturrahmah (2018) explained that deaf sentences have the wrong syntax structure. There is the use and addition of inappropriate words in one sentence, and the reduction of the word should be. In learning activities, children copywriting more often than participate directly. This causes the child's ability to compose the sentence structure will not to develop so that the design of the sentence spoken or written by the child himself is still ambiguous. Based on the research results from Pradipta and Lesmana

(2019), the ability of deaf children in grade IX SMPLB in composing simple sentences is still unstructured and difficult to understand the meaning.

Language functions as a vehicle to make communication contacts, express feelings, needs, desires, informers, and gain deep knowledge. If language and speaking skills are lacking, it will cause related problems (Aviana, 2019; Christine, 2020). Furthermore, Aviana (2019) added that if experiencing barriers in language and speech will also affect other aspects of life, including auditory perceptions, intellectual knowledge, emotions, parents and society, vocational, social, and education. The form of communication that deaf children have begins to take shape when they run a series of learning and training of language and speaking skills routinely provided by teachers in the school and parents and surrounding areas. Their ability, in general, makes communicating in the form of sign language by optimizing nonverbal forms of communication through gestures, face, eyes, touch, and follow the movement of lips. However, this resulted in the sentence structure used by the child is still ambiguous.

Writing this ambiguous sentence structure certainly has another impact on the child. When the child is still writing with a sentence structure that does not fit the correct pattern, it will impact the ability to write higher levels, such as writing a report, description, etc. The habit of writing sentences with ambiguous sentence structure can also cause difficulties in children in conveying information when communicating and can lead to low learning achievements of children (Wulandari and Marlina, 2018). The learning process must use communication, and if the sentence structure of the child is ambiguous, then it is not impossible that there can be misunderstandings in the learning process. Therefore, deaf children must have oral and written skills with the correct sentence structure to not cause other problems.

The language skills of deaf children are impaired. This is due to the lack of information that children receive through the sense of hearing, while language development is closely related to hearing ability (Aviana, 2019; Junaidi, 2016). Language and speech are the results of the impersonation process. The lack of information received causes deaf children to experience speech delays and limited word preservation. The limitations of preserving the word affect the child's language skills, which cause the child to have difficulty communicating, understanding the information received and interpreting figurative language and abstract words (Siti, 2016; Pradipta and Lesmana, 2019; Haliza et al., 2020). Children who experience language barriers will encounter barriers to communicating their thoughts more fully (Lyster, 2003). In the development of language and speech, deaf children have difficulty in the stage of imitating. At the time of imitating deaf children was limited to visual, namely motion and gestures. Further language development in deaf children requires unique and intensive coaching, following submission and other abilities.

In line with Hernawati (2007) findings, submission resulted in the development of children's language is hampered. Children's speech is impaired due to the limitations of word preservation. These language barriers also result in obstacles in communication and social interaction of children with others. At the same time, the use of language is essential because language contains an idea or purpose so that it is needed in daily life. A language is a communication tool used in the family environment, the community, and the school environment. In addition, language is also used in learning in schools, where it fulfills the child's right to obtain an education. Therefore, it is necessary to improve the ability of children in language, mainly to compose sentences by the correct sentence structure.

## 4. Conclusion

Based on the results of the research conducted, all research subjects have problems using sentence structures that are still ambiguous in communicating both verbally and in writing. More than (70.1%) category deaf people have issues forming sentences that require the use of Subject-Predicate-Object-Complicated-Description (S-P-O-Pel-Ket) sentence structure. And only about (29.9%) have mastery of the approaching sentence structure precisely. In addition, subjects experience concept errors in simple sentence elements, such as concept errors in the placement of Subjects, Predicates and Objects, and Appendages and Captions due to the impact of their submission. Therefore, it takes an effort to improve the ability of the Deaf in language, mainly to compose sentences by the correct sentence structure. Based on these findings, it is recommended that language learning for the Deaf be intensified, remedial teaching is carried out, and guidance outside of learning hours, especially for proper language practice exercises, can be done in schools. Furthermore, the number of hours of Bahasa Indonesia lessons at SLB Tunarungu needs to be reviewed according to the needs of the Deaf.

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# MULTISENSORY LEARNING USING PERSUASIVE TECHNOLOGY FOR EFFICIENT ADAPTIVE LEARNING OF CHILDREN WITH SPECIAL NEEDS SPEDATHOME PROGRAM

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## ABSTRACT

More than two decades ago, a need to change the instructional direction was identified so children with special needs can be served better. According to the educational standards students with disabilities should be provided with opportunities to realize their potential. However, millions of children in poor or developing countries lack access to schools and support services. The COVID-19 pandemic has amplified this struggle. Over the last decade, technology has advanced to a great extent. Technology can be a powerful tool for assisting children with special needs and can serve as a great equalizer. Persuasive Technologies can help overcome challenges in learning and developing by revolutionizing the way education is delivered. Web 2.0 has the ability to change the way people communicate and interact. Thus, we propose a solution which combines Persuasive Technology and Web 2.0 to bring a sense of normalcy, growth, and development to their children with special needs.

**Keywords:** Persuasive technology, Persuasive learning, E-learning for children with special needs, Web 2.0,

## 1. Introduction

The term special needs cater to a wide array of diagnoses, some which may resolve swiftly, while some which may pose a challenge for life. For the rest of the paper, children with special needs are defined as children with average or above average intelligence manifesting with learning disability ADD/HD and high performing children on the spectrum.

For children to reach their full potential these children with special needs require certain accommodations or modifications in the classroom. However, according to multiple reports [1,2,7] most of the children with disabilities do not get the opportunity to attend any educational institute. For the relative few who are able to attend, in spite of the efforts to make the education system inclusive their experience is often very difficult. Children with disabilities are considered as the world's most vulnerable, marginalized and stigmatized populations. The COVID-19 pandemic has caused disruption of life in every corner of the world but its impact on children with pre-existing weaknesses is much worse. [3] The social distancing measures implemented by many countries have caused severe disruptions to daily routines with schools being suspended nationwide in 189 countries. [4] The only plausible solution is online learning which poses an additional challenge for children with special needs. Furthermore, parents of these children are forced to take up the role of a special needs teacher, occupational therapist, speech-language pathologist, behavioural therapist, and more along with fulfilling all the responsibilities they had otherwise. [5] Technology has evolved over time especially its use in education and learning. Assistive and adaptive technology, have been recognized as vital for use in instruction for students with special needs. [6] They improve the academic skills of students and promote independence of a student by reducing the constant need for direct teacher involvement. The development of Internet-based communication technology has the ability to alter the way learners communicate and interact. Blogs, social media and YouTube are some of the examples of Web 2.0 based technologies. Communication and interaction activities performed with Web 2.0 technology could provide an opportunity to be evolved into persuasion technology which can mould and improve current behaviour. [8] Thus, by combining the concepts of Web 2.0 and persuasive system a new model of inclusive learning can be devised that can better cater to children with special needs.

## 2. Literature Review

### 2.1. The KSMS Project [23]

The paper focuses on how a persuasive mobile learning application can serve as an alternative for schools. The target audience of the application is children in developing nations without access to schools or education. The project focuses on providing automation and gamification of learning and to combine HCI multimodal interaction design with persuasive design for the process. The distinctive feature of the application is that it is automated and unique. The application is not an add on to the regular classrooms but a standalone one that provides an integrated environment comprising of components like teachers, classrooms, resources, etc. They plan to do this by using persuasive technology to compensate for the non-availability of teachers. The framework for persuasive technology is divided into three main layers:

1. Learning Structure: The learning process is designed in such a way to be rewarding and consists of small achievable goals. These goals will help the end user to feel successful on accomplishing them which will finally lead to achieving the target goal.
2. Learning Medium & Infrastructure: The ARCS model of motivation is used to ensure that the user engaged with the application throughout and is motivated to progress with his studies. Virtual classrooms and learning groups are created with the help of data that is collected from devices. This formation of these groups can help in interactions between various peers and can even play the role of a teacher when one peer is helping the other one out.

3. Learning Content and scenarios: The persuasive technology is integrated with the content in such a way that the learner gets the content. For example, the data from the GPS is decoded in a way that it provides informative content to the user like suggesting words like umbrella on a rainy day. Moreover, when a user is done with a task, he will be contacted to peers having difficulty in the same task via Bluetooth to create a teacher-like atmosphere.

Strengths:

- i. Results of the experiment conducted show that an application such as theirs that makes use of persuasive technology can be used as an alternative for traditional education
- ii. Automation in learning

Limitations:

- i. The possible challenges to the application are the absence of internet in the areas where the target population live and also to create content that meets the standards of the Central Board for Secondary education in its international version. [23]

## **2.2 Persuasive Technology for Enhanced Learning Behaviour in Higher Education [25]**

The paper focuses on how persuasive technology and Web 2.0 can be used in amalgamation for enhanced learning behaviour. To verify the accuracy of the hypothesis in the previous sentence, a survey was conducted with 30 participants. Data was collected using questionnaires that matched the context of the user and the persuasion aspects. The questionnaire had a 5-point independent scale. The data was collected in two parts. First before the intervention and then after the intervention. Smart PLS 3 was used for data processing and to test and analyse the relevance of the variables.

The participants were grouped based on how often they used the internet in the past and if they have used learning media from the internet before. After which the users were persuaded in accordance with the Gellers model of behavioural change which included three types of interventions namely instructional, motivational, and supportive interventions and four stages of change. Behavioural changes observed with e-learning (Web 2.0) and persuasive technology change in the positive direction in most cases. Web 2.0 creates opportunities for users to connect and collaborate as a community. The concepts computer-human and computer-persuasion are combined when Web 2.0 is combined with persuasive technology. The results of the hypothesis show that there is significant positive difference in the level of understanding before using e-learning based persuasive technology and after it. [25]

Strengths:

- i. Positive behavioural changes are observed when persuasive technology with web 2.0 is used for e-learning
- ii. The Gellers Model is effective for positive change

Limitations:

- i. The universal use of Web 2.0 technology brings a very diverse set of features; hence, the persuade may not realize it.

## 2.3 Awareness of Sexual Abuse Situation (ASAS) [26]

The paper focuses on an application called Awareness of Sexual Abuse Situation (ASAS) that uses persuasive technology to increase children's awareness during situations that may impact their safety. The application was built for children between the ages of 7 and 9. The design principles that were used to increase children awareness towards child sexual abuse (CSA) are similarity, simulation, attractiveness and suggestion. The application has an attractive interface to be visually appealing to the kids and has a mascot to guide the children along the way. It uses the language that is known by the child and a child's voice to meet the similarity principle so that the child feels familiar and comfortable with the application. The application also provides various suggestions that the children should be aware of if they are ever stuck in a dangerous situation. Finally, simulation is used so that the children can rehearse the behaviour without actually having to face the situation. 28 primary school students below the age of 13 were used as the target population of the experiment. The experiment confirms that ASAS has the potential to be an educational tool. Most of the participants agree that the application was useful in increasing their awareness about CSA. The paper concludes with that fact that selecting the right persuasive principles is critical in creating a persuasive learning application. [26]

Strengths:

- i. ASAS can be used as an educational tool, for educating children (about CSA).
- ii. The interface of the application is interesting and user friendly. This helps understand content in an easier way and enhances motivation

Limitations:

- i. The study was performed on a small group. Increasing the sample size would provide more accurate results.

### 2.3.1 SpEd At Home Program

SpEd At Home's main goal is to create a learning system initially as a web-based solution, later as a mobile application that will be adapted for individual self-learning of numeracy and literacy skills of children based on their functional proficiency. The project targets children with special needs who have difficulty to access remedial and occupational therapy services. The main objectives of SPED at home are as under:

1. To provide a screening and assessment tool for children between ages of 6 to 13 years, to identify their numeracy and literacy functional proficiency, to build a occupational assessment therapy tool to identify the cognitive and physical deficits resulting in academic and behavioural performance area of children.
2. To design curated educational plans for children based on game architecture (to support the delivery of learning contents) to be delivered either as coach-led, parent-led or self-led track to support learning outcomes
3. To integrate persuasive design and HCI multimodal interaction design in the learning process. The main goal here is to ensure a more adaptive system that allows users perceive ease of task helping him/her control the pace of learning thus being continuously motivated to learn and have improved learning outcomes

Through this paper, we will answer the following research questions:

1. Role of persuasive technology for student motivation and perseverance.
2. Level of contextual persuasion needed in order to ensure learner centred strategy and efficient self-determined education

The proposed model uses Web 2.0 coupled with persuasive technology to help children with special needs.

## **2.3.2 Background**

### **2.3.2.1 Motivation**

Motivation has no single definition. It is something that helps begin goal oriented behaviour, and stay on the right track. Biological, cognitive, social and emotional forces are responsible for activating behaviour that leads to motivation. Motivation is the driving force behind every action that one takes. It is the reason why someone does something or takes any action. Every action is always fuelled by motivation.[9] Marshall H coined the term “motivation to learn” whereas the benefits the learner gets out of learning academic work irrespective of whether there is interesting. [10] Brophy, J. Has a different take to “motivation to learn.” He defines it as competence gained by an individual over the years but influenced most likely by direct instruction by mostly parents and teachers. Motivation can be divided into two categories:

1. Extrinsic motivation: Are often factors outside of an individual's circle of control like rewards, trophies, fear of punishment, recognition, etc. [11] An extrinsically motivated student will perform well in class for praise by teachers, trophies, good grade, fear of punishment by parents, etc [12]. They might also do well due to pressure, for incentives, and other reasons. [13]
2. Intrinsic Motivation: Another word for intrinsic motivation is self-motivation.[14] It often includes one's personal values [15]. An example would be to solve a complex Sudoko puzzle for self-high or personal gratification that the individual was able to solve the problem. [16] Thus, an individual who is intrinsically motivated takes up an activity for his/her own sake as the its provides enjoyment, learning and accomplishment to the individual. [17]

### **2.3.2.2 Persuasive Technology and Motivation**

In order for people to change their beliefs or behaviours on their own, they need to be motivated. Persuasive technology helps them build this motivation without deception. As tools, persuasive technology increases one's ability to carry out a task by making it easier or restructuring it.

Many researches have been conducted on how student motivation can be managed and monitored. The one by Keller, J.M. is the most popular one. It is called the ARCS model and has four dimensions or parameters of motivation and is used to improve the motivational appeal of the course content. It stands for Attention (A), Relevance (R), Confidence (C) and Satisfaction (S). [18] It uses motivational messages to enhance the interaction between the teachers and students which helps to enhance the motivation of the students. [19] Ciampa, K [12] argues that the dimensions that cover both intrinsic and extrinsic motivation are curiosity both cognitive as well as sensitive, cooperation, challenge, control, recognition and competition. Bobis, J., et al. [20] propose a mathematical motivational model to enhance

student motivation. Their research covers topics like teaching strategies that would help motivate students to learn mathematics more effectively and efficiently. They also proposed an upgraded version of Martin, A.'s motivation wheel framework by breaking down the wheel into 3 divisions namely: maladaptive, adaptive and impeding.[21]. Fogg [22] provided a different perspective to motivation where he introduced motivators that lead to behaviour change in the Fogg Behaviour Model (FBM). They are:

- i. Pleasure vs pain
- ii. Social acceptance vs rejection
- iii. Hope vs fear.

### **3. Proposed Persuasive Technology Model for Motivation**

Like we discussed earlier, in order for a child to be adequately motivated, a combination of intrinsic and extrinsic motivation should be given to the child. Our application provides both of them to the child which is discussed below.

Intrinsic motivation: Our application through its assessment identifies the functional proficiency of the child for numeracy and literacy. Based on the same, an individual educational plan (IEP) is curated for the child which helps the child pick up from the point where he derailed and gets him back on the right track. This will help the students to get motivated to learn and go forward.

Extrinsic motivation: The application is gamified such that a child receives points on completing tasks such as submitting worksheets, completing quizzes and revision. These points can then be used to grow one's own dragon and defeat other's dragons which will give the children the reward they need to stay motivated.

After discussing motivation in general and how the students can be motivated through the SPED at Home application, we discuss the persuasive technologies and how they are useful for education and specifically to our application in the next section.

### **4. Using Web 2.0 to Engage Learners**

Web 2.0 tools are applications that are based on social networking, dynamic interaction or user interfacing between information and its associated people. They are digital programs. They are interactive, easy to use, interactive platforms which can be used by students to learn, create, collaborate and share. Web 2.0 tools make learning more engaging, interactive and help facilitate students to learn course material more easily. This is because the users decide how they want to interact with create and use information

Benefits of Web 2.0 tools are:

- i. Ease of use
- ii. User Friendly
- iii. Intuitive
- iv. Increases self-efficacy of students [27]

Web 2.0 is used in education mainly because it helps with both collaborative and self-directed learning [28]

The proposed program will adapt to the proficiency level of the child, helping the user perceive ease of use of tasks and making it user friendly to keep the user motivated and

thus engage with the task. By integrating web 2.0 with our program, we were able to get all of the benefits that web 2.0 provides to create a complete holistic program.

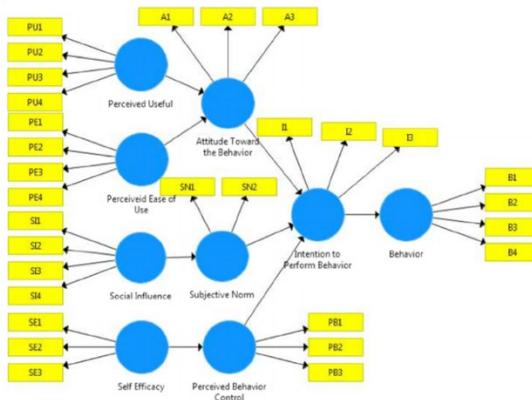
## 5. Proposed Model

Persuasive technology has been known to modify human behaviour in various situations. We believe this approach will be highly beneficial in the area of education and learning. The Geller's model of behavioural change states that there are three types of interventions and four stages of change. Each stage of change can work well if an intervention is carried out. There are three types of intervention in the Geller model, namely instructional, motivational, and supportive interventions.

Therefore, we propose to integrate persuasive technologies in a framework with the above mentioned interventions. The proposed hypotheses model of Geller is used to build positive behavioural change among users. It explains the factors responsible for a habit formation and completion and continuation of a task. It is based on four tenets – Perceived usefulness of task, perceived ease of use, social influence and self-reliance. All the four tenets ensure effective behavioural change and task maintenance and sustenance. This used effectively in our model of persuasive technology with web 2.0 does make it engaging, user friendly for the children with special needs who are often reluctant to take on educational tasks.

It is pictographically represented with the help of figure 1.

*Figure 1. The Hypothesis Model [24]*



Given below is a description of the framework and how each intervention is achieved:

### 1. Instructional Intervention

We aim to provide a Multisensory instructional model which encompasses combination of physical and cognitive along with numeracy and literacy performance areas based on functional proficiency of the child. Multisensory education is conceived as an instructional method using visual, auditory, kinaesthetic, and tactile ways to educate students.

### 2. Motivational Intervention

The program provides session scores, assignment scores and overall proficiency scores, gamified for the child based on token economy and rewards to ensure adequate motivation.

### 3. Supportive Intervention

All the users are screened with the help of quizzes and tests pertaining to the topics - language and math to determine their functional proficiency. Based on this score, a personalized IEP (Individualized Education Program) is developed for the child. Adequate scaffolding is ensured by initially handholding the child through a coach led support transitioning to a parent led support eventually enabling the child to function independently.

## 6. Conclusion and Future Work

An understanding evolved out of the presented literature review. It reveals the efficacy of persuasive technologies with web 2.0 as an effective model across various target populations towards improving engagement and learning outcomes. The SpEd at home model therefore can be viewed as an experimental program to be based on both persuasive technology and web 2.0 to allow access to education and ensure better learning outcomes for children with special needs. Future work would include to create and curate a pilot study to study this proposed multisensory learning program using persuasive technology for efficient adaptive learning of children with special needs.

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# REDUCING DISRUPTIVE BEHAVIOR AMONG SPECIAL EDUCATION NEEDS CHILDREN OF 3 BELLATRIX THROUGH THE *INDAHNYA SOLAT* ACTIVITY

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## ABSTRACT

*Indahnya Solat* (Beautiful Prayer) is the best practice of behavior management for Students with Special Education Needs (SEN) learning problems implemented in the Special Education Integration Program Year 3 class involving 6 students in a school in Hulu Selangor. The purpose of this study as a way to educate SEN learning problems that often disagree, often fight, make too much noise, extreme movement and disturb peers in the classroom. Based on observations, such disruptive behaviors result in students being less focused and disrupt teaching and learning sessions. Therefore, this activity is expected to provide awareness and gentleness to SEN of the learning problems involved. It can also strengthen the practice of performing obligatory prayers 5 times a day at home. In line with the Malaysian National Education Philosophy, this activity is an effort to provide students who are balanced and harmonious in terms of intellectual, spiritual, emotional and physical. Qualitative methods were used for data collection and analysis through observations, interviews and document analysis. Findings from this study, found that 4 out of 6 SEN people with learning difficulties showed an increase in positive behaviors. The conclusion from this study, there are some improvements that need to be implemented to improve the student's potential as a continuation of the activity *Indahnya Solat* in order to bring better results and effects. Among them are the mentee mentor program, collaborative with Islamic Education subjects, *Bestari Solat* Camp and Implementation of *Dhuha* Prayer Activities

**Keywords:** Prayer, behavior management, disruptive behavior, Special Education Needs (SEN), Special Education Program Integration

## 1. Introduction

Disruptive behaviours are behaviour such as hyperactivity, extreme changes, noise, unnecessary student movements, disturbing classmates, loud laughter and physically aggressive behaviours such as pushing or punching in class. Kerr & Nelson (1998) state

that; destructive behaviour is any behaviour that interferes with the learning process that is taking place in the classroom, including those that aim to gain attention, whether positively or negatively. In the context of school education, disruptive behavioural can affect the smooth running of the teaching and learning process in the classroom. Hymn is a prayer and a link between man and his Creator. Through prayer they can achieve peace of mind, purify the heart, form a good personality and then encourage individuals to do good deeds and prevent from committing evil.

The words of Allah from Surah Al-Ankabut, verse 45 which means:

*"Read what has been revealed to you, namely Al-Kitab (Al-Quran) and establish prayer. Indeed, the prayer prevents (deeds) of abomination and evil. And indeed, the remembrance of Allah (salat) is greater (superiority than other acts of worship). And Allah knows what you do. "*

In this regard, Islam commands to teach, guide and emphasize the implementation of obligatory prayers as a practice of their children as early as 7 years old. Islam has also recommended beating as early as seven years old if they still miss the five daily prayers (as to educate).

Recognizing the fact those SEN pupils with learning problems in our school possessing disruptive behaviour, hence the practice of prayer is applied. The first approach is to perform the dawn prayer after attending school and it has been practiced since early 2020. This practice is continued in schools for children who fail to fulfil the responsibility of prayer at home. The implementation of the activity aims to help cleanse the heart from the rough soul, one of the spiritual fillings, further emphasizing the importance of performing prayers as an obligation of Muslims.

It is in line with the objectives of the National Education Philosophy written in 1987 which is stated as follows: "Education in Malaysia is a continuous effort towards further developing the potential of individuals in a comprehensive and integrated manner to create a balanced and harmonious human being intellectually, spiritually, emotionally and physical based on faith and obedience to God. This effort is to produce Malaysians who are knowledgeable, skilled, virtuous, and responsible. In this regard, to achieve the goal of producing pious or perfect human beings, among the policy matters that need to be prioritized is to develop a noble personality through the implementation of five times prayers on each SEN pupils with learning problem.

## 2. Problem Statement

This study was conducted to evaluate the behavioral changes of SEN pupils with learning problems in our school by controlling their disruptive behavior in the classroom in the new norm era Covid-19. The study samples were 6 SEN pupils with learning problems in our school. Qualitative methods were used for data collection and analysis through observations, interviews and document analysis.

Issues related to SEN pupils' behavioral problems are clearly visible when they behave destructively, often neglect attending school and are not interested in doing the learning assignments given. This has caused SEN teachers to design and implement this study in hope that there will be a change in attitude and the learning process can run smoothly.

## 2.1 Research Questions

- a. Is performing the 5 times prayers able to change attitudes and learning problems in SEN classroom?
- b. What positive attitude can be applied among SEN pupils if performing the obligatory prayers 5 times?

## 2.2 Research Objectives

- a. To strengthen self-discipline and thus performing the obligatory 5 times prayer.
- b. To educate and apply pure values in the context of Special Education Needs pupils.

## 2.3 Target Groups

This study involved 6 SEN pupils with learning problems. They consisted of:

*Table 1 Study findings of the student's disruptive behavior*

No.	Sample	Disruptive Behavior	Observation	Interview
1	Sample 1	Disturbing	/	-
2	Sample 2	Manipulation	/	/
3	Sample 3	Anger management	/	/
4	Sample 4	Anger management and sulky	/	/
5	Sample 5	Activeness and disturbing	/	-
6	Sample 6	Extreme passiveness	/	-

## 2.4 Justification of the Study

This study was conducted on SEN pupils with learning problems whereas some of them were not directly involved in this study. This is due to the fact that two of them are new comers in 2021, which cannot be detected from the aspect of behavioural changes. The students in question are Sample 5 and Sample 6. Meanwhile, Sample 1 was not involved in the interview session because he is a Down Syndrome child who is not fluent in speaking.

## 3. Literature Review

Thalib, M. (1997), stated that, prayer education is a form of early education that should be emphasized as a practice of children as early as seven years old as recommended by the Prophet SAW. This is because prayer is a pillar of religion that must be performed by every Muslim. It is an important identity that distinguishes between Muslims and non-Muslims. Parents in particular need to be aware of their responsibility to ensure that children perform prayers consistently because prayer is the main pillar to fill the souls of children with monotheistic beliefs (Thalib, 1997).

Furthermore, Nik Zaiton, M., N. (2007), stated that from the studies that have been made on the inculcation of noble morals in general is depending on the practice of quality prayer. Only a perfect prayer will guarantee the integrity of one's morals as well as be an invulnerable shield and fortress in the face of slander, evil, wickedness and satanic incitement (Nik Zaiton, 2007). This study can be further strengthened based on the statement from Siti Rokiah, A. G. (2007), in his study entitled "Prayer Practice Among Students: A Study at the Center for Instructor Training and Advanced Skills (CIAST), Shah

Alam" found that there is a significant relation between the degree of prayer practice with the level of student morality (Siti Rokiah, 2007).

Through the findings of Fariyah, H. (2006) proved that the neglect of obligatory prayers is one of the factors in the occurrence of symptoms of moral decay among youth in today's society. Therefore, it is appropriate to practice prayer among children to coincide with the title of the study 'Reducing disruptive behaviour among Special Education Needs children of 3 Bellatrix through the activity *Indahnya Solat*.

## 4. Research Methodology

This study uses research methodology such as observations conducted in the classroom, interviews with SEN pupils with learning problems and analysis of source documents from the *Analisis Pengkalan Data Murid* (APDM) attendance system.

### 4.1 Checklist

After conducting this study there were positive attitude changes among SEN pupils with learning problems. Changes in student attitudes were observed and all data were recorded through constructed checklists and observations. All four samples have undergone significant changes. Before the 'best practice activity' was carried out, Sample 4 was often sullen and hot -tempered. As the result, changes in positive attitudes become increasingly apparent. Sample 4 is calm in talking with friends and teachers.

The angry attitude that was often seen before subsided from day to day. From the aspect of socializing and speaking, he (the subject) became more polite and did not use neither abusive words nor cursing. Apart from that, Sample 1 has been listening to the teacher's instructions better. Meanwhile, Sample 2 is now easy to forgive the mistakes of his friends. This best practice has clearly changed the attitude of SEN students in a more positive direction.

Table 2 Sample of student's positive development

No. Sample	Names	Positive development
1	Sample 1	Concentrate and do homework
2	Sample 2	Listen to the teacher's instructions
3	Sample 3	Becomes forgiving
4	Sample 4	Less sulking and diligent in helping teachers

### 4.2 Interview

Based on the interview session with several respondents, it was found that prayer activities can give a better understanding on the responsibilities as a Muslim student. This is based on several questions related to prayer and SEN pupils' interest in learning problems in school. All SEN pupils with learning difficulties showed love and interest in school and were able to take good care of their personalities. Significant changes occurred to Sample 1 who used to influence students, fighting and hating to do school work but nowadays he turned to be helpful to other friends.

### 4.3 Level of Attendance in *Analisis Pangkalan Data Murid (Apdm)* System

The percentage of SEN pupils' attendance has increased; teaching progress is getting better. A responsible attitude and love for school prevails among them. All attendance data is taken in the student APDM system. Before the *Indahnya Solat* program was practiced, the attendance percentage was not encouraging in January 2020 which was 89.5 %, but after this best practice was implemented, the attendance percentage of the entire SEN classroom has increased by 3.4 % to 92.9 % in September 2020. This best practice is able to discipline students and cultivate an attitude of love for school because they feel safer and the prayer activities have successfully changed their behaviour and bring them closer to spirituality. The 100% attendance percentage can be seen in the presence of Sample 1 and Sample 3.

*Table 3 Percentage of attendance based on months*

No.	Months	% Attendance
1	January 2020	89.5%
2	September 2020	92.9%

### 4.4 Student Work Results

After disciplining students by performing obligatory prayers 5 times, pupils are increasingly showing interest in learning as well as helping weaker friends. Data is obtained by looking at the results of students' work that is getting neater and better. For example, Sample 1 and Sample 2 previously were neglecting to do schoolwork and liked to play in class, yet after this best practice was practiced, they showed a very noticeable change. Now the results of their assignments are neater and they are able to do assignments without the full guidance of the teacher. Apart from that, there is also healthy competition among them in completing all teacher assignments. The researcher placed some of the student's work on the appendix included in this study.

## 5. Study Reflection/Discussion

Findings of the study showed that *Indahnya Solat* activities have improved students' discipline in terms of behaviour and increasing the percentage of attendance to school. Pupils are increasingly fond of going to school and studying together. The aspect of attendance is very important in the efforts of teachers to educate and form successful human capital of the world and the hereafter.

Apart from that, these best practices have also helped teachers in the management of students in the classroom. For example, students are diligent in completing any assignment even if it is not completely 'complete'. The attitude of volunteering in helping friends also exists among them without being told by the teacher. This pure effort clearly indicates the occurrence of positive behavioural changes and shaping their social skills. This best practice should be practiced not only at SEN pupils, but throughout the primary level as a whole. The approach towards spirituality is indeed very helpful in shaping personality of whom to become a superior student.

## 6. Proposed Future Studies

The best practice of *Indahnya Solat* has positive impact on SEN pupils. Among other studies in the formation of student behaviour that can be carried out are the Mentor Mentee (Mentor and Prodigy) program among SEN pupils, teaching prayer collaboratively with the subject of

Islamic Education, Smart Prayer Camp and Implementation of *Dhuha* (post dawn prayer) Prayer Activities with students. This study can also be done with mainstream and preschool students. This noble practice should be carried out continuously in shaping the personality of the student.

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## Appendices

### Appendix 1

Observation Form Reducing Disruptive Behavior  
Sample 1.

Borang pemerhatian mengurangkan tingkah laku Diskruptif MBK PPKI 3 Bellatrix  
SKLB

Nama : \_\_\_\_\_

BIL	KETERANGAN TINGKAH LAKU	CATATAN									
		1	2	3	4	5	6	7	8	9	10
Kelakuan Negatif											
1.	Merosakkan harta benda sendiri /orang lain	✓✓	✓✓	✓✓	✓	✓	✓	✓	✓	✓	✓
2.	Cepat berkelahi/bertindak	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
3.	Cepat marah/meradang										
4.	Mengacau/menguasai orang lain	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
5.	Mencederakan orang lain										
6.	Panas baran										
7.	Perlakuan negatif berlaku tiba-tiba										
Kelakuan positif											
1.	Menghormati rakan dan guru	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
2.	Mendengar arahan guru dan rakan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.	Bertolak ansur										
4.	Membantu rakan dan guru										
5.	Menyiapkan kerja sekolah										
6.	Mudah memaafkan	✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
7.	Bertutur dengan sopan										

Sample 2.

BIL		KETERANGAN TINGKAH LAKU	CATATAN									
			1	2	3	4	5	6	7	8	9	10
		Kelakuan Negatif										
1.		Merosakkan harta benda sendiri /orang lain										
2.		Cepat berkelahi/bertindak	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	
3.		Cepat marah/meradang	✓✓	✓✓	✓	✓	✓	✓	✓	✓	✓	
4.		Mengacau/menguasai orang lain	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
5.		Mencederakan orang lain										
6.		Panas baran										
7.		Perlakuan negatif berlaku tiba-tiba										
		Kelakuan positif										
1.		Menghormati rakan dan guru	✓	✓	✓	✓	✓	✓	✓	✓✓	✓✓	
2.		Mendengar arahan guru dan rakan	✓	✓	✓	✓	✓	✓	✓✓	✓✓	✓✓	
3.		Bertolak ansur					✓	✓	✓	✓✓	✓✓	
4.		Membantu rakan dan guru	✓	✓	✓	✓	✓	✓	✓✓	✓✓	✓✓	
5.		Menyiapkan kerja sekolah	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
6.		Mudah memaafkan					✓	✓	✓	✓✓	✓✓	
7.		Bertutur dengan sopan				✓	✓	✓	✓	✓✓	✓✓	

Sample 3.

BIL	KETERANGAN TINGKAH LAKU	CATATAN									
		1	2	3	4	5	6	7	8	9	10
1.	Merosakkan harta benda sendiri /orang lain										
2.	Cepat berkelahi/bertindak	✓✓ ✓✓									
3.	Cepat marah/meradang	✓✓ ✓✓									
4.	Mengacau/menguasai orang lain										
5.	Mencederakan orang lain										
6.	Panas baran	✓✓ ✓✓									
7.	Perlakuan negatif berlaku tiba-tiba										
<hr/>											
	Kelakuan positif	1	2	3	4	5	6	7	8	9	10
1.	Menghormati rakan dan guru	✓✓ ✓✓									
2.	Mendengar arahan guru dan rakan	✓ ✓									
3.	Bertolak ansur					✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
4.	Membantu rakan dan guru	✓ ✓									
5.	Menyiapkan kerja sekolah	✓ ✓									
6.	Mudah memaafkan			✓ ✓							
7.	Bertutur dengan sopan	✓ ✓									

#### Sample 4.

## APPENDIX 2.

### Interview Questions

No.	Interview Questions of <i>Indahnya Solat</i> activity.
1	<i>Adakah kamu suka belajar di dalam kelas ini?</i>
2	<i>Apakah perkara yang kamu tidak suka semasa belajar di kelas ini?</i>
3	<i>Sebagai umat Islam berapa kali solat fardhu dalam sehari?</i>
4	<i>Adakah kamu pernah melihat orang bersolat dan membaca ayat-ayat bacaan dalam solat?</i>
5	<i>Adakah kamu suka membuat aktiviti pembelajaran di dalam kelas seperti menulis dan mewarna?</i>
6	<i>Adakah hasil tugas kamu cantik dan kemas?</i>

### Findings of Interview Session Before *Indahnya Solat* Activity

No.	Interview Questions of <i>Indahnya Solat</i> Activity	Sample 2	Sample 3	Sample 4
1	<i>Adakah kamu suka belajar di dalam kelas ini?</i>	<i>Tak suka sangat</i>	<i>Biasa sahaja</i>	<i>Suka</i>
2	<i>Apakah perkara yang kamu tidak suka semasa belajar di kelas ini?</i>	<i>Banyak kerja</i>	<i>Kawan bising</i>	<i>Kawan kacau</i>
3	<i>Sebagai umat Islam berapa kali solat fardhu dalam sehari?</i>	<i>Tak tahu</i>	<i>Emmm tiga</i>	<i>Lima kali</i>
4	<i>Adakah kamu pernah melihat orang bersolat dan membaca ayat-ayat bacaan dalam solat?</i>	<i>Pernah</i>	<i>Pernah</i>	<i>Pernah</i>
5	<i>Adakah kamu suka membuat aktiviti pembelajaran di dalam kelas seperti menulis dan mewarna?</i>	<i>Suka sikit</i>	<i>Tak suka</i>	<i>Suka</i>
6	<i>Adakah hasil tugas kamu cantik dan kemas?</i>	<i>Tak cantik</i>	<i>Tak cantik</i>	<i>Cantik sikit</i>

**Findings of Interview Session After *Indahnya Solat* Activity**

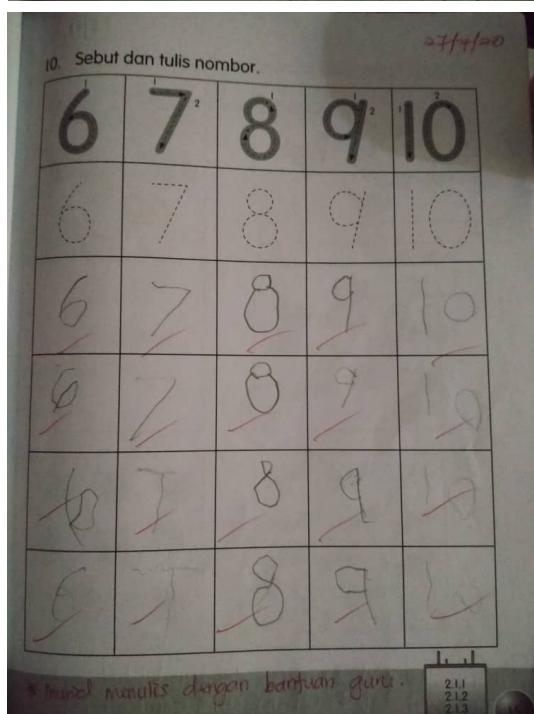
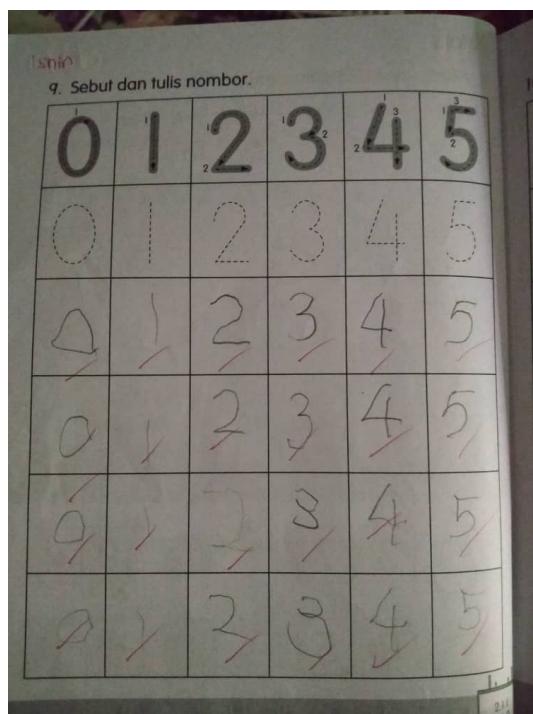
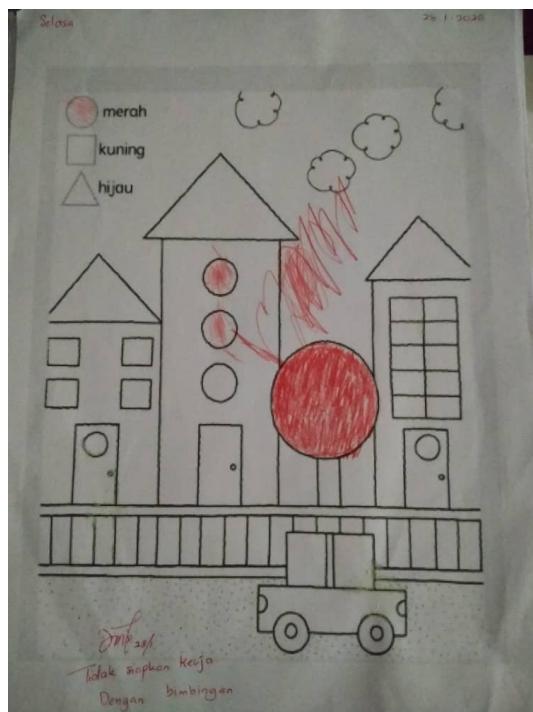
Bil	Interview Questions of <i>Indahnya Solat</i> Activity	Sample 2	Sample 3	Sample 4
1	<i>Adakah kamu suka belajar di dalam kelas ini?</i>	<i>Suka</i>	<i>Emm suka</i>	<i>Suka</i>
2	<i>Apakah perkara yang kamu tidak suka semasa belajar di kelas ini?</i>	<i>Tak tau</i>	<i>Suka.. Eh apa dia? Tak ada</i>	<i>Tak ada</i>
3	<i>Sebagai umat Islam berapa kali solat fardhu dalam sehari?</i>	<i>Lima</i>	<i>Lima waktu</i>	<i>Lima</i>
4	<i>Adakah kamu pernah melihat orang bersolat dan membaca ayat-ayat bacaan dalam solat?</i>	<i>Pernah. Di surau</i>	<i>Tak, tak pernah. Eh pernah. Kat masjid</i>	<i>Pernah. Di surau</i>
5	<i>Adakah kamu suka membuat aktiviti pembelajaran di dalam kelas seperti menulis dan mewarna?</i>	<i>Suka</i>	<i>Suka</i>	<i>Suka</i>
6	<i>Adakah hasil tugas kamu cantik dan kemas?</i>	<i>Emm cantik</i>	<i>Emm kemas</i>	<i>Cantik sikit-sikit</i>

## **APPENDIX 3.**

### Level of Attendance (APDM)

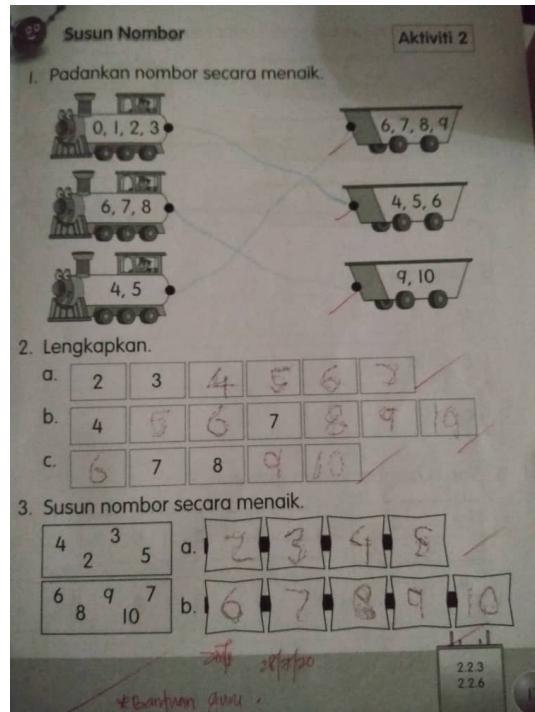
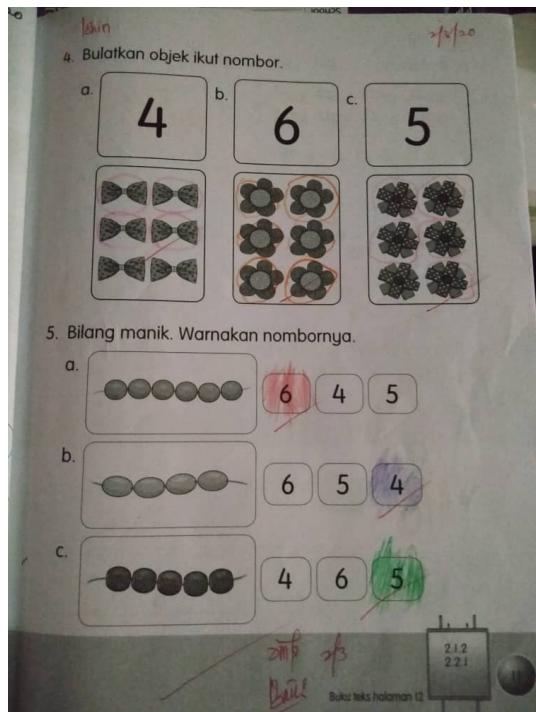
## APPENDIX 4.

Students Work Results.  
 Results from January 2020.



Results from February 2020.

Results from March 2020.



# ENHANCING STUDENTS' INTEREST IN TEACHING MATHEMATICS BY USING QUIZIZZ APPLICATION DURING MOVEMENT CONTROL ORDER (MCO)

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## ABSTRACT

Nowadays, online game like Quizizz is one of the alternative methods in interactive teaching and learning. This study aims to see the effectiveness of the use of this method to increase the students' involvement and mastery in the topic 'Whole Number'. The implementation of this method carries out during home-based learning sessions during the Movement Control Order (MCO), involving 8 students with learning disabilities from SMK Bukit Sentosa. The participants were selected based on the simple random sampling. The researchers chose the participants randomly without looking at any listed criteria. In the early stage, teachers find that students are not interested in doing offline assignments where students' mastery of learning topics are also very weak. The findings of the study show that there is increasing in students' involvement by 50% based on the comparison of results made through pre test and post test. In addition, the research findings from the students' feedback also show a tendency and interest in the method use. This method is also easing the teacher's duty to prepare and monitor assignments given to students more effectively.

**Keywords:** Quizizz, Learning Disabilities, Whole Number, Movement Control Order (MCO), Interactive Learning.

## 1. Introduction

Covid-19 pandemic had been spread almost all countries in the world which effected the human lifestyle drastically. This phenomenon also effected the Malaysian education system. Therefore, the Malaysian government had declared the Movement Control Order (MCO) from 18 March 2020 under the Prevention and Surveillance of Infectious Diseases Act 1988. The duration of the Movement Control Order (MCO) had been extended to several phases, including the Conditional Movement Control Order (CMCO) and the Recovery Movement Control Order (RMCO) to curb the spread of Covid-19. In the content of the Movement Control Order (MCO), there are six guidelines. One of the suggestions from the United Nations Educational, Scientific and Cultural Organization (UNESCO) is to close all the educational institutions included nurseries, government and private schools, primary and secondary schools and pre university (Ministry of Health Malaysia, 2020).

The guideline had been designated by the Malaysian Ministry of Education (MOE) in 2020 addressed that the teacher was not allowed to go to school during the movement control order (MCO) and all the task needed to be carried out at home. Teachers were encouraged to guide the students through the communication medium and electronic gadget that can be accessed by the students. One of the applications suggested by the MOE; Quizizz application which published in the Google Classroom. After the MCO and the school closure announcement, it was impossible to carry the face-to-face teaching and learning process as well as to carry out the summative assessment like writing assessment or final semester examination due to the shortage of time to complete the planned syllabus. The cancellation of final examination introduced to the new way of students' achievement assessment. Therefore, teachers were flexible to check the task given to the students. Quizizz application was the interactive way that had been introduced to the teachers compared to the traditional of way of teaching and learning to access the students clarified by Araujo and Carvalho (2017).

Covid-19 pandemic changed the normal to new norms in the educational system, including home-based learning and learning through different platform. Ministries of Education (MOE) came out the guideline of the implementation of teaching and learning during Movement Control Order (MCO) to ensure the students' learning proses did not disrupt. Ministry of Education (MOE) had taken initiative to publish the module of teaching and learning at home version 2 and the home-based learning timetable module dated 2 February 2021 which aimed to give the guideline for teachers to carry out the structured home-based learning.

During the Covid-19 pandemic, a major challenge faced by the researchers was the students' participation during home-based learning. Researchers found that students did not interested to do the offline task given by the teacher. Students did not motivate to do the exercise given by teacher through WhatsApp. Students did not commit to do the given exercise which led them to the weak understanding of the topic. In this research, the researchers chose the Quizizz application as a teaching aid in enhancing the mathematics skill specifically in the topic 'Whole Number'.

## 1.1 Background of study

Najib, Abu Bakar and Othman (2017) stated that the education system would be changed according to the modernization and development of technology that change globally. The use of technology in online learning had been practicing all over the world which to establish the variety in teaching and facilitating (S. Zakaria, M. Hamzah, and K. Abdul Razak, 2017), (Z. Mahamod, and N. Mohamad Noor, 2011), (R. Mohd Zain, dan M. Che Noh, 2016). Moreover, most of technology prepared the routine question and did not give the opportunity to the students to solve the non-routine problem exemplified by Lee and Chen (2009). The technology can help students in upgrading their creativity in solving the non-routine problem by introducing on digital game in learning.

The game-based learning is one the online game where as the combination of play and learn process among the students. Play is happiness in early child education where while playing, they can experience in learning (Ad Norazli & Jamil, 2014; Thomas & Brown, 2007). The fun in playing resulted the students did not feel they were learning. This situation enhanced the students' skill and motivation to attract the students' interest and made the learning process became more meaningful and effective (Perrotta et al., 2013). The full concentration in learning helped the students to enhance the learning strategy and the students' ability (Chee, 2011, Papastergiou, 2009). The game is one of the methods that can develop creativity and interest in Mathematics. The use of online game without the integration of effective learning method did not be able to produce the creative and critical

thinking students (O’Neil et al., 2005). It can reduce bored and tired feeling specially in solving Mathematics problem. The game-based learning is the method of teaching and learning outside and inside the classroom which emphasized learn while playing principle. The problem solving in Mathematics can be showed through the game and simulation activity, especially the problem involved in the daily routine. The simulation used to explain the answer or solve the mathematics oftenly (Nooriza, 2013). The previous research involved in game carried out by Thomas Malone (1981), stated that there are three elements that can motivate the studnets; fantasy, challenge and feeling of curiosity (Hsiao et al., 2014). Prensky (2001) supported that game was the effective way in learning because of two important factors which are interactive and attract the students’ attention.

The reasons game can be integrated into education;

- i) The motivation to students because students assumed that Mathematics was a boring subject. Teaching mathematics involved teaching and complete the task. Besides, the use of game in learning mathematics will establish the interesting and fun environment. Students will be more ready and focus on learning as the subject was interesting (Horizon Report: 2014 K-12 Edition, 2014). Game also encouraged the students to compete among themselves as the factor to motivate the students. While playing, students did not realise that they were learning as well.
- ii) In the game, students can less worry towards mathematics as it was considered as difficult. Besides, students were able to their friends’ level of achievement through the game. From that, there was a healthy competition among students to do something good (Hsiao et al., 2014; Sayed Yusoff et al., 2014).
- iii) The use of game in learning mathematics can help the students to develop their better understanding in concept and mathematics application (Sayed Yusoff et al., 2014).

In teaching and learning the Whole number, the interesting and conducive learning environment was necessary. Thus, students needed to acquire the Whole number topics to ensure they can understand the next topics. Hence, this research can be a reference to the teachers to change and vary the teaching and learning technique and suitable to the students’ environment. In result, the teacher can change the teaching technique from the teacher centered to the student centered. The use of Quizizz in this research can establish an effective and collaborative learning among the students.

The interactive learning method such as Quizizz is one of the methods to attract the special need students’ interest to participate in home-based learning. The interactive learning can be achieved through the use of the internet as a network to get the information and knowledge at your fingertips and save time. Besides, the multimedia application in education will develop a new concept of education which is a combination of education and entertainment approaches known as edutainment clarified by Jamalludin & Zaidatun (2000). Norasmahani Hj Nor (2015) explained that the technology-based teaching and learning process covered the wider objective and used the interactive approach in the self-learning process. Teachers did not deliver the information to the students otherwise the students worked hard and move actively to obtain the information and knowledge. In the student-centered learning, students used the experience as the guideline in learning.

Quizizz application was developed by Ankit Gupta and Deepak Joy Cheenath in 2015 in Bangalore, India. This application was created to have various selections of settings suitable for a variety of learning purposes. Based on the previous research by Z. Fang (2019), Quizizz can be designed in various formats including right or wrong questions, objective questions, and open-ended questions which teacher can construct their own questions or adapted the provided questions. As the questions were ready, the teacher started the quiz by giving the game code to the students. Each student joined the game by

entering the game code in a Quizizz application through their own smartphone stated by Y.M. Sou, Y.J. Sou and Z. Adam (2018).

## 1.2 Problem Statement

During the movement control order (MCO), the biggest challenge faced by the researchers were the students' participation in teaching and learning at home. Researchers acknowledged that the students did not interested to do the offline task given by the teacher. Students did not motivate to do the exercise given by teacher through WhatsApp. Most of the students did not commit to do the task given as the weak understanding of the topic. Smith and Ferguson (2005) explained that one of the reasons less students' participation in online learning mathematics was due to the improper situation to teach and learn mathematics. Meanwhile, the problem solving was important in mathematics. Based on researchers' previous experience, teaching mathematics was not suitable to be taught through online because the students did not be able to interact with the teacher directly. The students were more inclined to ask the question directly and the teacher would explain it in mathematical terms. Jaggars (2014) opted that learning mathematics through online was more challenging where there were some environments, learning factors such as motivation, feeling isolated and less support in online learning.

The internet networking was one of the issues arises towards the online learning (Nor Shela & Mohd Shafie, 2020). Hence, the internet network in Malaysia was upgrading and able to subscribe from the telco companies in Malaysia (Aziz,2015). Therefore, there was no accuse in online learning. There were problems faced by the students in online learning as less self-discipline, suitability of learning material, facility in internet networking, and the conducive learning environment (Bao, 2020). Students who were able follow the online learning for the first time as they were isolating themselves from others. This was due to the new environment and not used to the online learning community (Taeho & Richardson, 2015).

In this research, the researchers chose the Quizizz application as the teaching tools in enhancing the mathematical skill especially the Whole number topic. This research purposed the effectiveness the use of Quizizz application that had been used by 4.3 million users and 100,000 uploaders in the smartphone. The use of Quizizz as the teaching tools is one of the efforts in enhancing mathematics skill among the students and for the teacher to create the interesting teaching and learning process. The researchers proposed the effectiveness of Quizizz application in learning mathematics.

## 1.3 Target

This research participated by 8 students in KSSM Form 1 class, Special Education Integration Programme at SMK Bukit Sentosa.

## 1.4 Research Objective

This research aimed to see the effectiveness of Quizizz application in attracting students' interest in teaching and learning process in mathematics. Specifically, the research objectives were:

1. Enhancing the Whole Number basic skills.
2. Encouraging the use of technology among the special education students.
3. Easing the teacher in preparing, evaluating and reporting the students' achievement.

## 2.0 Research Methodology

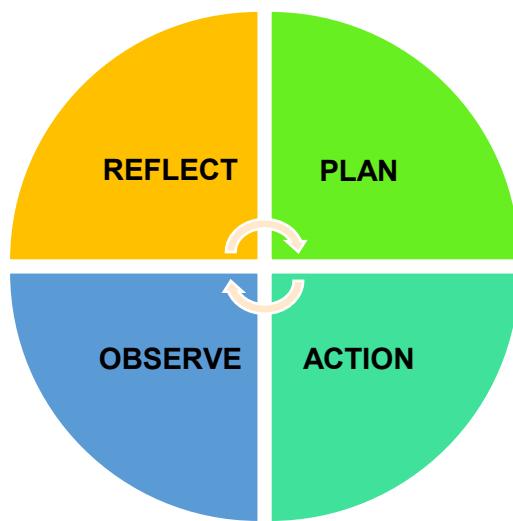
### 2.1 Research Design

This research proposed the Kemmis and Mc Taggart action research model (1988) (Diagram 1). It was a quantitative research. The initial survey had been carried out through data analysis, interviews, observation and guided exercises. The participants were selected based on the simple random sampling. The researchers chose the participants randomly without looking at any listed criteria. The use of Quizizz suggested in this research which had been practiced by the researchers during Movement Control Order (MCO).

### 2.2 Research Procedure

Researchers reflected from the offline task and chose 8 students to carry out the intervention. The initial survey had been done by using the exercise to measure the level of students' understanding in a Whole Number topic.

Figure 1: Kemmis and Mc Taggart model (1988)



### 2.3 Actions

#### 2.3.1 Pre test

The researchers carried out the pre test by giving the task to students after the end of home-based learning process. The task was given as a remedial task on topic Whole Number. The students needed to complete the task and submitted the answer to the teacher. The students can copy the questions in the exercise book or can print it out if there was a printer. While the researchers were collecting the data, there were some problems, which are:

- i. Students have not submitted the answer sheet to the teacher
- ii. The teacher did not get the feedback from students about their understanding of the topic.
- iii. Difficulty in recording the students' work by the teacher.

### **2.3.2 Post Test**

After the researchers checked the answer from the post test, the researchers did not return the answer sheet to the students and researchers did not discuss the answer with the students, but the researchers had been introduced the answering question technique by using Quizizz application. Researchers constructed the same a set of questions by using the Quizizz application in the quiz form. After finished constructing the questions, researchers started the quiz by giving the game code to the students through the class WhatsApp. The researchers asked the students to answer the Quizizz and guide them to use it. Before the researchers guided the students to use the quiz application, researchers sent the user manual through the class WhatsApp and explained thoroughly about the use of this application.

The steps on using the Quizizz application for students:

- i. Students can use the Google Classroom account at [Quizizz.com](https://www.quizizz.com).
- ii. Students logged in, the link given by the teacher.
- iii. Students wrote their full name in the space provided.
- iv. Students answered the quiz.
- v. After finishing it, the provided marks of students showed on the screen.

### **2.3.3 Students' Feedback**

Researchers asked the students to reflect on post test analysis data as they implemented through their smartphone and WhatsApp as individually. Students were encouraged in response on their view about the intervention.

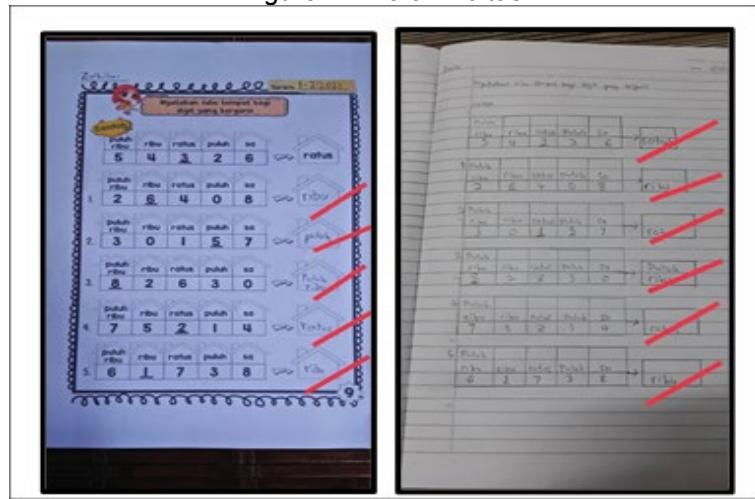
### **2.3.4 Observation**

During the learning process through the Quizizz application, researchers made an observation through the report generated from the researcher's Quizizz account. Researchers can trace the students' participation in the class, but researchers can trace the number of players in the quiz, the time allocated to answer the quiz, the total marks, the percentage of the corrected answers and number of incorrect answers with the students. Through this application, researchers monitored and recorded all the proofs and students' work as the future purposes. The report could be downloaded in the form of Microsoft Excel and can be printed.

## **3. Research Findings and Discussion**

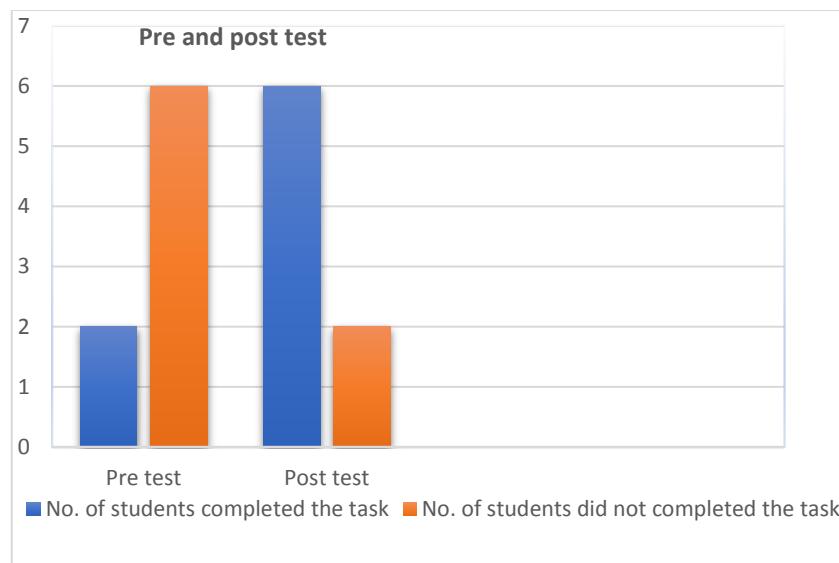
The research findings from the pre test showed that, only two students submitted the task given. Figure 2 showed the students' exercise. Both students used the different ways which are print out the exercise and copy the exercise in the book. Both of them screen shot the task and sent it through the WhatsApp. Researchers checked the task, but the book did not return to the students until the intervention. Researchers did not know the status of the unsubmitted task by six students, whether the task completed or vice versa.

Figure 2: The offline task



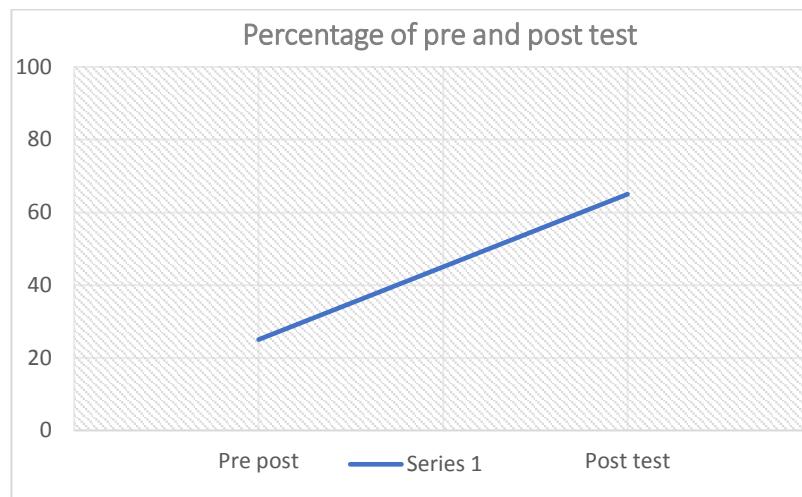
The research findings found that the number of students' participation increased from 2 to 6 students who completed the task after the intervention. It showed that there was increasing by 4 students after applying the Quizizz. It showed that the same questions, but developed it in the game based portrayed there was increasing by 4 students after applying the Quizizz. Figure 3 indicated the differences between pre and post test.

Figure 3: The graph indicated the differences between pre and post test



In the percentage, it increased by 50% where there were 25% students answered the offline task compared to 65% students answered the task by using the Quizizz. Figure 4 clarified the increment of students' participation. From 8 students, only 2 students did not give the response in pre and post test.

*Figure 4: The graph clarified the increment of students' participation.*



The result of students' feedback who be able to complete the question on Quizizz application, the researchers obtained that 100% students gave the positive feedback where they experienced the interesting and meaningful learning from it. The students faced some constraints to complete the task which is no printer, lazy to copy the exercise, took a lot of time to complete the task and not conducive learning environment. But, after the intervention, their interest in learning had been increased as it applied the game-based question which it helped them easy to understand and can be answered repeatedly as it did not take a long time to answer and compete among themselves. Moreover, they wanted to do all the tasks in the Quizizz platform in future as it was fun, meaningful and new way of learning from them. Table 1 supported the number of students answered the questions through Quizizz.

*Table 1: The data demonstrated the number of students completed the question through the Quizizz application*

Players						
Rank	Player Name	Avg. Time	Score	Accuracy	Correct / Total	
1	Ong Jia Sheng	15 secs	16090	● 100%	16 / 16	██████████
2	Syed Muhd Al-Hafiz	7 secs	15170	● 100%	16 / 16	██████████
3	Khairul Izany****	11 secs	14050	● 100%	16 / 16	██████████
4	Danish Shazuan	10 secs	11440	● 81%	13 / 16	███████
5	zulhilmi*	12 secs	11000	● 75%	12 / 16	██████
6	aidil akmal	20 secs	10610	● 81%	13 / 16	███████

Based on the table above, it showed the ranking, the player, the time allocated, marks, accuracy and the number of wrong and right answers. Table 1 demonstrated the information obtained. Ong Jia Sheng was the first place as he got the full marks even though there was another student answered it faster compared to him. Besides, he answered it 100% correctly. Unfortunately, Syed Muhd Al-Hafiz was the fastest student completed the

questions, but his mark was lower compared to Ong Jia Sheng. The marks obtained by the number six scorer were the lowest although he answered all questions correctly compared to the number five scorer. The data expounded that the total marks obtained was more important compared to other data.

*Table 2: The data collected from Quizizz application*

Participant names	Score	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
		63%	68%	53%	47%	58%	63%	53%	63%	58%	37%
Ong Jia Sheng	16090 (100%)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Syed Muhd Al-Hafiz	15170 (100%)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Khairul Izany	14050 (100%)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Danish Shazuan	11440 (81%)	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
zulhilmi	11000 (75%)	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓
aidil akmal	10610 (81%)	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗

Table 2 demonstrated the elicited data obtained from each question. In the quiz, the researchers prepared 10 questions with the multiple-choice answers. The data generated from Quizizz helped teachers to evaluate whether the given questions helped the students to understand the topic. If many students answered it wrongly, it showed that the students did not understand it or the questions did not suitable for their level. From the diagram, Aidil Akmal got two incorrect questions; question no 7 and no 10 while there were two students answered questions no. 4 wrongly. Question no 1,2,3,6,8 and 9 had been answered correctly by all students. From the diagram, there were three students answered it correctly, but the marks were differentiating due to the time taken while answering. Ong Jia Sheng got the first place with the highest marks.

#### 4. Conclusion and Suggestion

In the conclusion, the experience in using online Quizizz changed the students' behavior and interest in teaching and learning at home. It showed the change in students' participation. The research findings were quite similar to the research done by Hussain, Tan and Idris (2014). In their research, they agreed to the effectiveness of gamification towards special need students in mathematics subject specially to understand the concept and problem solving for the difficult questions. Fortunately, it effected to the positive students' achievement in academic. Gamification is the catalyst for the students to participate in learning activities and injected enthusiasm among the students to be more excellent in academic achievement explained by Ong, Chan and Koh (2013).

The application motivated the online classroom environment became more dynamic as the teacher can monitor the students' participation through the interactive quiz explicated by Fang (2019) because each access student would be representing an avatar image included the students' name (D. C. Boulden, J. Hurt, and M. Richardson, 2017). Teacher traced the number of players in the quiz. Besides, the previous research indicated that the Quizizz application can increase the students' learning ability (Y. M. Sou, Y. J. Sou, and Z. Adam, 2018), increased the students' attention in teaching and learning process (Y. Basuki, and Y. Hidayati, 2019), reduced the anxiety (M. D. Pitoyo, 2019), and portrayed the positive

implication in the students' participation in class (D. C. Boulden, J. Hurt, and M. Richardson, 2017).

Most of the students explained that the use of Quizizz application were attractive as the quiz application had an interesting screen with the various colours. The use of an avatar image and music gave the same experience with the real computer application. The Quizizz application also can soar the students' understanding because the students can answer it repeatedly until they understand it.

Even though the research findings opposed to a few researches about the use of Quizizz. It showed that there was a similar achievement level and no significant improvement. Research done by Prasetyo (2016) explained about an application which can help in difficult with learning Al-Quran and it proved that this method helped to solve this problem. Analisa et al. (2015) elaborated that the process of teaching and learning by using Web 2.0 application did not achieve the meaningful learning because of the poor internet connection in the campus.

The use of application was not limited to a Whole Number topic only though it can be applied to all subjects as it can be created in various format, including wrong or right questions, objective questions, and open-ended questions to be easier and effectively. It supported by Ku (2014), Hsiao et al. (2014), Yang (2012), Hwang et al. (2014), and Eow et al. (2010) the use of Quizizz in teaching cannot be used in mathematics only, but can be implemented in other subjects and various levels of teaching.

Thus, the researchers suggested to the teachers to use the game-based application such as Quizizz in learning and facilitating process during Movement Control Order (MCO) because it gave a good impact to students and teachers. Apart from that, it can be used as an additional reinforcement in evaluating the students' achievement which suited to the teachers' need. The students' participation can be seen through the data. The Quizizz helped the researchers to evaluate the students' achievement because it was more interesting, easy and had the collaborative elements in constructing questions.

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# EFFECTIVENESS OF BANKNOTES BIG BOOK TOWARDS LEARNING MATHEMATICS FOR STUDENTS IN SPECIAL EDUCATION PROGRAM

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## ABSTRACT

It is found that a large number of students in special education program in Malaysia struggled in recognising and using money in their daily life. Medical issues such as cerebral palsy, ADHD and others have a large impact to the educational development of these children. The researchers as teachers have found out that children are more responsive to colour, shapes and games. Hence, Big Book - Wang Kertas Malaysia is a teaching aid produced by the researchers to overcome the issue of unable to identify and use money from the value of MYR1 to MYR100 for students in special education program at Sekolah Kebangsaan Bukit Beruntung, Rawang, Selangor. This study was conducted quantitatively to collect the required data through worksheets, pre-tests and post-tests. The researcher conducted a survey involving a total of 30 students from special education class who study Mathematics using traditional learning strategies such as textbooks and exercise sheets in the topic of Money. After that, the same learning topic was taught with the addition of Big Book – Malaysian Banknotes. Before the intervention using the Big Book, these students are slow in learning and unable to pick up the lessons taught to them. However, after the inclusion of Big Book in their learning program, the findings of the study showed that 70% of Special Education students with Learning Disabilities are able to master the skills taught. They are also able to apply the concepts of Mathematics in daily life. The use of teaching aids Big Book - Malaysian Banknotes is expected to benefit students with special learning needs.

**Keywords:** Malaysian banknotes, teaching aids, mathematics, special education, money

## 1. Introduction

### 1.1 Background of Study

Effective Learning and Facilitation (PdPc) requires a teacher to use his or her creativity and build effective strategies to deliver a lesson. The use of teaching aids in PdPc is a method that can channel information related to the subjects taught more clearly and effectively. Similarly, in conveying mathematical ideas and information, teachers can use a variety of approaches. One method is to use teaching aids.

Generally, a pupil with special educational needs (SEN) means a child certified by a medical practitioner, optician, audiologist or psychologist as a pupil with visual impairment, hearing impairment, speech disabilities, physical disabilities and learning disabilities or any

combination of disabilities and problems mentioned (Educational Regulations (Special Education), 2013). Students with special educational needs differ from normal pupils in terms of mental, sensory, communication, social behaviour, or physical (Jamila, 2005). This difference results in a modified form of education given to these students so that they can develop their abilities. Appropriate teaching aids are needed by students with SEN, especially in helping them understand certain concepts. The construction of teaching aids that are accurate and the proper way to use them is expected to improve the achievement of students with SEN in mastering a subject skill (Siti Fatimah & Mustafa, 2018).

## 1.2 Problem Statement

Basic knowledge of Malaysian banknotes in Malaysian Ringgit (MYR) is vital for special education needs (SEN) students with learning difficulties because they will use money eventually in their daily activities. These students have trouble recognising banknotes and their value as well as proper ways to use them. This is crucial, especially when they buy something regardless of in the school or outside the school.

According to the survey done earlier in this study, these children with special educational needs are unable to associate the colour of the banknotes with their values. Thus, making it hard for them to engage in trading activities. Some of them only recognise one or two banknotes since they are familiar with it. For example, MYR 1, 5 and 10 are quite easy for several of them to recognise; since these banknotes are familiar to children. For MYR 50 and 100 however, would be quite an arduous task for them to comprehend as these banknotes are almost alien to them. They are not accustomed to holding a piece of MYR 50 or 100 freely in their hands.

A number of the students are aware that money is used for buying items. However, they do not know that money is something that must be saved for future usage. As we all familiar with the saying, “money does not grow on trees”; these children however, do not understand the concept of frugality and saving. Hence, they do not know the proper way to save money. Saving money for future use is vital as we do not know what lies in front of us. Having a piggy bank or savings would be a great benefit in times of need.

To overcome this problem, teaching aids are used in learning and facilitation (PdPC). Teaching aids are not a new thing or method in education. Hence, teachers need to wisely choose the most appropriate teaching method for their students because it helps the teacher provide meaningful and interesting teaching materials and develop the talents and potential of students in achieving the objectives of the National Education Philosophy (Ee Ah Meng, 1997). Thus, as a teacher, it is necessary to take a paradigm shift in teaching methods other than relying solely on writing and explanation only as it is uninteresting and dull for these students. Pupils can do various activities provided in the teaching aids created and help understanding and meaningful learning.

## 1.3 Research Objective

This study aims to improve the skills of recognising and using MYR 1 to MYR 100 banknotes. In particular, the objectives of this study are to:

- a. Improve the skills of recognising and naming MYR 1 to MYR 100 banknotes.
- b. State the value of MYR 1 to MYR 100 correctly and accurately.
- c. Solve problems involving addition and subtraction operations without or with regrouping.
- d. Apply the skills of using banknotes in daily life.

## 1.4 Scope of the Study

This study will focus on the effectiveness of using Big Book – Malaysian banknotes towards learning Mathematics for students in Special Education program. This research will focus mainly on the topic of Money in Mathematics subject. The reason for this is because a large number of these children are not familiar with Malaysian banknotes and how to properly use them in trading activities.

## 1.5 Significance of the Study

This study will benefit two major parties, namely the students with special educational needs and the teachers who teach these students.

### 1.5.1 Special Educational Needs Students

It is undeniable that when these students reached a certain age, they will need to face the real world and be able to interact with the society just like any other individuals. However, it is detected that some of these students lack the ability to differentiate money and banknotes. It is a great relief that the teachers realised these issues in its beginning stage, while they are still young. Therefore, this Big Book will serve as a vital learning material so that they can be kept on track and being on the same level with other children.

### 1.5.2 Special Educational Needs Teachers

For teachers, getting a student to understand a concept at an early age is vital in order to get them move on to next learning materials. If the students are unable to understand the concept of numbers, it will be difficult for the teachers to move on to another topics involving numbers such as addition or subtraction. Therefore, the Big Book – Malaysian Banknotes is there to ease the burden of the teachers in educating these young minds. The concept of understanding money will be much easier using this learning aid. The fun learning incorporated in this Big Book will make the teaching of the topic Money exciting and joyful.

## 1.6 Teaching Aid: Big Book - Malaysian Banknotes

Teaching aid: Big Book - Malaysian Banknotes was produced by the researcher to facilitate the teaching and learning of Mathematics for special education needs students with learning difficulties. This initiative is created using discarded materials such as boxes, gift wrappers, coloured papers and fancy paper from scrapbooks that are no longer used, as well as purchased materials. The cost of producing the Big Book - Malaysian Banknotes is only MYR 60.

The Big Book - Malaysian Banknote has two parts. The first part is a note in the form of a pop-up and coloured images that attract students' attention. The second part is exercise. The exercise is in the form of pop-ups that are gradual and progressive. The exercise given is on the elements of recognising, naming, addition and subtraction operations, as well as problem-solving.

Figure 1: Cover page of the Big Book – Malaysian Banknotes



Figure 2: Part 1 – List of Malaysian Banknotes



Figure 3: Part 1 – Pull-tab origami envelope card containing Malaysian banknotes



Figure 4: Part 1 – Pull-tab origami envelope card containing Malaysian banknotes



Figure 5: Part 2 – Fill-in-the-blanks exercises based on given notes



Figure 6: Part 2 – Jigsaw and slide puzzles to incorporate fun learning



Figure 7: Part 2 – Addition and subtraction exercises involving money in the Big Book

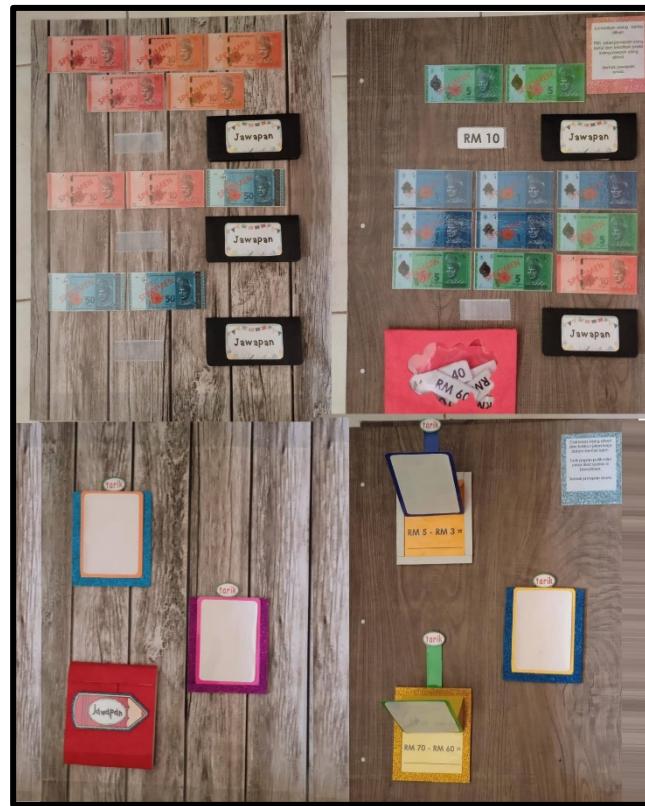
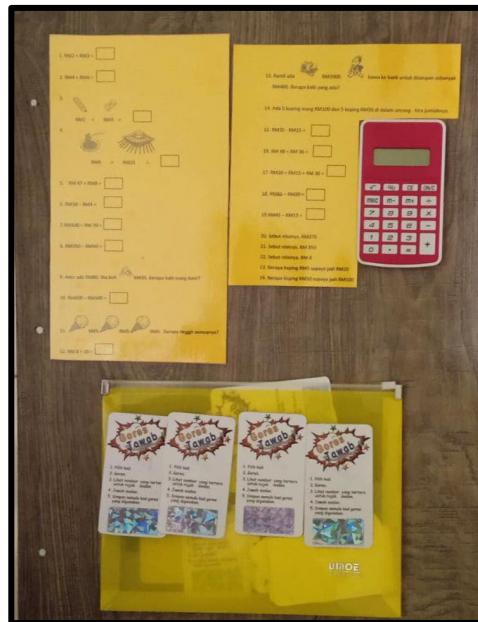


Figure 8: Part 2 – Maze activities to incorporate fun learning



Figure 9: Part 2 – Problem-solving questions involving money in the Big Book



## 2. Literature Review

### 2.1 Teaching Aids

Norzainariah binti Abu Hassan, in her writing entitled “Usability of Teaching and Learning Kits to Improve Student Performance”, stated that teaching aids could be divided into two categories, namely the electronic and non-electronic category. Teaching aids categorised as electronic such as television, radio, video projection, slides from projectors, and computer-aided tools. Meanwhile, teaching aids classified as non-electronic are magazines, models, journals, pictures, and even flashcards related to the teaching materials.

According to Amir Hasan (2002), in a classroom, each individual has different psychology and intellectual abilities from each other. Therefore, the planned teaching must be appropriate, organised (according to the level of students) and supported (with teaching aids) to stimulate the development of individual potential to the maximum level. Therefore, appropriate teaching aids must be increased to stimulate the development of an individual's potential to the full and improve the quality of teaching and learning in schools. It may also produce students who can contribute to national development.

In general, teaching aids help teachers in the teaching process, and they are not limited to textbooks, whiteboards or pictures. These teaching aids include materials that can be touched, smelled, felt, seen, read, narrated and heard. Teaching tools are anything that is experienced by students (Kamaruddin Hj. Hussin, 1986). Atan Long (1981) divides teaching aids into three groups: hearing aids, visual aids, and audio-visual aids. While Hanapiah Sudin (1979) classifies teaching aids into two, namely software and hardware materials.

Atan Long (1982) dictates that teaching aids consist of various materials. Material can be conveyed in multiple ways. For example, a material may be published in a book, a chart or placed on a slide and projected onto a screen. The delivery tools are called ‘teaching aids’ based on the above opinion. Kamaruddin Hj. Hussin (1987) specified that teaching aids could be divided into three levels, namely materials that use electronic media

such as instructional films, slide films, projectors (overhead), videotapes, radios, recording tapes, vinyl records and others. Second, materials that do not use electronic media such as voice, books, model chart pictures, newspapers, whiteboards, flashcards and others. Lastly, experiential materials such as acting, pantomime, tours, exhibition projects and materials from nature.

## 2.2 Mathematical Education

Piez and Voxman (1997) stated that reforms in mathematics education should lead to several changes. Firstly, Mathematics must be associated with daily life. We use Mathematics in our daily life whether it is in trading activities, telling time, or estimating the weather. The reformation in mathematics must also emphasize on the use of mathematics in everyday life. The teachers must be able to associate the learning of mathematics in classroom to its real application in the real world. This will make the students feel the need to master the lessons as they will use it in their life.

Third, the students' original thinking must be emphasized instead of manipulating the formula by rote. These young minds must be stimulated to come up with creative and original ideas. If they were only memorizing the formula by rote, their minds will not develop to think outside the box. Thus, comes to the next change which must allow multiple means in solution. There is not one true solution to a problem. There are several probable solutions that may solve an issue. Hence, multiple ideas to solve an issue must not be ridiculed. As long as it solved the problem, it may be regarded a solution as well. Fifth, it must allow a variety of different social approaches. As life is full of surprises and not one person is similar to another, there are many social approaches that deemed suitable in order to tackle an issue.

Last but not least, the change that had been brought in by reforming mathematics must diversify perspectives in teaching. As we all know, reformation means taking other steps or different approaches in an issue. Hence, teachers must be able to open their minds to different perspectives in teaching. New concepts and methods are being introduced by academicians in order to liven up educational atmosphere and making the children able to comprehend learning materials easily. Thus, if the teaching methodologies are efficient in educating the students, the teachers must embrace these new perspectives.

## 3. Research Methodology

### 3.1 Method of Data Collection

#### 3.1.1 Preliminary Survey with Special Education Teachers

A preliminary study was conducted among four Special Education teachers in the Special Education Integration Program (PPKI) Sekolah Kebangsaan Bukit Beruntung, Selangor, Malaysia. A total of 1 male teacher and three female teachers were sampled in this study. The aim of this initial interview was to figure out what is the real issue behind the lack of interest in students with special needs towards the topic Money in Mathematics. Based on age, most of the teachers who answered this interview are in the age range as shown in Table 1 below:

Figure 10: PPKI Teachers Questionnaire Result

Teacher Age Group (Years)	Number	Gender
20 - 30	1	Male
40 - 50	2	Female
50 - 60	1	Female

From the interview conducted, the researchers understood that there are several problems faced by special education needs students with learning difficulties. When it comes to money, these students lack the ability to distinguish the colour of Malaysian banknotes. It is known throughout the globe that Malaysia have a very vibrant and colourful set of banknotes. MYR 1 is blue in colour, MYR 5 is light green, MYR 10 is in red, MYR 50 comes in dark green and lastly MYR 100 comes in purple. It is believed that the Malaysian government made them this way so that it is easier to distinguish the banknotes just by looking at their colour alone. This will save a lot of time and avoid people from checking their money to ensure it is the correct piece to give to sellers or service providers.

### 3.1.2 Target Group

The researcher conducted a study involving 30 special education needs students from Sekolah Kebangsaan Bukit Beruntung, Selangor, Malaysia, consisting of various categories who learn mathematics using this teaching aid.

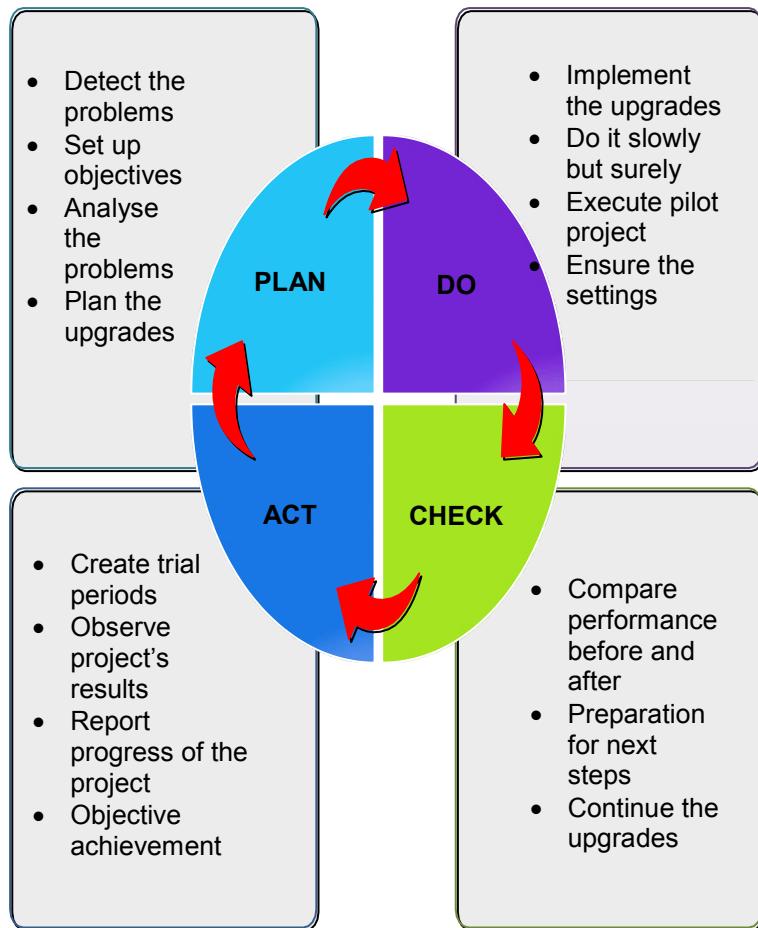
Figure 11: Category of Special Education Needs Pupils with Learning Disabilities

Category of Special Education Needs Pupils with Learning Disabilities	Number of Students
Slow Learner	5
Cerebral Palsy	3
ADHD	10
Autism	6
Dyslexia	5
Speech Problems (Stutters)	1

### 3.2 PDCA Cycle

The Big Book - Malaysian Banknotes is a teaching aid produced by the researcher to help special education needs students with learning difficulties to deal with recognising and using Malaysian banknotes from the value of Malaysian Ringgit 1 to 100. In this context, the researchers use a PDCA cycle created by William Edwards Deming. The PDCA (Figure 12) is an acronym for Plan, Do, Check and Act to achieve the objectives.

Figure 12: PDCA Cycle



Source: (The W. Edwards Deming Institute, 1986)

### 3.2.1 Step 1: Plan

In every project that we ought to make, it must have the planning step. Planning is utmost important in order to make sure that the project that we have in mind is the same as what had been imagined by our teammates. The ideas must be put forth in this stage. A good plan will make sure the project does not crumble to pieces. By detecting the problems, we can set up the objectives to tackle the issues. Apart from that, by analysing the problem in depth, we are able to plan the upgrades and new solutions to solve them.

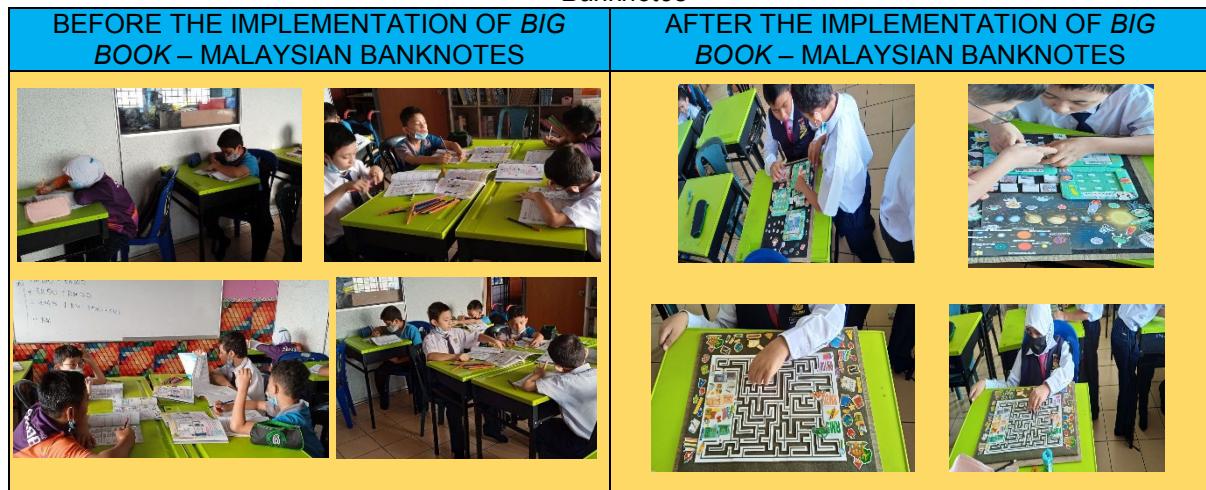
### 3.2.2 Step 2: Do

Data and information collection were made and given to special education teachers who became respondents using self-constructed questionnaires. This questionnaire was conducted to identify special education problems students with learning difficulties in recognising Malaysian banknotes from the value of MYR 1 to MYR 100.

### 3.2.3 Step 3: Check

Figure 13 illustrates the third step of the PDCA Cycle, which involves observing the learning of Mathematics in the topic of Money before and after using the Big Book - Malaysian Banknotes.

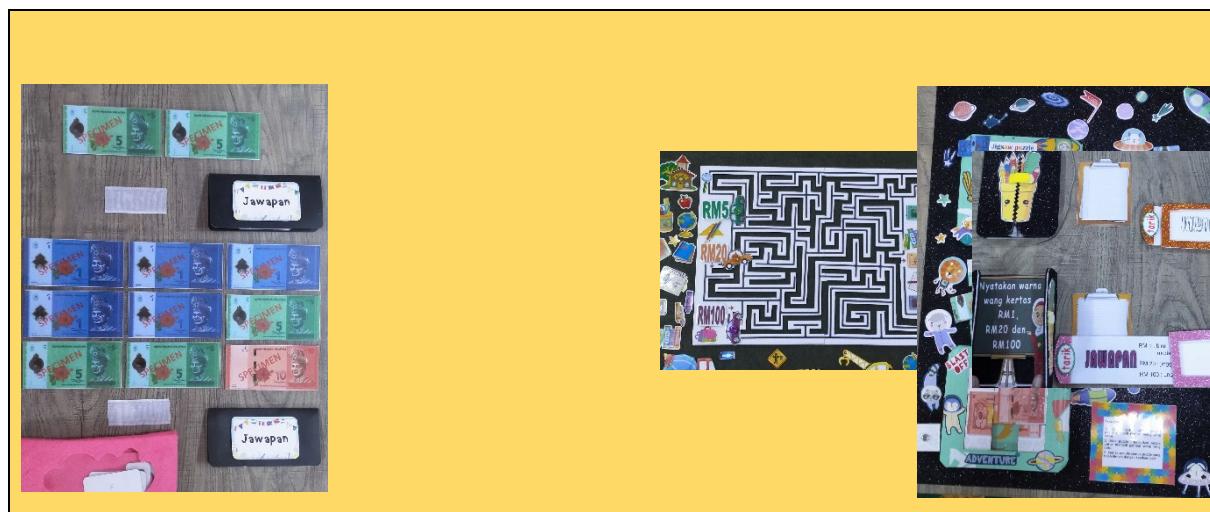
*Figure 13: The images show before and after the implementation of Big Book – Malaysian Banknotes*



### 3.2.4 Step 4: Act

Figure 14 displays the last step in the PDCA Cycle. The researcher used the observation method by means of a checklist on the use of Big Book - Malaysian Banknotes to assess students' progress through the test before and after the intervention using Big Book - Malaysian Banknotes conducted. Pupils show confidence and a positive attitude to participate in activities involving recognising and making mathematical operations such as addition and subtraction involving money.

*Figure 14: Learning activities involving Big Book – Malaysian Banknotes*



## 4. Results and Discussion

This study was conducted because money is significant in the daily lives of special education needs students with learning difficulties, both while in school and after school. In the learning process, these students only recognise money as a tool for buying items. However, they do not recognise their value, appearance, colour and how to use money properly. Therefore, the researcher has produced a form of teaching aid, the Big Book - Malaysian Banknotes to help and facilitate students to understand the learning objectives of the topic Money fully. Big Book – Malaysian Banknote has pictorial notes in the form of pop-ups and exercises such as puzzles, mazes, slide card questions, scratch card questions and others.

### 4.1 Respondents' Demographic

*Figure 15: The respondents' demographic*

No.	Item	Male	Female
1.	Age	18 -29 years old: 1 respondent	30 – 49 years old: 2 respondents  Above 50 years old: 1 respondent
2.	Gender	1 respondent	3 respondents
3.	Race	Malay = 1 respondent	Malay: 3 respondents
4.	Religion	Islam = 1 respondent	Islam = 3 respondents
5.	Teaching Experience	1 – 5 years = 1 respondent	6 – 15 years = 1 respondents  Above 16 years = 2 respondents

This survey was conducted towards four special education needs' teachers who teach at Sekolah Kebangsaan Bukit Beruntung, Rawang, Selangor. Their experiences in teaching the special education needs' children are what important in order to bring this research into fruition. Without their abilities to pinpoint the issues that these children had, the researchers would not be able to come up with a solution to overcome the issue.

The respondents who answered the survey consisted of one male and three female teachers. The male teacher is from the age group of 18 to 29 years old. Meanwhile, 2 of the female teachers were from 30 to 49 years old; and another female teacher is above 50 years old. They are all of Malay race and embrace Islam as their religion. The male teacher possesses 1 to 5 years teaching experience. Meanwhile for the female teachers, one of them has 6 to 15 years teaching experience and the remaining two possess more than 16 years teaching experience.

### 4.2 Respondents' Knowledge Regarding Learning Aids

*Figure 16: Question 1 of Knowledge in Learning Aids*

No.	Question	Male teacher	Female teachers
1.	What is your knowledge level regarding learning aids?	Very knowledgeable = 1	Very knowledgeable = 3

When the respondents were asked about their knowledge in learning aids, all four of them claimed to know the definition of learning aids and how to use them in classroom. Hence, they all know the importance of learning aids in helping students to grasp the lessons taught. It is undeniable as well that these teachers may have use at least one type of learning materials in the classroom to aid their teaching.

### **4.3 Implementation of Learning Aids in Classroom**

*Figure 17: Question 1 of Implementation of Learning Aids*

Questions No.	Question	Yes	No
1.	Do you use learning aids in classroom while teaching?	3	1

The first questions in this segment asked whether the teachers use learning aids in the classroom while they are teaching. Three teachers answered Yes to the question, while 1 teacher said that she had not use learning aids in the classroom.

75% of teachers prefer two-way teaching and use teaching aids in the form of printed materials to facilitate the complete delivery of learning content. They prefer to use cooperative learning, a teaching strategy where students help each other in a small group with the same goals and objectives. Studies have found that collaborative learning can improve students' achievement, creative and critical thinking, social skills and group interaction, and confidence and mutual respect (Artzt and Newman, 1997; Slavin, 1995). According to Johnson and Johnson (1989), traditional teaching is a passive and non-stimulating teaching method.

Overall, the level of use of teaching aid among special education teachers with learning difficulties is moderate. The analysis results show that only printed material is the most frequently used teaching aid by respondents in the teaching and learning process. This means that respondents, which are the special education teachers, prefer to provide printed materials to be used in their teaching because it is easier and simpler to prepare.

*Figure 18: Question 2 of Implementation of Learning Aids*

Questions No.	Question	Male teacher	Female teachers
2.	What is the scale that can be given to the student's development before the teacher uses the teaching aids in education?	Scale 2 = 1 respondent	Scale 1 = 1 respondent  Scale 2 = 2 respondents

The second question asked regarding the scale that the teachers may give to the students' educational development before the teachers use teaching aids in classroom. The male teacher gave a scale of 2 out of 5, where 5 is the highest. Meanwhile for the female teachers, one of the three teachers gave a score of 1 out of 5. The rest of the teachers gave a scale of 2 out of 5. This signified that the performance of these children is not very satisfactory and not even mediocre. They should be at least 3 out of 5 in order for them to be average.

According to the survey done earlier in this study, these children with special educational needs are unable to associate the colour of the banknotes with their values. Thus, making it hard for them to engage in trading activities. Some of them only recognise one or two banknotes since they are familiar with it. For example, MYR 1, 5 and 10 are quite easy for several of them to recognise; since these banknotes are familiar to children. For MYR 50 and 100 however, would be quite an arduous task for them to comprehend as these banknotes are almost alien to them. They are not accustomed to holding a piece of MYR 50 or 100 freely in their hands.

A number of the students are aware that money is used for buying items. However, they do not know that money is something that must be saved for future usage. As we all familiar with the saying, "money does not grow on trees"; these children however, do not understand the concept of frugality and saving. Hence, they do not know the proper way to

save money. Saving money for future use is vital as we do not know what lies in front of us. Having a piggy bank or savings would be a great benefit in times of need.

In order for these children to understand the concept of saving money, the first need to differentiate between cheap and expensive items. Thus, they will know that if we choose to buy cheap item, we are able to save money. However, it is not the case with these special children. They may take a generous amount of time in order to differentiate and distinguish whether an item is cheap or expensive. To the eyes of these children, they will give money in order to obtain the item. It does not matter whether it is cheap or expensive, as long as the money they have is sufficient to buy the item, they will use their money.

*Figure 19: Question 3 of Implementation of Learning Aids*

Questions No.	Question	Male teacher	Female teachers
3.	What is the scale that can be given to the student's performance after the teachers use teaching aids in education?	Scale 4 = 1 respondent	Scale 4 = 2 respondents Scale 5 = 1 respondent

To answer the third question, the teachers had used teaching aid in subsequent learning sessions. A test after using the teaching aid was conducted, and it was found that the students test scores improve drastically for students with low functionality, an increase of 25%; for medium functionality by 35% and high functionality by 40%. This improvement is the effect of the first-time use of teaching aid built by the researcher.

The special education needs teachers gave a very promising rating regarding their students' educational progress. The male teacher gave a scale of 4 out of 5, where 5 is the highest grade to be awarded. 2 out of 3 female teachers gave 4 out of 5, and one female teacher gave a full 5 marks. Hence, this showed that the Big Book – Malaysian Banknotes intervention served its purpose well.

*Figure 20: Question 4 of Implementation of Learning Aids*

Questions No.	Question	No changes	Lesson objective achieved
4.	What is the effectiveness of teaching after using Big Book teaching aid.	0	4

For the last question given to the teachers, they were asked the level of effectiveness achieved by implementing the Big Book – Malaysian Banknotes in their teaching lesson. It is vital to know whether there is change or improvement in the learning of these special children. All 4 teachers claimed that the insertion of Big Book – Malaysian Banknotes in the topic Money of the Mathematics subject had given a significant impact towards the learning of these pupils. They approved that the lesson objective had been achieved successfully with great results.

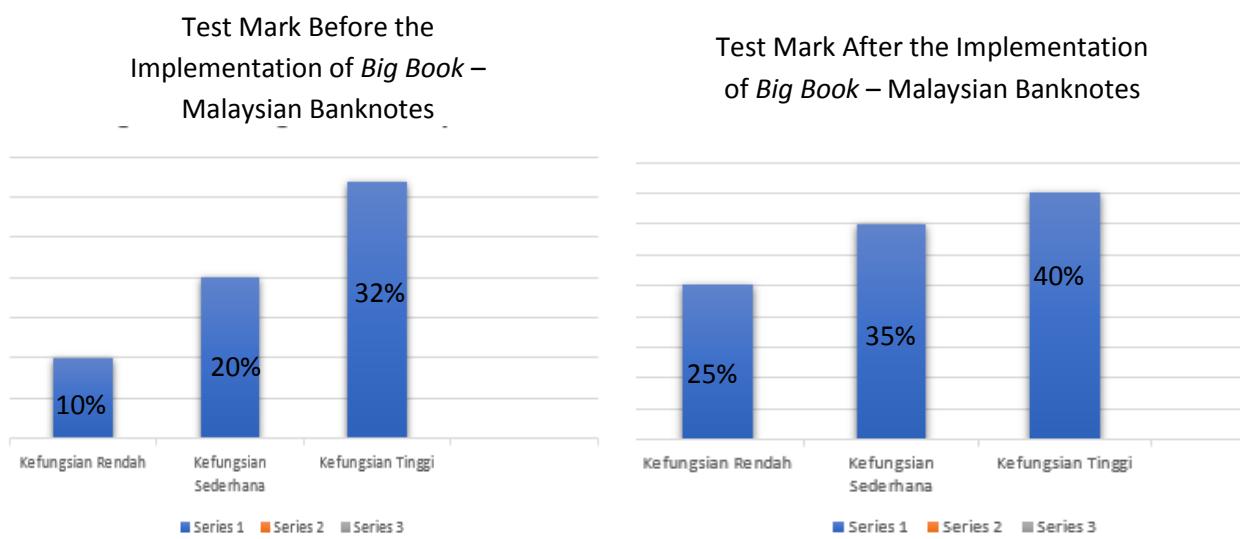
Before the intervention using the Big Book, it was found that special education needs students with learning difficulties only knew money as an object or as a tool to purchase items. They are unable to identify and specifically use the money even if it has been taught by teachers, parents and/or guardians. These are several problems that they encounter while studying the topic of Money in the subject of Mathematics.

Pupils find it difficult to recognise banknotes through textbooks learning and activity books only. Apart from that, pupils find it challenging to remember the banknotes taught by using only one teaching aid. They also find it hard to answer the questions in the exercise

book without the teacher's guidance. This makes it hard for them when the teachers teach mainly using textbooks and 1 or 2 forms of teaching aids and lack elements of creative thinking in a given activity. In addition, the pupils do not have the opportunity to explore activities in the subjects taught because there are not many activities provided.

Before using these teaching aids, students pay less attention to learning. They do not remember the inputs taught because the learning primarily uses textbooks, exercise books and teaching aids in the form of example banknotes only. A brief test was made after that and found that the students' marks were unsatisfactory. Subsequent learning has implemented the teaching aid of Big Book – Malaysian Banknotes and found that the students are very excited, entirely focused and positive because they can fully use the teaching aids. These students need to create creative ideas to produce good output. A simple quiz was made, and it was found that the students' scores increased by a significant percentage. The graph before and after the intervention can be seen below.

*Figure 21: Bar Chart for Test Mark Before and After the Implementation of Big Book – Malaysian Banknotes*



The figure above showed the graphs before and after the intervention of the Big Book. Written questions are often given after teaching a concept or skill to ensure that students understand the lessons taught by a teacher. In this context, tests conducted before using teaching aid found that special education needs students with learning difficulties have obtained unsatisfactory marks for each of their respective functions. For low functionality students, they got 10%; medium functionality received 20%, and high functionality gets 32%.

A test after using the teaching aid was conducted, and it was found that the students test scores improve drastically for students with low functionality, an increase of 25%; for medium functionality by 35% and high functionality by 40%. This improvement is the effect of the first-time use of teaching aid built by the researcher.

## 5. Discussion and Conclusion

### 5.1 Research Findings and Discussion

Based on the study results, the researcher found that the selection of teaching strategy methods appropriate to the topic, classroom atmosphere, and the students' situation is critical to ensure that lessons can be delivered as much as possible. In addition, this study is able to increase the innovation power of educators to improve the quality of teaching and learning. Holistic development and mastery of skills is the direction of every teacher when guiding special education needs students.

According to Amir Hasan (2002), in a classroom, each individual has different psychology and intellectual abilities from each other. Therefore, the proposed teaching must be appropriate, organised (according to the level of students) and supported (with teaching aids) to stimulate individual potential to the maximum level.

Noor Azlan and Nurdalina (2010) specified that teaching aids play a significant role in understanding the concepts in the teaching process other than aiming to attract students in the subject of Mathematics. Teaching aids are instruments in aiding students' understanding and further helping to stimulate the academic world for students. The use of teaching aids also contributes to improving the quality of teaching and learning among teachers and students. Teaching aids can also solve various teaching methods of teachers that are constantly changing with the passage of time (Noor Azlan and Nurdalina, 2010).

In addition, the use of teaching aids in the teaching and learning process is to highlight concepts. According to Norma (2004), the use of teaching aids actually gives students the opportunity to acquire knowledge through the use of various senses such as visual senses, tactile senses, and auditory senses.

Asri (2000) describes that traditional teaching that only focuses on listening to the teacher's explanation in theory without evidence cannot be used as a reinforcement in order for the lessons to understand faster and remembered effectively. On the other hand, classes that use teaching aids can strengthen learning because students can experience what is taught.

Although teachers find it easy using the mechanism of 'chalk and talk' in education, the method of teaching and learning using teaching aids for the subject of Mathematics can have a massive impact; especially on the development of special education students with learning difficulties.

It is hoped that this study can open the eyes of all teachers so as not to rely on books and worksheets only.

### 5.2 Implications of the Study

This research has a significant impact on the education world. The outcome of this study, which implemented Big Book intervention as a form of fun learning, had been proven by the substantial rise in academic performance of the students in Mathematics. Their interest in Mathematics had risen and thus will make them more interested in learning. The task of teaching these special students are very menial for these teachers. However, the teachers are able to pull it off without any complaints. Their spirits stay strong to educate these young minds.

With the implementation of Big Book - Malaysian Banknotes, the researchers hoped that it can ease their burden and making the teachers enjoying themselves in teaching the pupils. The improvement of these students' performance in learning had proved the positive implications towards the development of these young generations as well to their teachers.

### **5.3 Limitations and Future Suggestions**

It is undeniable that every research has its own limitations and drawbacks. Although it is of best interest of the researcher to do our best, there are several aspects of the research that we are unable to give our utmost best. The first limitation is that the number of samples for the research is small. The respondents consist of 4 Special Education Needs teachers and 30 students from Special Educational Needs Program.

Apart from that, this Big Book only caters for students in the city area. Bukit Beruntung, Rawang is an industrial city with a lot of factories. Hence, the students' upbringing is much better compared to the students who live in the rural areas. Although the students have special needs, their living status and familiarity to the topic Money are much better compared to students living in villages.

Besides that, one cannot leave the fact that Big Book – Malaysian Banknotes is made specially to improve a certain topic, which is Money in the Mathematics subject. It focused clearly in educating the children regarding the topic Money.

For future researchers, it will be great if they can gather at least 100 students with special educational needs in order for the analysis to be more competent and solid. The number of teachers giving responses must be added as well to pinpoint the issues faced by these young generation.

To solve regarding the geological aspects of the respondents, future studies may include special education needs students from schools in villages and outskirts. These students may have different or add-on issues surrounding them that may not present in urban children.

Last but not least, the Big Book may include other topics as well. It may not solely for Mathematical purpose. It can be related to language learning, science and technology as well as religious subjects. The elements in a Big Book which includes shapes, colours, and games are well accepted by students as they are the concepts comprised in fun learning which may engage the students to learn better.

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# IMPROVING THE SKILL OF RECOGNISING CAPITAL LETTERS ALPHABET A TO Z FOR SLOW LEARNER PUPILS BY USING “KOTAK TEROKA ABC”

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## ABSTRACT

This action research is the result of the researcher's awareness to improve teaching and facilitation methods (PdPc) based on the difficulties encountered by Special Education pupils (Learning Problems) in mastering the recognition of capital letters for alphabet A to Z using “Kotak Teroka ABC”. This study involved Year 6 Special Education pupils with moderate functional learning problems (slow learner) as an intervention tool used in Kuala Kubu Bharu School. There are two problems identified amongst the pupils in this study, namely the skill of recognising capital letters and the problem of attention span. This “Kotak Teroka ABC” emphasizes visual and tactile methods as well as learning methods while playing. Various themes and storytelling are applied in the “Kotak Teroka ABC” to attract pupils in improving their recognising capital letters. This study uses a combination of qualitative and quantitative methods through observation, pre-post test and document analysis. The results showed improvement in literacy skills, which is to recognise capital letters A to Z by using "Kotak Teroka ABC". In addition, pupils showed a positive attitude and increased concentration level. “Kotak Teroka ABC” can be modified and manipulated by substituting the capital letters with small letters as well as with numbers ranging 1 to 20. “Kotak Teroka ABC” can also be tested on pupils with other types of learning problems and improved in the form of applications in line with the transformation of digital world towards using technology in 21st century learning. Therefore, Special Education teachers should be mindful of this fact and take action to improve the basic skills of 3M, especially recognising capital letters for alphabet A to Z among Special Education pupils with learning difficulties.

**Keywords:** Kotak Teroka ABC, slow learner, recognise capital letters for alphabet A to Z

## 1. Introduction

Bahasa Melayu or Malay language generally describes the language development of recognising alphabets and the development of higher form of language. However, pupils with learning difficulties often have difficulty remembering something they learned. This is due to the content of the lesson, which is purely factual and the attitude of the pupils who gets quickly bored. As a result, the “Kotak Teroka ABC” was produced in such a way that the pupils were unable to capitalise on the subject Bahasa Melayu Year 1.

“Kotak Teroka ABC” is an intervention tool that integrates the use of VAKT, namely visual, audio, kinesthetic and tactile into the teaching and facilitation process (PdPc). The “Kotak Teroka ABC” is produced to help pupils who have difficulty in understanding and remembering the learning standards for the topic of Recognising Capital Letters.

## 2. Problem Statement

1. Pupils still do not totally comprehend the lowercase and uppercase letters
2. Pupils have mastered the lowercase letters but still do not fully recognise the uppercase letters
3. Pupils have problems concentrating while studying
4. Pupils are too dependent on the teacher to complete their work

## 3. Objectives

1. To relate learning capital letters with prior knowledge or experience
2. To improve fine motor skills by moving capital letters
3. To instil interest among pupils in learning capital letters
4. To improve memorising skills for pupils with learning disabilities

## 4. Literature Review

### 4.1 Rational Choosing Best Practices

#### 4.1.1 21st Century PdPC Applications Using Innovative Materials

The “Kotak Teroka ABC” as a whole is focused as a teaching aid for Special Education teachers to teach the concept of capitalization. In addition, this intervention tool can also be used as a teaching aid to teach the concept of lowercase letter recognition. “Kotak Teroka ABC” in learning *Bahasa Melayu* concept of Special Education teacher as facilitator and facilitator whose role is minimal and pupils do more exploration of the content independently.

#### 4.1.2 Practical to collaborative and cooperative learning

Pupils can work in a group to use the “Kotak Teroka ABC” to apply capitalisation. Together, they collaborated using the “Kotak Teroka ABC” as a learning aid to complete the arrangement of the capital letters.

### 4.2 Theory

#### 4.2.1 Jean Piaget's Theory of Cognitive Conductivism

Piaget, J. (1957) states that children go through four stages of cognitive development based on biological development and change according to the level of maturity of the individual. According to him, the cognitive development and thinking ability of all individuals go through the process according to the same sequence of stages (Piaget, J. & Cook, M. T., 1952).

Learning readiness specifically cognitive readiness should be taken into account in the teaching of learning. Pupils are only able to master certain concepts when they are at the appropriate level of cognitive development.

This emphasis can be applied in the “Kotak Teroka ABC”, which focuses on student-centered learning. This includes focusing on the learning process, active learning that involves pupils building knowledge, group activities, creating problems for pupils to be challenged and providing learning assignments that are consistent with pupils' cognitive abilities.

#### **4.2.2 Operant Conditioning Theory E. L. Thorndike**

According to Thorndike, E. L. (1927), there are three principles or laws of learning. Firstly, the Law of Willingness. Individuals need to have the willingness to allow an action or reaction to take place. Learning readiness includes cognitive readiness (previous knowledge experience), affective readiness (tendencies/) and psychomotor readiness (physical skills). Teachers need to ensure that the pupils have the necessary readiness to begin learning activities so that pupils can achieve the objectives in line with their abilities.

Second, is the Law of Training that the relationship of stimulus and response will be strong with the repetition and training of many and varied (Thorndike, E. L., 1898). The relationship between stimulus and response will be weak if it is not used, i.e. there is no repetition and training. The law of training asserts that human beings learn through the process of making and forgetting occurs, when things not learned are no longer used/made.

To ensure the continuity of learning, training in various forms and varied stimuli, repetition, drills, application of knowledge and skills learned in other situations should be conducted more frequently (Thorndike, E., 1913). Training and application of knowledge and skills mastered will strengthen learning.

Third, is the Law of Effect, i.e. a reaction followed by a pleasurable and satisfying effect will enable the reaction to be repeated (Thorndike, E. L., 1905). When a situation repeats itself, the response relationship is repeated. When a situation repeats itself, the relationship of the response to the situation is stimulating. So, teachers should provide a learning environment that can lead to a feeling of success. If the pupil is able to master the learning or get praise, the pupil will be satisfied and happy. This situation makes pupils work harder to continue to succeed.

## 5. Research Methodology

### 5.1 Intervention Tool Plan

*Table 1: Gantt chart of intervention tool implementation*

	Item	JAN	FEB	MAR	APRIL
1	Identify problems and collect data				
2	Write an intervention tool proposal paper				
3	Plan actions				
4	Take actions				
5	Gather information				
6	Analyze data information				
7	Make reflections and reports on intervention tools				
8	Documentation				

Researchers have used the Kemmis Model and Mc Taggart (1998) as a research model to implement this action research. According to Kemmis and McTaggart (1998), action research is one of the measures to improve and enhance the quality of education through reform and improvement by encouraging teachers to do self-reflection to change the shortcomings in themselves, that is in the researcher. Generally, there are four phases in each cycle namely reflection, planning, action and observation.

#### Step 1: PdPc Reflection

After the researcher made a completed a PdPc session and self-reflection, the researcher found that there were some pupils in the Year 6 class who could not master the learning objectives on the topic of Recognising Capital Letters. When the researcher asked open-ended questions to the pupils, it was found that the pupil was not unable to answer all of them. This clearly shows that the pupils were not able to master the content of the lessons that have been taught in the PdPc process. Consequently, researcher is trying to make improvements to overcome the problem.

#### Step 2: Design

After examining the main problems that arise, researcher has made plans to change teaching practices by applying the use of VAKT to help pupils recognise capital letters. Therefore, the “Kotak Teroka ABC” is produced.

#### Step 3: Action

After reflection and planning to change the researcher's practice, the researcher then acted according to an action implementation procedure using the instruments below:

## Procedure 1: Intervention

In short, the pupils still do not understand and remember the content of the lesson in the topic. To overcome this problem, researcher has decided to design an innovation tool that is capable of overcoming the problems that arise. The guidance done by the researcher was by using the "Kotak Teroka ABC".

This intervention tool is teacher and student-centered in which pupils explore on their own and the teacher becomes the facilitator. Where the pupils can use the "Kotak Teroka ABC" individually or in small groups. This can be done by the way pupils learn while playing. In this step, the teacher plays a greater role as a facilitator in monitoring and answering questions posed by pupils.

At the end of learning and teaching through the intervention tool, pupils are asked to answer a test provided by the teacher. Meanwhile, when pupils used the intervention tool, the "Kotak Teroka ABC", teachers made observations on the responses of study participants. Observation were carried out to see to what extent does the intervention tool could attract pupils. In this observation, the researcher used a checklist as an instrument.

## Step 4: Observation

Upon completing the mentoring session, the researcher then made observation on the level of mastery of pupils. Therefore, the researcher has analysed all the data obtained.

### 5.2 Methods of Assessment

#### 1. Pre-post test

- Implemented before and after using the intervention tool by using the same test

#### 2. Document analysis

#### 3. Observation

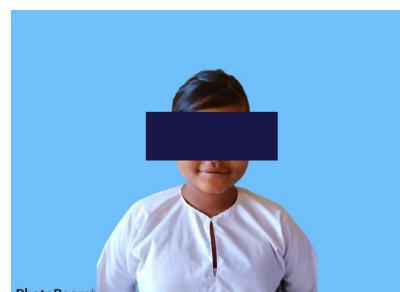
- Checklist form before and during the intervention

### 5.3 Methods/Techniques Used

1. Teacher-centered
2. Student-centered
3. Self-learning

### 5.4 Sample

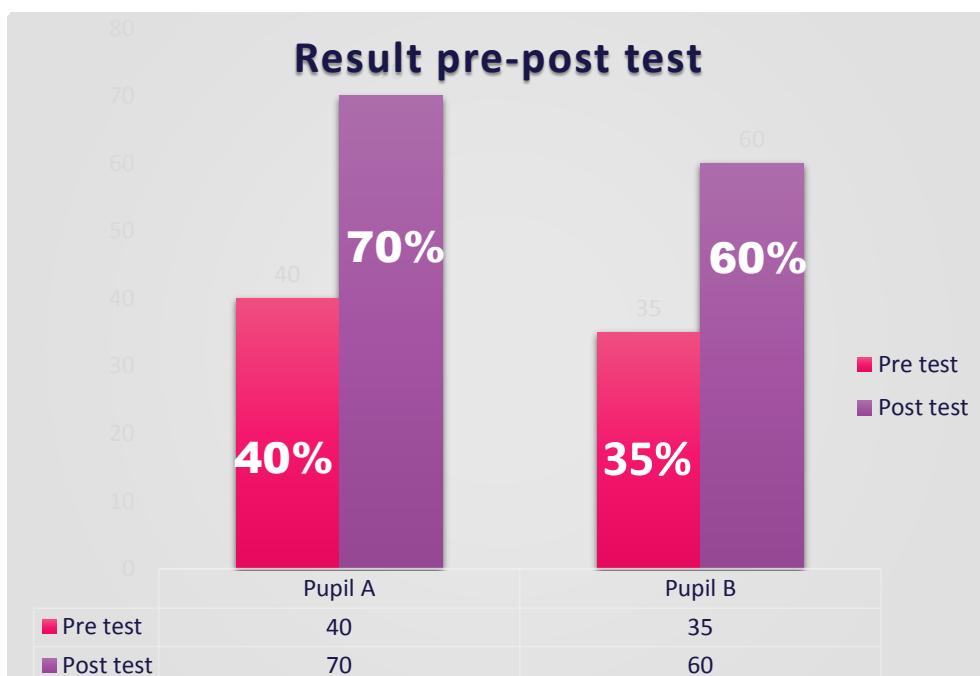
Table 2: Description of the sample



PUPIL A	PUPIL B
12 years old	12 years old
Slow learner	Slow learner
Difficult to focus in class	Too dependent on the teacher

## 6. Result

Figure 1: Result pre-post result



The result from the implementation of the intervention tool. it showed pupils made improvement on pre-post test. Pupil A on the pre test got a score only 40% and after using the intervention tool he took it again using the same test and got a score of 70%. Similarly pupil B initially got only 35% and increased to 60%.

## 7. Discussion

### 7.1 Thinking Skills

- a) **Communication** - Pupils communicate in class using the “Kotak Teroka ABC” by working together in a group to solve problems.
- b) **Collaboration** - Pupils collaborate in learning by helping each other.
- c) **Critical skills** - Pupils create questions in their respective groups then exchange questions with each other. The solution is to use the “Kotak Teroka ABC”.

### 7.2 Applied Pure Value

- a) **Values**- Many values can be nurtured such as love, cooperation, mutual respect and courage.

### 7.3 Strength of Methods / Techniques

- a) Pupils are more interested and excited to learn Bahasa Melayu
- b) Teachers find it easier to explain capital letters
- c) Pupils are able to build self-confidence to remember capital letters in outside the teacher's supervision
- d) Pupils can apply fine motor therapy

### 7.4 Impact of Success

- a) Pupils are able to master reading skills.
- b) Pupils' score in test increases.
- c) Destructive behavior is declining.
- d) Pupils are independent in solving problems.

### 7.5 Cost Estimation

The cost to produce this intervention tool is as follows:

*Table 3: Cost estimation to produce intervention tool*

	MATERIAL	COST
1.	Recycling box	Existing
2.	Colored paper	RM5.30
3.	Decorating materials	RM10.70
4.	Equipment (markers, ropes etc.)	RM9.60
<b>TOTAL</b>		<b>RM25.60</b>

## 8. Conclusion

The effectiveness of this intervention tool also can be demonstrated through the willingness of pupils to learn and use existing experience to relate the learning content of capitalisation in more enjoyable situation than chalk and talk learning.

In terms of behavior, pupils showed improvement in recognising capital letters A to Z and focusing on learning. Pupils also are more interested in learning and show positive behaviors such as being more independent, not relying too much on the teacher and not interrupting other peers while learning.

In conclusion, quality learning is highly depending on the ability of the education system to produce creative and innovative human capital, enhancing the elements of creativity and innovation in education. The world of education also needs creative teachers to implement learning that stimulates the mind and harnesses the creativity and innovation of pupils.

A good intervention tool should have high reliability, ease of use and reasonable cost so that it can be accepted by users. The aspects presented also have the potential to be a popular tool in today's society. In short, creativity and innovation are the keys to the progress of the country and the education system (Abdul Rashid Jamian, Norhashimah Hashim & Shamsudin Othman, 2012).

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## SMART PARTNERSHIP: RING & ROLL, TWIST LONG JOHN

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### ABSTRACT

This study was conducted to explore, understand and explain the implementation of the Smart Partnership Project: Ring & Roll, Twist Long John for the students with Special Needs Learning Disabilities (MBK BP) at SMK Syed Mashor, Hulu Selangor. A total of 8 students with moderate functional learning difficulties, 2 teachers and a PPM were involved in this study. Preliminary surveys found that the students, teachers and PPM faced some problems in following the bread making skills based on the National Occupational Skill Standard (NOSS) provided by the Department of Skills Development (JKP). Smart Partnership Project: Ring & Roll, Twist Long John is implemented to create a smart partnership between the school and professionals in related industries. Qualitative methods and case study strategies were conducted for data collection and analysis through the observation, interview and document analysis methods. The findings of the study have been able to identify and explain in detail about the implementation of the Smart Partnership Project: Ring & Roll, Twist Long John MBK BP in this school. As a result, the study was successfully and the module will be designed so that it can be used as a guideline as an implementation of smart partnership in the future.

**Keywords:** Bread making, moderate functional learning difficulties, NOSS, Smart Partnership, Ring, Roll, Twist, Long John, Malaysian Skills Certificate.

### 1. Introduction

The role and responsibility of a Special Education teacher is not only to teach theory in the classroom to students with special needs (MBK), but also to educate and train this MBK in practice so that the knowledge and skills that need to be mastered, can be utilized and used this MBK properly. when they enter the world of work after finishing school. Parents have high expectations of teachers and schools in order for their children's learning outcomes at school to help MBK children get a job that allows them to be independent, support themselves, and continue to survive without relying entirely on family members, especially if both parents have died. The role of the Ministry of Education Malaysia (MOE) is to provide clear educational policies in assisting special education teachers and MBK so that the direction of special education can be understood by all stakeholders and achieved successfully. MOE provides a holistic curriculum and in accordance with the needs of MBK so that the survival of MBK can continue well after school.

The Special Education Division (BPKhas) has outlined several missions in developing excellent human capital with special needs. It is providing a quality, relevant and holistic education system, development of one's potential to the optimum level,

competitiveness and marketability, noble values as a responsible citizen, smart partnerships with various parties and the internationalization of Special Education Programmes. In achieving the missions outlined, KPM has provided various initiatives to ensure that MBKs who graduate from school, are able to have aspects of marketability in the field of employment, especially MBKs who have academic problems such as not being able to follow the mainstream curriculum, do not fully master the basics of reading, writing and arithmetic (3M), having problems communicating (introvert or extrovert) with people around them as well as self-management and behavior problems. Therefore, this MBK should be given the opportunity to learn and master vocational skills as an alternative to the existing academic knowledge. Therefore, various initiatives, programmes and skills institutions have been introduced or created by the MOE. It is formulating a comprehensive Special Education Curriculum, holding a Special Vocational Education Secondary School (SMPKV), creating a Buying Seat programme, drafting a Standard Secondary School Curriculum (KSSM), as well as the Upper Secondary Industrial Apprenticeship Programme (PIMA). These programmes are among the alternatives to the academic streams that are usually difficult to master by most MBKs who are usually more inclined towards skill areas.

Starting in 2016, simultaneously with the implementation of KSSM PK and the introduction of KVS subjects, MOE also in collaboration with JPK and the Center for Instructor Training and Advanced Skill Training (CIAST) has seriously held a pilot school project, organizing a series of workshops and courses in person and online specifically to train potential special education teachers as head coaches (JUs) who in turn will guide other special education teachers who teach KVS subjects, so that they have at least a Level 3 SKM certificate and provide opportunities to as well as encourage teachers to continue to have Vocational Training Officer (VTO) certificate qualification.

MOE also encourages schools to take the initiative to create an Accredited Center (PB) for National Occupational Skill Standard (NOSS) which has been selected to be implemented in the school and in accordance with the ability of students and NOSS requirements outlined by the Department of Skills Development (JKP) for certification accreditation. SKM for MBK can be implemented in the PB. School administrators, especially principals, are encouraged to obtain Induction Certificates provided by JPK to be eligible to be appointed as PB Managers in their respective schools so that there is continuity in the implementation of KVS in schools, starting from the Principal, administrators, school staff and then the MBK.

Recognizing the operating costs and financial implications related to the implementation of KVS subjects for the purpose of learning and accreditation of SKM for MBK is too expensive to be borne by the school if it only relies on existing per capita grant assistance (PCG), through Financial Circular Letter (SPK) Number 1 Year 2021 which was improved to SPK Number 8 Year 2012 and Amendments to SPK Number 8 Year 2012, KPM has taken the initiative to provide PCG assistance specifically for KVS subjects with SKM qualification, at a rate of RM800 to RM1600 per student per year. The PCG rate per student per year varies according to the NOSS list. For the subject of basic vocational skills (KAV), which is a subject that provides basic vocational skills for MBK who follow KSSM PK Form 1, PCG provided is at the rate of RM150 per student per year.

According to Kohler and Field (2003) in Rosmiza MZ, Mimi Halida Ghazali (2019), the determinants of the success of the Career Transition Programme (PTK) or pre-vocational training to MBK BP are student-centered planning, student development, inter-agency and multidisciplinary collaboration, family involvement as well as programme structure. According to Noonan et al. (2008), the best strategies for conducting effective collaboration start at the federal, state, district and school levels.

Special Education teachers need to be creative and innovative in implementing the curriculum provided in accordance with the potential and abilities of MBK. The Education (Special Education) Regulations 2013, under item 8 paragraph (1) (c) states, a teacher may modify the methods or techniques of teaching and learning, the time allocated for each activity, arrangement of activities and teaching aids. While item 8 paragraph (2) states that any modification in paragraph (1) (c) shall be in accordance with the Special Education Curriculum.

In this regard, to overcome the various challenges in teaching KVS subjects in schools in an effort to prepare MBK for SKM accreditation, the Smart Partnership programme was implemented in the Special Education Integration Programme of SMK Syed Mashor (PPKI SMKSM) involving 8 students, 2 teachers and 2 Assistants Pupil Management (PPM) with 2 lecturers from Hulu Selangor Community College. The content of the programme is to conduct 2 series of courses for the Doughnut Making Competency Unit (CU), namely the skills of producing four types of doughnuts. This Smart Partnership Programme has the full support of parents who hope that aspects of their children's life skills can be further improved with the help of professionals in related industries.

Since the students started of taking this KVS subject in 2019, it has been found that students still have difficulty mastering the required skills. The Smart Partnership Programme with Hulu Selangor Community College proposed in this study is a programme designed with a specific purpose to overcome the challenges in the teaching and learning of KVS subjects. The programme is implemented to enhance the knowledge and skills of teachers and students to produce the four types of doughnuts outlined in the Doughnut Preparation CU. The main objective of this study is to explore, understand and explain the implementation of the Smart Partnership Project: Ring & Roll, Twist Long John MBK Learning Problems PPKI SMK Syed Mashor. In particular, the specific objectives of the study are to:

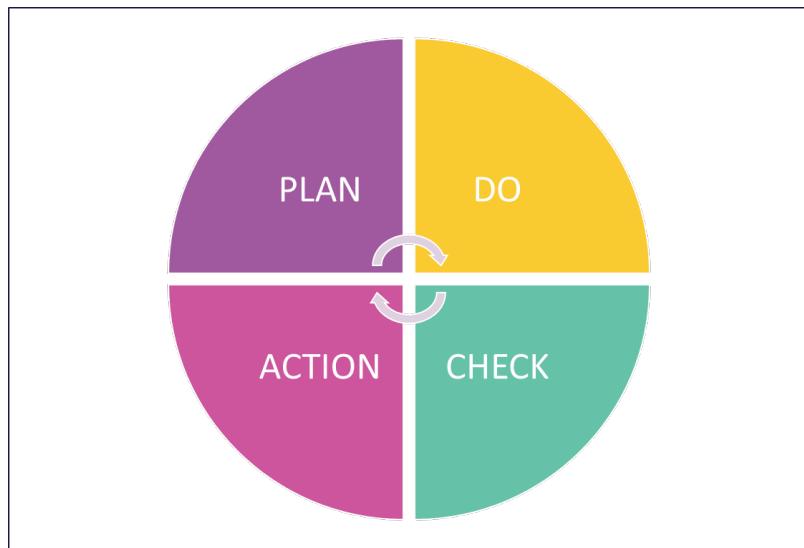
1. Improve the skills of making four types of doughnuts.
2. Complete the physical requirements and equipment to achieve the Malaysian Skills Certificate (SKM) standard.
3. Improve the teachers' skills and get recognition from JPK.
4. Prepare the project modules as guidelines to implement the PPKI smart partnership programme.

The Smart Partnership Programme: Ring & Roll, Twist Long John has had a positive impact on MBK and teachers. The results of the interviews after the programme was implemented, found that the MBK involved felt very happy because they had mastered the skills of making four types of doughnuts, namely ring, roll, twist and long john, better than before. Teachers also feel more confident in teaching the CU and this saves time because students have also shown increased understanding, skills and self-confidence to complete assignments without waiting for the teacher's instructions at all times.

## **2. Methodology**

This study was conducted using a qualitative method approach. The case study strategies were conducted to collect and analyze data through observation, interview and document analysis methods. For this study, the researcher used the PDCA cycle of Plan, Do, Check and Action to achieve the objectives (Figure 1).

Figure 1: PDCA cycle



Source: (The W.Edwards Deming Institute, 2015)

## 2.1 Step 1: Plan

Data collection was done using document analysis on work forms that recorded the student's performance after completing assignments. There are four main components of evaluation that are present in the work form, namely attitude, job safety, work process and work results. As a result of the analysis of this document, several problems have been identified. Among them are students who lack the determination to complete the task in the allotted time, students who are unable to produce doughnuts in the allotted time, and students who are unable to produce doughnuts in accordance with the five doughnut criteria required, which are shape, texture, aroma, colour, and taste.

Based on the data collected, the researchers found that the main problem of students with learning difficulties not mastering the basic skills of doughnut is because they are too dependent on the teacher to complete assignments. The basic skills of reading, writing and counting are also not well mastered by them. As a result, the doughnut production process is disrupted. Teachers take a long time to teach the basics of doughnut production due to the background of students who consist of various learning problems such as autism and Attention-deficit Hyperactivity Disorder (ADHD).

Teachers had to repeat teaching instructions and demonstrations several times to help students to really master the skills taught, while students took a long time to understand the process and work steps written on the whiteboard or notepaper given to them. Pupils will also need several reinforcement exercises in recognizing the texture and shape of the ingredients, reading the names of the ingredients and measuring the ingredients correctly according to the proportions required in the doughnut recipe. Pupils also have difficulty understanding, remembering and using the correct hardware to complete an assignment. Pupils take a long time to get to know the hardware. At times, the teachers also have trouble choosing the appropriate approach to teach these students to produce four types of doughnuts well.

## 2.2 Step 2: Do

For the purpose of overcoming the problems faced, the smart partnership project was planned and implemented on 5 March 2020 and 11 March 2020 after discussing with the teaching staff of Hulu Selangor Community College with the permission of the Director of Hulu Selangor Community College and the Principal of SMK Syed Mashor. The smart partnership of doughnut production is implemented in phases, namely Phase 1 and Phase 2. The expertise of the teaching staff in the same industry is very necessary for teachers to use as a reference and add new knowledge. Pupils are also given the opportunity to learn directly from the instructors related to the technique of producing four types of doughnuts correctly. The implementation of two series also gives more space for students to practice the skills of producing the four types of doughnuts learned. The sharing of knowledge with the professional teaching staff also provides an opportunity for teachers to gain knowledge and techniques to teach students better to master the skills outlined in the relevant CU. Figure 2 shows a smart partnership session conducted at Hulu Selangor Community College.

*Figure 2: The picture shows the initial information session and the activity of measuring materials correctly with the teaching staff of Hulu Selangor Community College.*



### 2.3 Step 3: Check

Figure 3 shows the work process of students undergoing a session. Pupils are given a probationary period within the first hour. Then the student's work is evaluated. Next, the students are given a period of two hours to reproduce doughnuts from the first step for the purpose of strengthening and psychomotor training of students in order to master the necessary skills.

*Figure 3: The picture shows the process of producing four types of doughnuts.*



### 2.4 Step 4: Action

Figure 4 shows the final step in the PDCA. The researcher used the work form to evaluate the four components in the student work form through the activities carried out. Pupils are more confident in producing doughnuts and are able to complete assignments at the given time without relying entirely on the teacher. Pupils and teachers are also given certificates by the Hulu Selangor Community College and this is an added value to each student's portfolio in the SKM accreditation effort.

*Figure 4: The picture shows the process of the final doughnut and the certificate obtained from Hulu Selangor Community College.*



### 3. Results

The study was conducted for four months from January to March 2020 and August to October 2020. Prior to the Smart Partnership Programme, students found it extremely difficult to master the skills of making doughnuts. Repetition of instructions and demonstrations is done repeatedly by the teacher for the students to master one by one the required skills. As a result, students take longer than necessary to complete the Doughnut Making CU.

Table 1 shows the results of document analysis from the working form before the Smart Partnership Programme was conducted. All 8 students were found to be very weak at preparing doughnuts in the allotted time and very weak in determining the doughnut production steps.

*Table 1: The table shows the level of mastery of students' skills based on the work forms recorded before the programme was conducted.*

COMPONENT	ACHIEVEMENT LEVEL	PUPIL							
		1	2	3	4	5	6	7	8
ATTITUDE	1. Creative, cleanliness and work practices.	/	/	/	/	/	/	/	/
	2. Practice good work.	/	/	/	/	/	/	/	/
	3. Practice good food hygiene.	/	/	/	/	/	/	/	/
	4. Duration of task completing.	X	X	X	X	X	X	X	X
WORK SAFETY	1. Compliance with safety regulations.	/	/	/	/	/	/	/	/
	2. Apply safety skills.	/	/	/	/	/	/	/	/
	3. Used kitchen rules.	/	/	/	/	/	/	/	/
	4. All equipment is close after used.	/	/	/	/	/	/	/	/
WORK PROCESS	1. Determine the right tools.	/	/	/	/	/	/	/	/
	2. Materials selection.	/	/	/	/	X	X	/	/
	3. Determine the steps of making doughnut.	X	X	X	X	X	X	X	X
	4. Mise en place run.	/	/	/	/	/	/	/	/
	5. Duration of work process.	/	/	/	/	/	/	/	/
WORK RESULT	1. Choose the tools and utensils.	/	/	/	/	/	/	/	/
	2. Materials selection.	/	/	/	/	/	/	/	/
	3. Doughnut production according to the recipe.	/	/	/	/	/	/	/	/
	4. Doughnut criteria (shape, texture, aroma, colour, taste)	/	/	/	X	X	X	X	X

*Instructions: (/) Accept (X) Do not accept*

After the Smart Partnership Programme was carried out, the teaching and learning process can be implemented more smoothly. Pupils can master the techniques and skills of producing four types of doughnuts without having to rely entirely on the teacher. Pupils are also able to produce doughnuts within a set period of time. Pupils can measure materials correctly and are proficient in using hardware that is properly functional.

As a result of teacher observation and analysis of work forms, students showed improved mastery of skills. Records on student work forms record student achievement better than before. 5 out of 8 students were found to have successfully produced doughnuts in the allotted time and all 8 students were able to determine the doughnut production steps.

However, it was found that 3 out of 8 students still need to master the skills of preparing doughnuts in the allotted time. There are two major factors that have been identified as the cause of these skills not being mastered: it was discovered that 2 out of every 8 students frequently do not attend school and that 1 out of every 8 students has intellectual problems from birth, which is difficulty processing information in a fast time.

*Table 2: The table shows the level of mastery of students' skills based on the work forms recorded after the programme was conducted.*

COMPONENT	ACHIEVEMENT LEVEL	PUPIL							
		1	2	3	4	5	6	7	8
ATTITUDE	1. Creative, cleanliness and work practices.	/	/	/	/	/	/	/	/
	2. Practice good work.	/	/	/	/	/	/	/	/
	3. Practice good food hygiene.	/	/	/	/	/	/	/	/
	4. Duration of task completing.	/	/	/	X	X	X	/	/
WORK SAFETY	1. Compliance with safety regulations.	/	/	/	/	/	/	/	/
	2. Apply safety skills.	/	/	/	/	/	/	/	/
	3. Used kitchen rules.	/	/	/	/	/	/	/	/
	4. All equipment is clean after used.	/	/	/	/	/	/	/	/
WORK PROCESS	1. Determine the right tools.	/	/	/	/	/	/	/	/
	2. Materials selection.	/	/	/	/	X	X	/	/
	3. Determine the steps of making doughnut.	/	/	/	/	/	/	/	/
	4. Mise en place run.	/	/	/	/	/	/	/	/
	5. Duration of work process.	/	/	/	/	/	/	/	/
WORK RESULT	1. Choose the tools and utensils.	/	/	/	/	/	/	/	/
	2. Materials selection.	/	/	/	/	/	/	/	/
	3. Doughnut production according to the recipe.	/	/	/	/	/	/	/	/
	4. Doughnut criteria (shape, texture, aroma, colour, taste)	/	/	/	/	/	/	/	/

*Instructions: (/) Accept (X) Do not accept*

Findings of information from students through interviews are arranged according to themes so that the information obtained is easy to handle and can be used as a conclusion for this study. Question 1 in Table 3 was asked of the students in order for the researcher to learn about the students' prior experience and knowledge of doughnut production before they began learning CU Doughnut Production.

*Table 3: The table shows the students' response to Question 1 submitted by the teacher.*

Question 1: Before the programme with Hulu Selangor Community College, did you ever make doughnuts at home?	
PUPIL	RESPONSE
1	<i>"I helped my mom..I just looked at it..."</i>
2	<i>"I seldom helped my mom, because my mom sells cake"</i>
3	<i>"Never..."</i>
4	<i>"Never..only my mom did it..I didn't."</i>
5	<i>"No..only my mom did it. I just ate."</i>
6	<i>"Never..I don't know how to make it."</i>
7	<i>"I helped my mom..It was so delicious."</i>
8	<i>"I helped my mom but not everyday."</i>

The results of this question found that 7 out of 8 students did not have direct experience at home in doughnut production. This shows that students do not have solid existing knowledge to be applied in doughnut making training in school. This causes teachers to present the theory and practice of doughnut production repeatedly so that each student understands the steps of material selection and preparation of doughnuts in the allotted time. There are times when the teacher has to repeat the same instruction more than 8 times for 8 students with different levels of understanding so that each student understands and can remember well the steps of preparing doughnuts. This is definitely taking more time than targeted. KVS teaching time is 28 times a week. Sometimes teachers have to teach for more than a week on the topic of doughnut making due to students having difficulty understanding the analysis of assignments required.

Question 2 in Table 4 was asked by the students for the purpose of the researcher collecting information about the students' experience of completing the doughnut making task with the teacher in the school. Researchers want to identify what problems of the students faced during the learning process of the topic.

*Table 4: The table shows the students' response to Question 2 submitted by the teacher.*

Question 2: While at school, is it easy to make doughnuts with the teacher?	
PUPIL	RESPONSE
1	<i>"It was great. I can do it. Lack of time in the beginning."</i>
2	<i>"I need to ask teacher yet it will be difficult."</i>
3	<i>"Yes I can do it but it is difficult."</i>
4	<i>"Yes I can do it."</i>
5	<i>"Yes I can do it.It is difficult.I could not memorize the ingredients."</i>
6	<i>"It is hard even the teacher had helped me. I could not finish to make the doughnut."</i>
7	<i>"It is hard in the beginning but I managed to do it."</i>
8	<i>"It is ok, but it is better if teacher could help."</i>

The findings from the answer to question 2 showed that, although the students were assisted by the teacher in preparing doughnuts at school, all 8 students still had difficulty mastering the skills learned. Pupils still find it difficult to complete assignments and rely on the teacher if they experiencing related problems. Pupils have the difficulty remembering the process, work steps and materials, are still not confident in being independent and need teacher guidance for solving problems encountered throughout the doughnut preparation process.

The researcher then asked the students of Question 3 to find out what their personal feelings and opinions were when given the opportunity to participate in this Smart Partnership programme in two phases. The purpose of the questions asked was also to examine the effectiveness of the programme and aspects of improvement from the point of view of students.

Table 5: The table shows the students' response to Question 3 submitted by the teacher.

Question 3: What are your feelings and opinions while undergoing a programme with Community College?	
PUPIL	RESPONSE
1	<i>"There are a lot of big tables and the teachers are very understanding."</i>
2	<i>"I felt very happy. I could learn how to make many types of doughnuts."</i>
3	<i>"I felt very happy. There is a big kitchen and there are a lot of utensils."</i>
4	<i>"I like it because teachers explain it clearly."</i>
5	<i>"I felt very happy because I could learn how to make many types of doughnuts. The sink and the kitchen is big, there is a big table. Very comfortable."</i>
6	<i>"I like it because the kitchen is very big. We could make doughnuts very comfortable with our friends."</i>
7	<i>"We could bring the doughnuts to our house. It supplied a box too."</i>
8	<i>"I like it. We did not share the utensils with friends. Our moms could eat the doughnuts too. They said the doughnuts is very delicious too."</i>

Findings from Question 3 showed that the students were happy with the Smart Partnership programme conducted. Pupils were comfortable with the method of teaching by the teaching staff from the Community College. The teaching method of the instructors helped them to understand easily, produce doughnuts in the allotted time and also showed that the aspect of comfortable facilities at Hulu Selangor Community College also got the attention of the students.

#### 4. Discussion

The preparation of MBK in the basic aspects of vocational skills provides support to MBK to follow the teaching and learning process at PPKI better, orderly and systematically before they follow the Malaysian Skills Certificate course to prepare for a career. According to the People with Disabilities Act (2008), MBK's involvement in vocational training is lifelong and they should be given educational opportunities and space just like mainstream students. As a special education teacher, researchers are always ready to improve teaching methods in order to be adapted to the MBK of various abilities in a single special education class. The selection of the right teaching techniques and methods will help speed up the comprehension process by MBKs so that they are able to master the skills needed to complete the assignment in a well-set time.

Based on the study conducted, the researchers found that there are positive stimuli as a result of the implementation of this Smart Partnership programme that contributes to the

mastery of skills and psychological aspects of the students. Students successfully complete assignments if several important factors, such as doughnut preparation information presentation method by the teacher is easy to understand, adequate equipment for all the students, comfortable workshop size for students to move and having a work table suitable for students to place materials and equipment.

In the aspect of SKM accreditation, it is very important for the students to master each skill well so that the practical test session in the final year of their studies at school for accreditation can be conducted smoothly. JPK has prepared modules arranged according to the requirements of NOSS Bread Making. This arrangement is based on the student's ability to provide a product. In addition, the module is divided into three parts, namely simple, medium and difficult recipes and need to be processed according to the student's ability. Consideration should also be made when it comes to teaching and learning that involves the production of products that take a long time and are unavoidable.

The recipe was given to the students must be detailed because this MBK will follow what is in the recipe carefully. For example, most of the MBK is weak in terms of 3M mastery, namely reading, writing and counting. Therefore, the recipe given should be more of a visual recipe, and including the steps of preparing a product is also visual. Through pictorial steps, MBK is easier to understand and practice in the classroom.

In addition, the module should be equipped with a method of arrangement and storage of information that is used in a more orderly structure to facilitate the process of accreditation of SKM Bread Making to competent students. All information and recipes given will be collected and documented to facilitate students to practice preparing the products learned.

For the purpose of improving the existing practical workshops in the school, this Smart Partnership Programme has provided effective input in helping teachers to select and purchase industry-standard equipment and hardware that meet the specifications set out in NOSS Bread Making. Furthermore, the teaching and learning process can also be strengthened through continuous practical training by using adequate hardware and equipment. The teacher acts as a facilitator who is always ready to guide each student according to their diverse abilities.

Throughout this study, the researchers have identified several factors that contribute to the effectiveness of the implementation of KVS to students, namely:

- a) practical workshops must be equipped with facilities appropriate to the relevant industry, always conducive and appropriate to the number of students;
- b) the equipment needed for practicals must be sufficient so that students are not left behind in any learning content.

While the aspects that need to be improved by teachers are:

- a) the competence of teachers as teachers in schools should be given priority;
- b) The use of soft skills should be used.
- c) teachers need to have credentials and recognition from the JPK in order to master the content of the subject well and be able to choose the best techniques to help students to be proficient in each CU under NOSS Bread Making.

Researchers will implement improvements to ensure that the programme is carried out to meet the set standards and can be used as a benchmark for other schools.

## 5. Conclusion and Recommendations

The smart partnership project carried out is very suitable to be carried out by involving MBK in the learning of Vocational Skills to determine the direction of their careers according to their respective areas of ability. Their learning experiences are based on an experience-based theory by David Kolb (1984) that emphasizes learning through individual experience. involves the application of theory to actual practice for the process of understanding learning in a more effective direction. Through this theory of experience, learning runs in stages according to rounds to ensure that it achieves the set objectives.

Overall, this project can be implemented successfully and have a positive impact on the implementation of the KVS curriculum in schools. The factors that influence the effectiveness of this project are careful programme planning, the readiness of teachers and students to master vocational skills and the involvement of parents, schools and Hulu Selangor Community College who always provide support to ensure MBK in their field. Smart partnerships can also be continued by involving more professionals and agencies that can enhance the potential of MBK.

The experience gained during the implementation of the study has given the idea to the researcher to produce the Smart Partnership Module Ring & Roll, Twist Long John, which can be used as a guideline for the implementation of the KVS training programme for teachers involved with PdPc MBK.

The implementation of this Smart Partnership Programme is also expected to help all parties run the programme to produce MBK that is competitive and has a high marketability value. The success of implementing the Smart Partnership programme with industry experts will have a significant impact on Students with Special Needs (MBK) to better face their future not only in the field of bakery but also in the various fields in which they are involved.

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## PERKINS QUALITY INDICATORS: A METRIC TO MEASURE, SUPPORT & DOCUMENT GROWTH IN PROGRAM QUALITY

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### ABSTRACT

The Perkins Quality Indicators (PQI) provide a metric to measure, support and document growth in program quality for programs serving children and youth with multiple disabilities. The Perkins Quality Indicators are a tool designed to be used to assess a program by identifying current good practices and areas for improvement to aid in planning for program growth. Program staff may use the PQI for self-reflection, evaluation and planning. The tool may also be used by program administrators and external evaluators, in collaboration with program staff. The PQI support development of priorities for both teacher professional development and school-based development, at individual, local, district, division, regional, and national levels, and document growth of an educational program over time. The PQI address 9 areas: building community/ inclusive culture, program planning and classroom organization, learning environment and materials, communication and social relationships, assessment and progress monitoring, curriculum and instruction, family support, administration and support, and governmental collaborations. The PQI can be adapted for specific cultural contexts. In 2020, Perkins International collaborated with the Philippines Department of Education and partners in the Philippines to adapt the PQI for the Philippines educational context. This paper will describe the collaborative process used to adapt the PQI for programs serving students with sensorial disabilities in the Philippines, with the subsequent endorsement by the Philippines Department of Education.

**Keywords:** measure/support program quality, multiple disabilities

### 1. Perkins Quality Indicators:

The Perkins “*Quality Indicators for Programs Serving Students who are Blind and Visually Impaired with Additional Disabilities or Deafblindness*” (PQI) provide a metric to measure, support and document growth in program quality for classrooms, schools or other educational settings serving learners with multiple disabilities, visual impairment with additional disabilities and deafblindness (MDVI/DB). The Perkins Quality Indicators are a tool designed to be used to assess a program by identifying current good practices and areas for improvement to aid in planning for program growth. Program staff may use the PQI for self-reflection, evaluation and planning. The tool may also be used by program administrators and external evaluators, in collaboration with program staff.

The PQI support development of priorities for both teacher professional development and school-based development, at individual, local, district, division, regional, and national levels, and document growth of an educational program over time. The Perkins Program Quality

Indicators are a result of extensive discussion between professional staff at Perkins International and respected colleagues from around the globe, and have been piloted and implemented around the world for 10 years, with ongoing updates.

### **1.1 Track Program Progress and Replicate Excellence:**

Perkins International partners with programs to achieve excellence by coaching teachers, administrators, and staff in educational settings, measuring progress along the PQI scale: Beginning, Needing Improvement, Initiating Good Practice, Emerging Good Practice, Good Practice, Model Program. Some Model Programs have potential to achieve impact that goes beyond modeling best practices in education- with intense support and coaching they become Teaching Programs that reach out and share with other programs to lead a national culture of excellence.

### **1.2 Adaptation to Specific Cultural and Programmatic Contexts:**

The Perkins Quality Indicators can be adapted for specific cultural and programmatic contexts. In 2020, Perkins International collaborated with the Philippines Department of Education and partners in the Philippines to adapt the PQI for the Philippines educational context. This paper will describe the inclusive and collaborative process used to adapt the PQI for programs serving students with sensorial disabilities in the Philippines, with the subsequent endorsement by the Philippines Department of Education.

### **1.3 Summary of Strands (Areas of Program Assessment):**

The PQI are comprised of nine (9) stands as described below. Each strand includes specific indicators, and components of indicators. Detailed scoring criteria for each indicator and component are included.

**1.3.1 Building Community/ Inclusive Culture** is when the overall culture of the school includes patterns of behavior, values, and embedded beliefs and assumptions that are shared in an integrated system of academic and social supports that ensure learners with disabilities are valued, respected and included in all aspects of school with same-age peers. Supports for learners are designed, implemented and monitored to ensure that they receive an exemplary education (Brown, McDonnell & Snell, 2016; DiPaola, M., Tschannen-Moran, M., & Walther-Thomas, C., 2004). These inclusive values are embedded across all of the following strands.

**1.3.2 Program Planning and Classroom Organization** are key areas that allow programs to address the different characteristics and needs of the diverse population of learners with MDVI/DB. Since each child is unique, teaching should be individualized and based on the specific needs of the individual child. These areas allow teachers to implement a child-centered approach, in which educational practices are individualized, flexible, respectful of, and responsive to each learner.

**1.3.3 Learning Environment and Materials:** Adapted and accessible environments and materials are important to maximize learning. Physical barriers, poor accessibility conditions, and lack of access to appropriate learning materials are serious barriers to learning for children with MDVI/DB.

**1.3.4 Assessment and Progress Monitoring:** Assessment is the foundation for providing effective instruction; formal and non-formal assessments are essential components in education of learners with MDVI/DB. Assessments provide teachers with the relevant information to decide what should be taught, and what teaching methods to use. Progress Monitoring involves regularly keeping track of learner progress in meeting goals in order for teachers to effectively plan for instruction.

**1.3.5 Communication and Social Relationships:** Communication is the foundation of all learning. The development of communication and social skills for learners with MDVI/DB is key for their meaningful learning and socialization and therefore critical to quality programs. Teachers should be fluent in different modes of communication and support a total communication approach so they enable their learners to communicate in meaningful ways.

**1.3.6 Curriculum and Instruction:** Meaningful curriculum is core to learning. Accessing curriculum is key for learners with MDVI/DB so they can have an education on an equal basis with others. Indicators and their components are based on the principles of universal design for learning and differentiated instruction. The “Expanded Core Curriculum” (ECC) addresses additional essential learning areas for learners with MDVI/DB. Functional adaptations to curriculum are also essential so learners can acquire the necessary non-academic skills for achieving a fulfilling and independent life. Effective and individualized instructional supports, delivered by all staff, are essential for learning.

**1.3.7 Family Support:** Building partnerships with families is essential to quality programs that serve children with MDVI/DB. Families know their children best and play a key role in the education of their children. It is important to include, support and empower families by building trusting relationships, including families as partners in the education of their children, maintaining open communication with families, and offering trainings.

**1.3.8 Administration and Support:** Management and administration play a key role in quality programs as they determine the culture and approach to education. An enabling administration is one that promotes and supports the right to education of all children at all levels. A supportive administration also supports teachers and their continuing professional development.

**1.3.9 Governmental Collaborations:** Quality education for learners with MDVI/DB can only be enhanced if educators have the support of school leaders, government authorities, and the community. Collaboration between government and schools is essential to enhance the quality of education for learners with MDVI/DB. Disability related policies are foundational to high quality education, as well as a legislative framework that turns the right to education into action for learners with MDVI/DB.

#### **1.4 Evaluation Criteria and Reporting:**

The PQI cover nine (9) strands or key program areas as described above; each strand contains a number of indicators, some with multiple components. A recording worksheet allows for recording of ratings and comments for each indicator by evaluators, and a summary of ratings both by strand and for the overall program. Detailed criteria are included for each rating. This supports documentation of the current level of each program, documents growth of each program over time, and supports development of evidence-based teacher and school development plans.

Most indicators are scored using a standard 5-point scale as defined below:

**1.4.1 Good Practice:** Practice is effective and could be replicated in another program.

**1.4.2 Emerging Good Practice- Fully Implemented:** Practice is correct and acceptable but could still use improvement before it can be recommended for replicability. Practice has been in place for at least one year, and is implemented by more than one staff person.

**1.4.3 Initiating Good Practice:** Practice is correct and acceptable but could still use improvement before it can be recommended for replicability. Practice has recently started, has been in place for less than one year, and/or is implemented by only one staff person.

**1.4.4 Needing Improvement:** Some attempt is being made, but practice is inconsistent or used inappropriately.

**1.4.5 Not Implemented:** Practice is not observed in situations where it should be observable.

**Not applicable:** The indicator is not relevant in this situation.

#### **1.5 Application during Education in Emergency Situations (e.g., Pandemic, Virtual/ Remote Education):**

The PQI were originally developed with in person educational programs in mind. We recognize, however, that much of the world remains in an “education in emergency” situation, including virtual/ remote education, due to the COVID pandemic. We must be flexible and nimble in responding to the current pandemic situation, developing innovative and creative ways to continue to provide quality education to children with multiple disabilities, and to support the myriad needs of our children and their families during these challenging times.

The PQI can be adapted for use during an “education in emergency” situation. Each of the indicators describe specific components of what a “quality educational program for learners with MDVI/DB” looks like. When implementing the PQI during an “education in emergency” situation, it is important to look carefully at each indicator and the evaluation criteria, and think creatively with the evaluation team (including teachers and families) about how this concept could be applied and implemented during the present situation. The comments section of the scoring workbook can be used to document adaptations and how the indicator is evidenced during “education in emergency” situations, as needed.

## **1.6 Adaptation of PQI for Learners with Sensorial Disabilities in the Philippines<sup>1</sup>:**

There is a shortage of educators who are trained to work with children with sensorial disabilities in the Philippines. And to date there have not been standards and indicators for what a quality educational program serving learners with disabilities looks like in the Philippines. Having an agreed upon set of quality indicators for educational programs serving learners with sensorial disabilities provides an essential tool for program improvement, and a clear “road map” for systematically planning for program improvement.

The “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” Tool, for use in the Philippines, is a set of indicators that point to the quality of services provided in classrooms, schools or other educational settings that serve learners with sensorial disabilities. They are adapted from the Perkins International “Program Quality Indicators” (PQI), with additions and revisions based on a comprehensive review of research, evaluation results from 2019 and 2020 international implementation of the PQI, and comprehensive review and feedback from the Philippines working group (comprised of Supervisors, Division Supervisors In Charge of SPED, Principals, and Regional SPED Supervisors).

The initial PQI Philippine development workshop, the subsequent validation session, and the follow-up training included broad participation across the education sector, including Department of Education Regional officials, Division Supervisors In-Charge of Special Education, Principals, Personnel from Department of Education Central Office, Regional Special Education Supervisors, and teachers of the three Gabay project sites: Batangas City and Province, Sorsogon City and Province and Maasin City and Southern Leyte. It provided a valuable professional opportunity for the selected participants to work together with Perkins International expert consultants to revise and contextualize the PQI, and develop “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” specifically for the Philippines.

## **2. Project Goal and Objectives:**

The project goal was to improve program implementation of blind, deaf and deafblind learners by providing schools with Quality Indicators for Programs Serving Students with Sensorial Disabilities.

Specific objectives included:

1. Identify quality indicators for programs serving students with sensorial disabilities based on Perkins identified areas;
2. Validate the above output and revise based on feedback;

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<sup>1</sup> The adaptation of the PQI for the Philippines is supported by project Gabay (Guide): Strengthening Inclusive Education for Blind, Deaf and Deafblind Children of the Resources for the Blind, Inc. (RBI) with its Sub-Awardee, Perkins School for the Blind/Perkins International, USA. Gabay is made possible through the generous support of the American people through the United States Agency for International Development or USAID.

3. Provide training and develop action plans for implementation of quality indicators; and
4. Obtain approval of the final output from the Undersecretaries of Curriculum and Instruction and Planning Service, Human Resources and Organizational Development.

### **3. Adaptation Process and Results:**

#### **3.1 Highlights of the Process**

The Perkins Quality Indicators were adapted for the Philippines context, resulting in the development of “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” in the Philippines. Perkins International and the Philippines Gabay team led the comprehensive and inclusive development process. Following is an outline of the steps in this adaptation and development process:

##### **3.1.1 Adapted from Perkins International “Program Quality Indicators” (PQI))**

- a. 2010: PQI Developed by Perkins International professionals and global Colleagues
- b. 2010-2020: PQI piloted and implemented globally, with ongoing updates
- c. 2019: Revised Perkins Program Quality Indicators
- d. 2018-2020: Latin America in depth implementation
  - i. Collaboration with Ministries of Education Mexico, Argentina, Brazil
  - ii. Development of Model Programs

##### **3.1.2 Philippines Development Process: Quality Indicators for Education Programs Serving Learners with Sensorial Disabilities:**

- a. Develop Draft #1 Philippines Quality Indicators\_(Perkins International)
  - i. Based on Perkins Program Quality Indicators
  - ii. Revisions based on global implementation and evaluation of extensive Latin America implementation 2018-2020; and
  - iii. Comprehensive review of research
- b. Philippines Working Group: Comprehensive review and feedback, contextualizing Quality Indicators for Philippines; Develop Draft #2
  1. Supervisors, Division Supervisors in Charge of SPED, Principals, Regional SPED Supervisors in collaboration with Perkins International and Gabay team
- c. Department of Education Validators: Comprehensive review and feedback (in collaboration with Perkins International and Gabay team); Develop Draft #3
- d. Administrator Training on Implementation of Quality Indicators for Education Programs Serving Children with Sensorial Disabilities
- e. Presentation of Quality Indicators to Department of Education, with subsequent endorsement by Department of Education

### 3.2 Results

As a result of this comprehensive and inclusive development, review, revision and validation process, agreement was reached on a set of “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” to be implemented in educational programs in the Philippines. The Department of Education has endorsed the “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities”.

All project objectives were met, specifically:

1. “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” was developed and revised for Philippines context with a working group of Philippines educators and Department of Education officials.
2. A reporting format for implementation of the Quality Indicators was developed.
3. “Guidelines on the Use of Quality Indicators for Education Programs Serving Learners with Sensorial Disabilities” were developed and agreed upon.
4. Department of Education Validators reviewed and approved the “Quality Indicators” and “Guidelines on Use”.
5. Training participants were oriented on the use of the “Quality Indicators” and developed action plans for implementation of the “Quality Indicators”
6. “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” was presented to Philippines Department of Education and endorsed by the Undersecretaries of Curriculum and Instruction and **Planning** Service, Human Resources and Organizational Development, Philippines Department of Education.

## 4. Learnings and Participant Observations

**Active engagement of participants:** Workshop and Training participants were actively engaged throughout the process, asking questions, requesting clarifications, and suggesting revisions in order to develop consensus on a comprehensive set of “Quality Indicators for Programs Serving Learners with Sensorial Disabilities” that is applicable in the Philippines context. The multi-step, comprehensive and inclusive development process resulted in agreement on a set of Quality Indicators that will provide an essential tool for program improvement in Philippines. This comprehensive development process included: a) development of draft Quality Indicators by Perkins International, b) review and revision of Quality Indicators by Workshop participants, c) validation of Quality Indicators by Department of Education officials, d) training for administrators and teachers on implementation of Quality Indicators, and e) presentation to Department of Education.

***In the words of workshop and training participants:***

“I personally commend the expertise of our training facilitators in guiding very well the participants in going through the different aspects of the activity. The openness they exhibited on the comments that we gave and for accepting those ideas. I know very well that the content of the Matrix were well formulated by experts but still this were critical to fit in the Philippine context of Education...the participants were very active in sharing ideas just to come up with the workable indicators.” (School Principal, Maasin City, Southern Leyte)

**An essential tool to guide program improvement and support program administrators:** The “Quality Indicators” provide a valuable tool to guide and support program improvement. The comprehensive indicators, with very specific rating criteria, provide administrators, including those who may have limited experience in educational programs for learners with sensorial disabilities, with the tools to support and lead program improvement efforts at their schools.

***In the words of workshop and training participants:***

“During the training, I acquired new information and new experience. I would like to commend all the facilitators, the host, the trainers... that despite of the new normal setting of learning new things because of this pandemic and despite of the different time zone, still they manage the training so well and they provide all the necessary information that we will be needing to our school...I am very glad about the fact that this tool could be very effective and useful on assessing a program and identifying practices in dealing with children with disabilities and I know that this would bring a very big help to us. So truly...the adaptation of this tool could be very essential in improving the quality of basic education because no learner should be left behind regardless of his condition.” (Teacher II, Division of Sorsogon)

“It is the first time I attended this kind of training. Before participating in this training, I am hesitant because I still don’t have the experience in observing special education classes...I was only assigned to a school with a special education class five months ago, but as the workshop and now the training goes on, my thinking radically changed. It deepened my understanding that these learners are also like us and they need special attention. Believing on thought that everyone has the right to education. This training also reminds, not only education supervisors but also especially us School Administrators that we have many things to plan, prepare and to do to effectively address the educational needs of these special learners. I am thankful for the chance and opportunity to learn more on how we could possibly facilitate effective learning for these learners.” (School Principal)

“...There are the AHA moments for me. The three salient points I gave from this webinar are: RELEVANCE, EQUITY AND RIGHTS. The RELEVANCE of the tool to the initial operation of my school will give me an edge to start it right for I already have the quality indicators at hand. It will provide information from Inclusive Culture down to the Governmental Collaboration which can be used for improving and enhancing the program implementation in each of our respective schools. Secondary to this is EQUITY. With the help of Quality Indicators, as a School Head, I am now visualizing and looking for ways or for the process to ensure that every child with disabilities needs understanding of his or her unique capabilities, limitations and deterrent advancement by providing additional support. These challenges and road blocks will be overthrown. Although its outcome is uncertain, it gives every child a fair chance and even equal opportunity in achieving their goals and dreams. Then, the RIGHTS. In our Philippine Constitution, it is clearly stated that every child with special needs has the right to an educational program that is suitable to his needs. The program strongly supports this and I acknowledge the very core of protecting, enhancing and uplifting our due diligence in enforcing the child’s rights, access good, quality education. We are now on the right track! Relevance, Equity and Rights rolled into Quality Indicators. Quality Indicators for a quality and better Philippines.” (School Principal, Southern Leyte)

## 5. Recommendations

The Quality Indicators provide a unique and valuable tool, specifically adapted for the Philippines context, to guide program improvement for educational programs serving learners with sensorial disabilities. There is strong potential to leverage the collaborative work accomplished to date and significantly expand impact. Recommended next steps include technical assistance to a) support initial implementation of the Quality Indicators, b) review results of pilot implementation in initial schools, c) make any revisions indicated by implementation in initial pilot schools, and d) support implementation of Quality Indicators at additional schools.

## 6. Conclusion:

The Perkins Quality Indicators (PQI) provide a metric to measure, support and document growth in program quality for classrooms, schools or other educational settings serving learners with multiple disabilities, visual impairment with additional disabilities and deafblindness (MDVI/DB). The PQI are a tool designed to be used to assess a program by identifying current good practices and areas for improvement to aid in planning for program growth.

When combined with a systematic and targeted professional development plan, including targeted technical assistance and coaching, the PQI provide a powerful tool to support development of a national culture of excellence, including development of model programs that can demonstrate excellence in teaching. Some Model Programs have potential to achieve impact that goes beyond modeling best practices in education- with intense support and coaching they become Teaching Programs that reach out and share with other programs to lead a national culture of excellence.

This global tool can be adapted for specific cultural and programmatic contexts. Perkins International and the Philippines Gabay team led a comprehensive and inclusive development, review, revision and validation process, resulting in agreement on a set of “Quality Indicators for Educational Programs Serving Learners with Sensorial Disabilities” in the Philippines, which has been endorsed by the Philippines Department of Education.

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## IMPLEMENTATION OF THE SMART SOLAT CAMP FOR SPECIAL NEEDS STUDENTS IN YAN DISTRICT

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### ABSTRACT

Learning in Islamic Education is the ultimate goal in enhancing the character and faith for muslim's students. Among the things that are emphasized in the subjects of Islamic Education is the prayer of worship. Children with special needs are not exempt from performing prayers as long as fulfilling obligations and can perform solah just as much as they can. Parents and teachers play a role in guiding children with special needs so they can perform the prayers. This study aims to examine the approaches used by teachers of Islamic education in implementation of the worship service through the Special Education Smart Prayer Camp Model which is available in the J-QAF programme at three Special Education Class Learning (SECL) in Yan district involving special education teachers of Islamic education. The servay methodology used interviews and observations to involve qualitative data. Because of that, the implementation of the J-QAF programme in Special Education is one of the government's initiatives to special needs students. The J-QAF's programme is part of the efforts of the Special Education Division to produce human capital and further the gap education that is the goal of the Ministry of Education Malaysia.

**Keywords:** Islamic education, solah, Special Education Smart Prayer Camp, j-QAF

### 1. Introduction

Every child is born with a different intelligence that allows the child to learn and adapt to the environment. This intelligence of the mind is based on the perfect senses and will help children explore things around them better. In order to produce knowledgeable and independent individuals, children from an early age should need a beneficial educational process because learning from such education is something that begins with stimuli received from the senses which are then processed through psychomotor and finally stored as knowledge and experience. (Mohd Sharani 2004). No less so for children with special needs, the basics and values of religion are also important to be inculcated and practiced for the purpose of enslaving themselves to the divine nature. The main basis that is highly emphasized is the practice of prayer that is symbolic to Muslims regardless of individuals with special or typical needs (Hamdi 2011).

There are many problems associated with students with special needs who still do not practice prayer even at the basic level. This refers to the achievement statistics of students with special needs with learning difficulties in the subject of Islamic Education in the field of prayer worship in the teaching and facilitation session (PdPc) the lowest and lowest with a blank achievement percentage (Examination Board 2003).

## 1.1 Problems Of The Study

Research problems are very important in a study that involves the reason or reason for the research is conducted. Through this study, researchers found that there are still many students with special needs who have not mastered the basics of prayer even though they are 12 and 13 years old. This matter is considered a concern because students with special needs who study in KPKP schools should have the potential to improve their abilities at least at the basic level.

The main problem that arises stems from parents who play a big role in guiding and educating children to get used to performing prayers in daily life. Religious values in a child are inculcated starting from the education of parents from birth. As the Malay saying goes, let the curved bamboo shoots. Parents who begin to shape their children to either be pious human beings or vice versa (Zainuddin & Norazmah 2011). Due to this problem, it was found that the implementation of the Bestari Solat Special Education Camp in schools experienced several constraints, among others through the factor of the arrival of students who did not attend the Bestari Solat Camp program. This may be due to the perception of the parents of students with special needs themselves who assume that children with special needs do not need prayer and are guaranteed heaven.

Prayer is a pillar of religion. Thus, every Muslim individual should carry out the duties that have been commanded by Allah s.w.t. Prayer acts as a strengthening wall to the awakening of Islam. In addition, the success of a religion depends on the strength of its adherents' worship. Every Muslim is obliged to establish prayers even in any physical situation, place and atmosphere, so that in war situations it is also obligatory to establish prayers (Al-Ghazali 1994). Similarly, those involving the limitations of a person's physical and mental condition, such as students with special needs, are not spared in fulfilling the obligation of prayer so that they also get the same or more benefits than typical children.

Therefore, considering that the Ministry of Education Malaysia places great emphasis on the Special Education Smart Prayer Camp (KBS) Model Program in improving and advancing the mastery of Islamic Education subjects in Special Education. Therefore, a detailed study is needed to identify the improvement and mastery of students with special needs through the implementation of the Special Education Smart Prayer Camp (KBS).

## 1.2 Objectives Of The Research

This study aims to find out the practices, perceptions and problems faced by Islamic Education teachers in Special Education Learning Classes (KPKP) in implementing the Special Education Prayer Smart Camp Model Program.

The Smart Prayer Camp Model Program for Students with Special Needs in particular, the objectives of this study are:

1. To identify the practices or approaches of Special Education Islamic Education teachers in Yan District in implementing the Special Education Bestari Solat (KBS) program.
2. To know the teacher's perception of students' interest in the involvement of KBS Special Education program.
3. Identify the problems faced by teachers for students with special needs in the implementation of the KBS Special Education model program.

### 1.3 Research Questions

Based on the objectives of the study, the results of this study in response to the following questions:

1. What is the approach of Special Education Islamic Education teachers in Yan District in implementing the KBS Special Education program.
2. What is the teacher's perception of students' interest in the involvement of the KBS Special Education program.
3. What are the problems faced by teachers for students with special needs in the implementation of the KBS Special Education model program.

## 2. Research Methodology

This study uses a qualitative research approach. Special Education Islamic education teachers were selected by the researcher as respondents of the study involving three schools of Special Education Learning Class (KPKP) in Yan district, Kedah. The selected schools are in rural areas where the distance of each school is not very far, about 5 to 10 kilometers. Because the study respondents did not involve many people, the researcher used observation and interview instruments to obtain the study data.

This study uses a descriptive qualitative approach. Research that uses descriptive studies aims to describe the conditions and phenomena that occur in a study (Majid 2005). The design of this study is to obtain the relationship between the variables that have been stated by the researcher. The study design that is usually used to provide a systematic description of the facts or characteristics of a population or field of choice precisely is a descriptive study design (Sidek 2005).

Studies that use observation and interview methods are qualitative in nature because they are usually more accurate and state the actual situation of the study being implemented.

## 3. Findings Of The Research

Table 1 discusses the background of Special Education Islamic Education teachers viewed in terms of gender, as many as 3 people (50%) are male teachers and the rest are female teachers (50%). While in terms of the age range of Special Education Islamic Education teachers is between 30 to 50 years. Overall, the majority of Islamic education teachers in special education are in the age range of 30 to 40 years (66.7%). This was followed by only 2 people (33.2%) of them aged between 41 to 50 years.

In terms of position status, Special Education Islamic Education teachers with a permanent status are all inclusive (100%). However, it differs in terms of the level of approval obtained. A total of 3 (50%) Special Education Islamic Education teachers have a Diploma in Education through Postgraduate Teaching Courses, while 1 (16.7%) Special Education Islamic education teachers have a Bachelor of Education (ISMP). The rest are 2 teachers (33.3%) with a degree in Education Course Mode During Holidays (KDC).

In terms of experience teaching Islamic education in special education, only one (16.7%) teacher has 4 years of teaching experience. Then followed by 2 people (33.3%) teachers with teaching experience for more than 5 years. While a total of 3 people (50%) who have been teaching for more than 9 years.

The Islamic Education teachers who teach Special Education Classes (KPKP) in this study all have academic qualifications and are holders of bachelor's degrees from various institutions of higher learning. Only one (16.7%) teacher continued his studies abroad from Al-Azhar University, Egypt while the rest with a majority of 5 people (83.3%) were students from within the country or local universities. While studying at Institutions of Higher Learning, the specialization taken by Islamic education teachers who teach in Special Education classes is Islamic Studies which is 4 people (50%), followed by specialization in Arabic only one (16.7%) and specialization in Education Islam is also one (16.7%). For teachers who have a degree in Islamic Studies and Arabic is required to take a Diploma in Education at any Institute of Teacher Education as the main condition to work in the field of teaching.

*Table 1: Latar Belakang Guru Pendidikan Islam Pendidikan Khas*

Perkara		F	%
Jantina	Lelaki	3	50
	Perempuan	3	50
Umur	30-40 tahun	4	66.7
	41-50 tahun	2	33.3
Jawatan	Tetap	6	100
	Latihan	0	0
	Sandaran	0	0
Pengalaman mengajar pendidikan Islam di Pendidikan Khas	4 tahun	1	16.7
	5-8 tahun	2	33.3
	9 tahun ke atas	3	50
Tahap Pendidikan Tertinggi (Akademik)	Diploma	0	0
	Ijazah Sarjana Muda	6	100
Universiti	Luar Negara	1	16.7
	Tempatan	5	83.3
Pengkhususan	Pengajian Islam	4	66.7
	Pendidikan Islam	1	16.7
	Bahasa Arab	1	16.7

Findings obtained from the views and monitoring of Special Education Islamic education teachers on the interest of students with special needs with learning difficulties towards the Bestari Solat Camp program as a whole showed that, most (66.7%) of Islamic education teachers who teach Special Education informed that students showed interest in participating in the Bestari Camp Special Education Prayers. Teachers (83.3%) were also able to identify that the students also showed seriousness in each activity carried out in the KBS. In addition, there are a handful of students who are able to dare to ask questions if there is confusion and lack of clarity about manners and the correct way to establish prayers (50%).

Teachers responded to questions about the response of students with special needs regarding their interest in the suggestions and instructions to perform the midday prayer at school before returning home. As a result of the action, there are 2 people (33.3%) Islamic education teachers told the researcher that there are students who are less interested in performing prayers in school. Therefore, the

initiative to implement the Bestari Solat Camp for students with special needs with learning difficulties can be used as an initiative for students who are less interested in praying. There are 66.3% of teachers who are able to discipline students to perform prayer activities through this program. Table 2 shows the detailed information of the findings on teachers' perceptions regarding the interests of students with special needs with learning difficulties when participating in the Bestari Solat Camp.

A survey of the interests of students with special needs through their participation in the Bestari Solat Camp program through the perceptions of Special Education Islamic education teachers and they also contributed ideas on approaches taken to attract students in learning the theory and practice of prayer. The majority of special education Islamic education teachers (83.3%) stated that they would observe the behavior of each student in the practice of prayer. They (66.7%) also strongly agree or agree that the use of study aids can attract students to prayer activities. In addition, all (100%) Special Education Islamic education teachers allocate more time to strive to increase the feelings of love and interest of students with special needs with learning difficulties in performing worship and prayer activities either outside or in the classroom.

*Table 2: Persepsi Guru Pendidikan Islam Pendidikan Khas Terhadap Minat Murid dalam Model Kem Bestari Solat Pendidikan Khas*

Pernyataan	Tidak setuju		Kurang setuju		Tidak pasti		Setuju		Amat setuju	
	f	%	f	%	F	%	f	%	F	%
Murid suka mengikuti program Kem Bestari Solat	0	0	0	0	1	16.7	1	16.7	4	66.7
Murid mendisiplinkan diri ketika aktiviti solat	16.7	1	1	16.7	0	0	2	33.3	1	33.3
Murid-murid bersungguh-sungguh menunaikan solat	0	0	0	0	1	16.7	0	88.3	0	0
Murid-murid menyoal cara-cara menunaikan solat dengan sempurna	0	0	2	33.3	1	16.7	3	50	0	0
Murid-murid tidak berminat menunaikan solat di sekolah	1	16.7	2	33.3	1	16.7	1	16.7	1	16.7

The aspect of imparting knowledge (66.7%) is the main aspect that is emphasized in performing activities related to prayer. Negative reinforcement or fines are also among the approaches used by the majority of teachers (83.2%) to encourage students with special needs with learning difficulties to pray in addition to motivating refer to table 3. However, teachers try to emphasize the aspect of student appreciation and disagree that they emphasize academic achievement only in prayer activities.

*Table 3: Pendekatan Pengajaran Solat*

Pernyataan	Tidak setuju		Kurang setuju		Tidak pasti		Setuju		Amat setuju	
	F	%	f	%	f	%	f	%	F	%
Saya lebih mengutamakan penghayatan berbanding pencapaian akademik murid dalam aktiviti solat	2	33.3	2	33.3	0	0	1	16.7	1	16.7
Aspek utama yang saya tekanan dalam aktiviti solat ialah aspek pengetahuan	0	0	1	16.7	1	16.7	3	50	1	16.7
Saya memerhatikan perlakuan murid dalam amalan solat mereka	0	0	0	0	1	16.7	2	33.3	3	50
Penggunaan BBB dapat menarik minat murid terhadap aktiviti solat	0	0	1	16.7	0	0	2	33.3	2	33.3
Konsep peneguhan negatif sebagai antara galakan melakukan amalan solat	0	0	0	0	1	16.7	3	50	2	33.3
Saya menyediakan peruntukan masa yang lebih bagi menarik minat murid dalam aktiviti solat	0	0	0	0	0	0	4	66.6	2	33.3

Based on table 5, it is found that, overall, the Bestari Solat Camp for students with special needs with learning difficulties went smoothly and well according to plan. Most (83.3%) of Special Education Islamic education teachers agreed that the schedule of the Special Education Smart Prayer Camp program arranged at the school level was appropriate for the place, in addition to the number of students present and the appropriate time allocation of 66.7% also agreed. Islamic Education teachers who act as implementers are also satisfied with the support and cooperation shown by the school (100%) and help supervise the Special Education Prayer Smart Camp program such as the provision of places and facilities needed (83.3%). Cooperation from parents (66.7%) had a good impact so that they themselves better understood and helped to diversify the approach depending on the inclinations of the special needs students involved. Other teachers (50%) also play a role in the success of each activity carried out by providing direct cooperation from before, during and after the implementation of the Bestari Solat Camp.

*Table 5: Problems and constraints in the Implementation of the Special Education Prayer Smart Camp*

Pernyataan	Tidak Setuju		Kurang Setuju		Tidak Pasti		Setuju		Amat Setuju	
	f	%	f	%	f	%	f	%	f	%
Ibu bapa sangat memberi kerjasama dalam menjayakan Kem Bestari Solat Pendidikan Khas	0	0	0	0	0	0	3	50	3	50
Saya mudah mendapat bantuan daripada rakan untuk menjayakan Kem Bestari Solat Pendidikan Khas	1	16.7	1	16.7	0	0	3	50	1	16.7
Pihak sekolah turut memberi segala kemudahan yang diperlukan untuk menjayakan Kem Bestari Solat Pendidikan Khas	0	0	0	0	0	0	5	83.3	1	16.7
Saya berpendapat sebahagian besar murid yang bermasalah dalam solat adalah dari kalangan mereka yang tidak pandai membaca al-Quran sekurang-kurangnya surah Al-Fatiha	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7
Ibu bapa menyerahkan sepenuhnya tanggungjawab pendidikan solat kepada guru-guru di sekolah	4	66.7	2	33.3	0	0	0	0	0	0
Di sekolah saya tidak terdapat surau yang selesa untuk kemudahan murid bersolat	4	66.7	2	33.3	0	0	0	0	0	0
Tidak ada peraturan yang mewajibkan murid Muslim bersolat di sekolah	0	0	0	0	0	0	2	33.3	4	66.7
Keadaan persekitaran tidak mendorong murid-murid bermotivasi meningkatkan solat	1	16.7	1	16.7	1	16.7	2	33.3	1	16.7
Pihak sekolah memberi kerjasama kepada saya dalam menjayakan aktiviti solat	0	0	0	0	0	0	0	0	6	100
Secara umum pihak sekolah menganggap tanggungjawab pendidikan solat adalah tanggungjawab guru agama semata-mata	3	50	3	50	0	0	0	0	0	0
Bilangan murid berkeperluan khas yang terlibat dalam Kem Bestari Solat Pendidikan Khas adalah sesuai	1	16.7	1	16.7	0	0	4	66.7	0	0
Bilangan fasilitator adalah mencukupi	5	83.3	1	16.7	0	0	0	0	0	0
Tempoh masa Kem Bestari Solat Pendidikan Khas adalah sesuai dan mencukupi	1	16.7	1	16.7	2	33.3	2	33.3	0	0
Jadual program yang disusun adalah sesuai	0	0	0	0	0	0	5	83.3	1	16.7
Peruntukan kewangan adalah mencukupi	2	33.3	2	33.3	0	0	2	33.3	0	0
Pelaksanaan program berjalan dengan lancar	0	0	0	0	1	16.7	4	66.7	1	16.7
Tempat dijalankan program adalah sesuai	2	33.3	1	16.7	2	33.3	1	16.7	0	0

## 4. Discussion And Recommendations

Based on the findings of the study presented, the Bestari Solat Camp program for students with special needs has a positive impact in improving their identity and developing themselves into pious people. With the existence of this program in series at the school level, can further increase the interest of students to get involved in each activity provided. Next was a success for the teachers and the school administrators themselves for being able to solve the complexities faced as in this study. Through the various approaches highlighted by the teachers, can provide fun to students with special needs to continue to receive all the learning provided. Each student with special needs with different abilities and cognitive is seen and scrutinized on the activities that are suitable for them so that there are no limitations of involvement and leakage of knowledge to them. Such activities are strengthening and rehabilitative activities (Mok Soon Sang 1996).

Play activities that are suitable for students with special needs make teaching and facilitation activities (PdPc) more practical and interesting. Students with special needs will receive learning more effectively when they learn something in line with their needs and interests. Furthermore, the increased use of various learning aids can make the teaching of prayer by teachers more effective and interesting (Ahmad 2004).

Islam places great emphasis on its people to be excellent human beings in this world and the hereafter. Thus, Islamic Education is not merely theoretical and practical learning, but more to the value and appreciation of every moment of life. Teachers of Islamic Education play a major role as a connector to the da'wah and teachings delivered by the Prophet Muhammad s.a.w by the command of Allah s.w.t. As explained in this study, Islamic Education teachers who teach students with special needs with learning difficulties allocate more teaching time outside the classroom to provide exposure in getting used to istiqamah practicing prayer in daily life.

Al-Ghazali (2004) gives the view that the concept of prayer needs to be clearly understood in daily life so that the prayers performed are more meaningful and accepted in charity by Allah s.w.t. Therefore, students with special needs are also not exempted in receiving the revelation of appreciation about prayer so that the prayers performed are not only ritual and behavioral.

Referring to the findings of the study found, support and encouragement from various parties can increase the enthusiasm of teachers to continue to serve as dedicated educators. However, it should be noted that the shortcomings and constraints that exist must be resolved so that the matter does not recur. Preliminary planning needs to be done so that there are no financial problems in the process of implementing the Bestari Solat Camp as well as providing training courses to certain individuals so that there is no shortage of facilitators in each activity carried out.

## 5. Conclusion

The success of a program depends on the individual who implements the program. Thus, through this study found, the Bestari Solat Camp program has a positive impact on improving the ability of students with special needs with learning difficulties. With the cooperation of all responsible parties are able to ensure the

effectiveness in the implementation of the program. As a result, this study is able to achieve the desired objectives of the study.

In order to reduce the limitations and burden of teachers and students with special needs, various efforts and initiatives are made to further strengthen the implementation of the Bestari Solat Camp program get strong support, both materially and morally from various parties. Continuous efforts must be maintained so that the implementation of the Special Education Smart Prayer Camp program shows an increase in cognitive ability as well as behavioral changes for students with special needs.

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# LIVEWORKSHEET: THE EFFECTIVENESS OF QUIZ ASSIGNMENT SUBMISSION AMONG SENP

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## ABSTRACT

This action research was implemented to improve the delivery of assignments by special education needs pupils (SENP) during home learning session for the subject of Information and Communication Technology (ICT). The target group involves 5 SENP Year 4 pupils, SK Jalan Enam, Bandar Baru Bangi, Selangor. This SENP consists of an autistic pupil, a Down Syndrome pupil and three pupils with intellectual disabilities. Preliminary surveys were carried out through reviewing of pupil's work and observations. Preliminary survey results showed that SENP did not submit the assignments that they were supposed to do. Researcher used Liveworksheet digital application to overcome this problem. The instruments used were through observation method, data collection and questionnaires. The results of the study showed that SENP have shown some improvement in submitting the assignments timely and consistently. The implication of this study is that educators can use the Liveworksheet digital application to attract pupils' attention as well as to improve the submission of assignments among SENP. Hence, educators should use variety of other applications of game-based systems during home learning and continue to seek out these innovative approaches. SENP really enjoy the online digital application as determined from verbal feedback and their request in play Liveworksheet.

**Keywords:** Liveworksheet, special education need pupil, ICT, home learning

## 1. Introduction

Nowadays, technology continues to grow rapidly in our culture. Cell phones, laptop, computers, tablets, Smart Boards and televisions are some examples of devices used to obtain and project information. Teachers use technology during home-based learning as an effort to make learning easier to access, creative and fun.

As all teachers are struggling with the new norm, special education teachers in particular are facing unparalleled challenges transitioning both their teaching, pupils and families to home-based instruction tailored to each pupil's needs (Fleming 2020).

Education process is constantly changing. Pupils are no longer required to sit at their desks and take notes during lectures. Now, the lessons are much more interesting and interactive. Interactive learning is a practical and realistic approach to education. Interactive learning actively involves pupils with the material. It enlivens the classroom for both pupils and teachers. Lectures stress more on discussions while pupils and teachers become partners in the process of acquiring knowledge (News Straits Times 2021).

Pupils with learning disabilities often have difficulty in submitting their quiz assignments. In today's technology-driven world, pupils are rarely seen without a technological device such as a cell phone, tablet, or laptop. One potential method that may help special education needs pupils (SENP) to learn accordingly is the usage of technology. It was observed that when technology was introduced as a learning tool during home-based learning, excitement built, and motivation was very high. Technology continues to advance both inside and outside in today's 21st century classroom. According to Musti Rao (2017), when technology is integrated in a meaningful way, the benefits apply to both the teacher and pupils. The specific digital online application used was Liveworksheet which was an online application game-based response system (GSRS). Pupils who are offered technology-based learning will submit their assignments accordingly and perform better than those without the use of technology.

Therefore, the objectives of this study are:

1. Examine the differences in quiz submission among SENP using Liveworksheet
2. Identify the effectiveness of Liveworksheet among SENP

## 2. Literature Review

### 2.1 Special Education Need Pupils

Special Education Need Pupils (SENP) are pupils who find it harder than other pupils to make progress. For this research, SENP refer to the primary school pupils in year 4 who have learning disabilities. These pupils need a specific and appropriate curriculum that can benefit them in developing their individual potential (Heward, 2003).

### 2.2 Liveworksheet

Liveworksheet is an interactive worksheet online with self-correction made by the teachers or users from around the world. It transforms traditional printable worksheets (doc, pdf, jpg) into interactive online exercises with self-correction known as "interactive worksheets" (Liveworksheet 2021).

### 2.3 The Effectiveness of Online Application in Assignment Submission among SENP

Interactive learning is a practical approach that helps pupils become more interested in learning and obtain more material, strengthen their problem solving and critical thinking skills (Novikova et. al 2020). Quizizz, Wordwall and Kahoot! are popular online sites which allow teachers and pupils to create online games and play games created by users from around the world. Sites like Canva allow teachers and pupils to express their creativity through power point presentations, posters, social media and banners.

The results of Pede's (2017) study show that the use of the Kahoot application has enhanced vocabulary learning and understanding in Science subject among SENP. This enhances their concentration and memory so that pupils do not forget quickly because of the features of the software which have interesting pictures, colours and music. This statement is supported by Plump et. al (2017) where the music, colour and fun provided by the Kahoot application can encourage pupils to focus more and to make a positive impact in the classroom.

In Singapore, research conducted by Gloria et. al (2017) on four teachers and four SENP showed that mobilizing training in a digital application may be one means to efficiently adapt evidence-based practices for community settings. This result was in line with research conducted by Grinias (2017) in US on the usage of competitive quiz-based games for comprehensive exam review. It was reported by pupils to be both helpful and fun in a quantitative analysis course. She also recommended developing question banks using the Kahoot! platform. It showed that 50% of US teachers use Kahoot! in order to address the need for flexible and adaptable assessment.

The Liveworksheet platform facilitates free use and development of quiz games, primarily by US middle and high school teachers and their pupils. Teachers can both create their own quizzes as well as access more than 30 million public quiz games available on the Liveworksheet website. Helen Colman (2020) stated that there were nine ways of to assess pupils' learning online. Drag-and-drops are a type of assessment that show a learner's ability to link information and apply knowledge to solve a practical problem. Both images and text in a drag-and-drop activity, giving it a real-world feel that is both challenging and engaging.

These interactive game methods were combined in assignments inspired by Jean Piaget and Lev Vygotsky's Theory of Cognitive Development. According to him, learning can occur through play, formal instruction, or work between a learner and a more experienced learner. Teachers must actively assist and promote the growth of their pupils, so that pupils can develop the skills they need to fully participate in our society. Therefore, interactive quizzes are able to attract SENP to respond and have interest in answering each assignment given using the Liveworksheet quiz. This will increase in assignment submission among SENP.

The interactive quiz approach provides a variety of positive impacts on SENP in developing their potential. The gamification approach enhances the motivation of SENP to continue learning while completing assigned tasks. The findings of the study by Gooch et al. (2016) suggest that the use of 'classDojo' gamification in teaching has increased motivation among dyslexic pupils in primary school. High motivation leads to the achievement and accomplishment of pupils with special needs academically.

According to Abrams and Walsh (2014), pupils can have control over learning with the use of technology because they can choose to play the game again outside of class and could decide the amount of time they wish to spend reviewing the material. Pitchford et. al (2018) stated in his study on 33 primary school SENP in South Africa, that each SENP had made some progress in learning basic mathematics with technology intervention, as all SENP had passed at least one topic included in the apps.

### **3. Methodology**

This study was conducted in Bandar Baru Bangi, Selangor, Malaysia in ICT subject for 10-year-old SENP.

### 3.1 Participants

Five male SENP with different ability level participated in this study. Three of the children were enrolled in special education programme under intellectual disability, one child under Autistic category while another child under Down Syndrome. Their cognitive and adaptive functioning fell within the moderate intellectual disability range. Specifically, the children were recruited based on the less frequent in submitting quiz via Whatsapp group or turn in through Google Classroom.

### 3.2 Data Collection

Three types of data were collected over the two-month period from the SENP through observation, the frequency of quiz submission and questionnaire.

### 3.3 Research Intervention

Before producing the Liveworksheet interactive quiz, a study implementation schedule was prepared in order to see the progress of this study. It was implemented for the purpose of improvement and modification of the planned activities.

*Table 1: Research Intervention*

No	Activity	Date
1.	Identify the SENP problems	15 January 2021
2.	Action Plan – Making Interactive Quiz	25 January - 27 February 2021
3.	Research Intervention	25 January - 27 February 2021
4.	Research Reflection	5 Mar 2021

### 3.4 Making Liveworksheet

Each person can use this Liveworksheet platform to create their own interactive worksheets or use those provided by other teachers. There is a collection of thousands of interactive pages covering many languages and subjects. It's very simple to create your own interactive worksheets in Microsoft Word. Liveworksheets allows you to turn your traditional printed sheets (doc, pdf, jpg, etc.) into interactive online exercises with self-correction, called "interactive worksheets". Pupils can fill in worksheets online and send their answers to the teacher. This is good for pupils (it motivates), for the teacher (it saves time) and for the environment (it saves paper) (Liveworksheet 2021).

The worksheets need to be converted to pdf format. After that, the training in pdf format needs to be uploaded to the Liveworksheet website. The exercise will be done interactively based on picture to word matching or picture to picture matching or word pronunciation based on pictures or spelling words according to SENP level of ability and mastery. There are 3 types of mastery level of pupils, namely:

- a) Group 1 (students A and B): unable to read or write
- b) Group 2 (student C): can recognize and write with the help of the teacher
- c) Group 3 (students D and E): can read and write with minimal teacher assistance

Therefore, 3 types of assignments were provided according to their ability level after the learning session. For SENP who showed improvement in answering questions, they were

allowed to try other assignments (higher level) assigned to their peers. When they have fun doing the assignments, then only they will submit the assignment consistently.

In addition, SENP can perform the quiz at any time and repeatedly according to their own sweet time. This can provide an opportunity for SENP parents and families to find the right time to do the assignment according to their children's mood. It can also attract pupils to complete a given task apart from giving fun to SENP to focus more on play-based learning online.

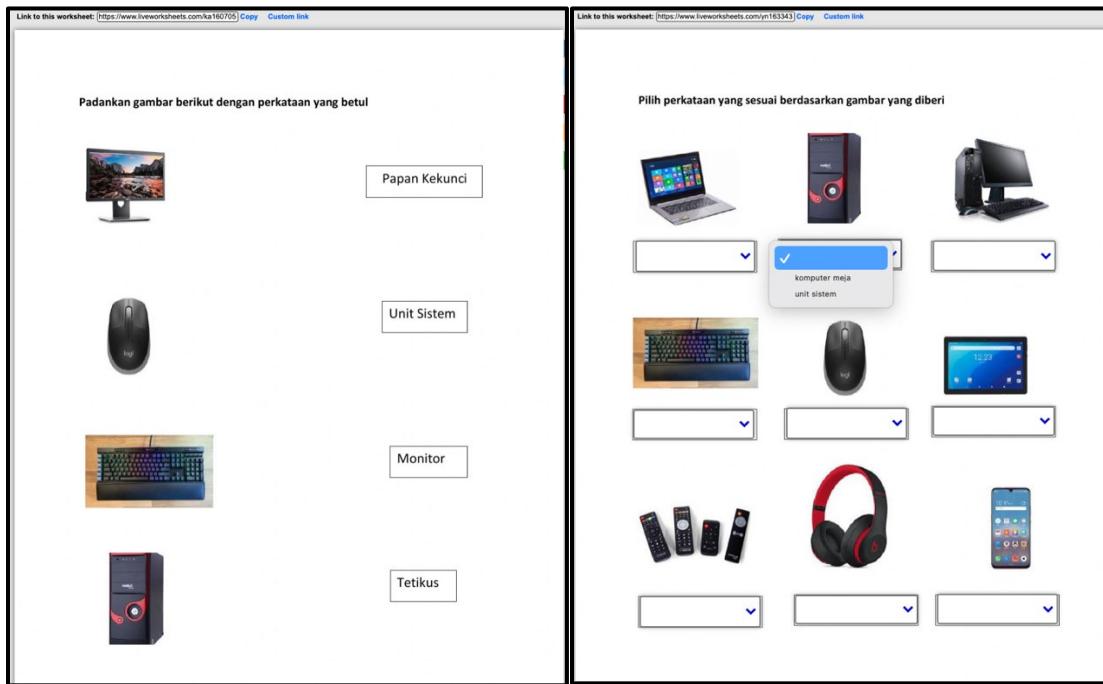
For group 1 who cannot read but can understand through pictures, an exercise in the form of picture matching is given. In addition, the pronunciation can also be heard when pupils click on the word to make it easier for them to listen and follow the pronunciation correctly. They are able to practice it under the supervision of their parents and family. Examples of exercises are as shown in Figure 1 below:

*Figure 1: Click on the speaker, listen to the word and choose the picture correctly*



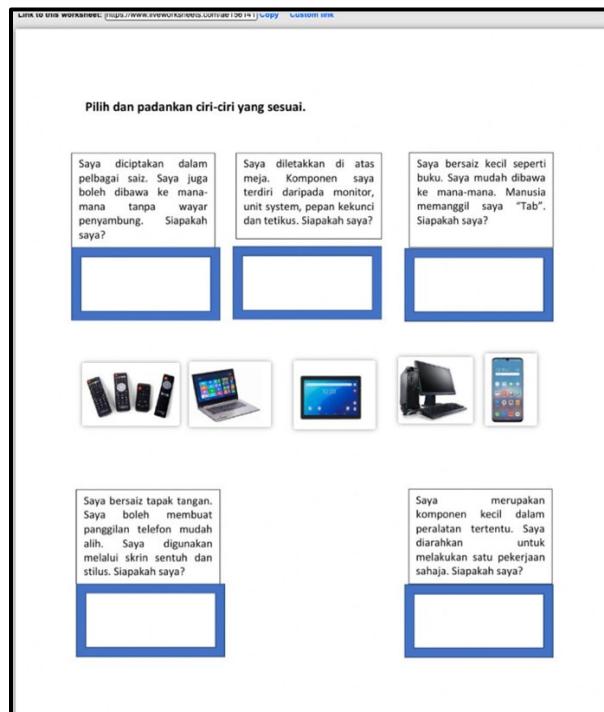
For group 2 who can recognize words, they can adapt to match pictures with words repeatedly. Examples of exercises are as in Figure 2 below:

*Figure 2: Match the words and picture, Choose the correct answer based on the picture*



For group 3, they will click on the correct answer choice based on the given picture. They also match the pictures to the functions of the equipment. Examples of exercises are as shown in Figure 3 below:

*Figure 3: Match the picture based on the devices' function*



In addition, such interactive worksheets take full advantage of new technologies used in education: they can include sounds, videos, drag and drop exercises, arrow connections, multiple choice and even oral exercises that pupils must perform with a microphone.

## 4. Results

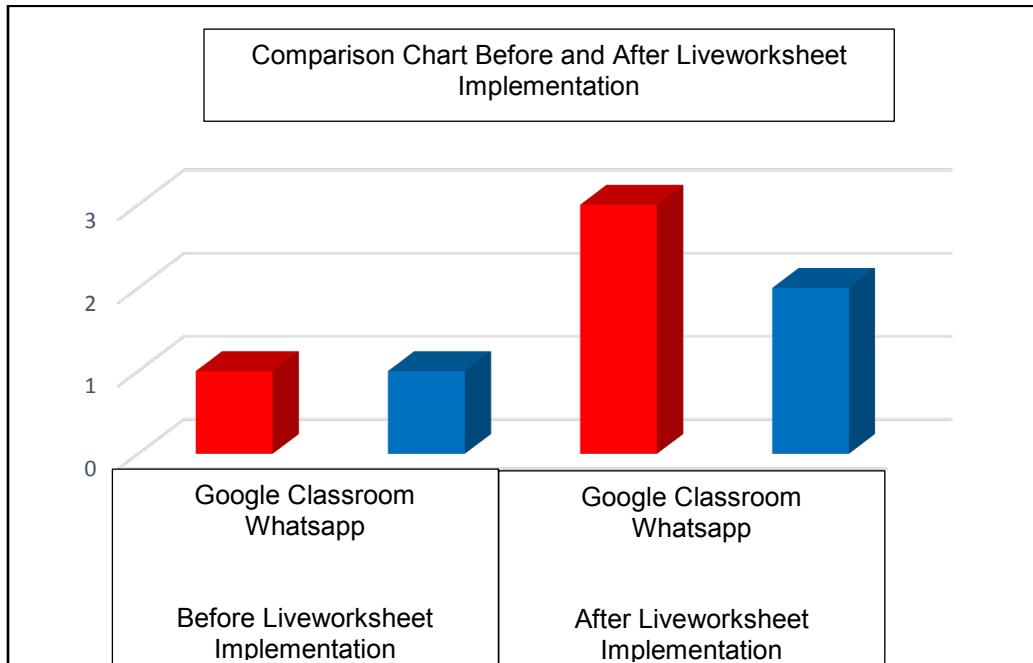
The purpose of this study was to examine the effectiveness of the digital application Liveworksheet in assignment submission among SENP in ICT subject.

Based on the observation method and assignments submitted through Google Classroom and Whatsapp, pupils were excited to submit assignments as it is fun to play while learning through interactive quizzes using this Liveworksheet platform. The data was analysed based on the frequency of assignments submission. A comparison before and after the Liveworksheet implementation can be shown based on Table 2 and Figure 4 below.

Table 2: Comparison between Submission of Assignments

Assessment	Submission Medium	Number of Pupils
Before Liveworksheet quiz implementation	Google Classroom	1
	Whatsapp	1
After Liveworksheet quiz implementation	Google Classroom	3
	Whatsapp	2

Figure 4 : Comparison Chart



From the data comparison of before and after the implementation of the digital application Liveworksheet showed that there was an increase in the assignment submission using Google Classroom and Whatsapp. The results of this study showed that all SENP were able to submit their assignments during home-based learning after Liveworksheet

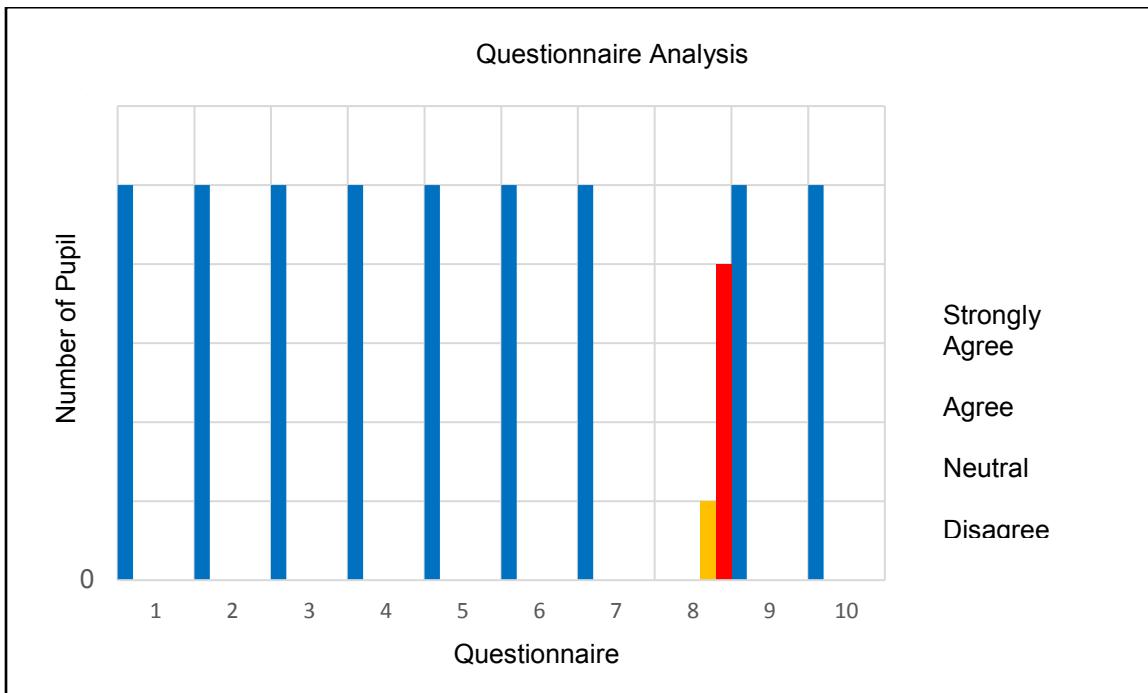
implementation. These findings corroborate the findings of Abrams and Walsh (2014), in which pupils' language acquisition increased with the use of online video games.

Previously, only one SENP submitted his assignments via Google Classroom and WhatsApp, but after the Liveworksheet digital application was introduced, all the five SENP managed to submit their assignments very well and consistently (3 SENP submitted assignments via Google Classroom while 2 SENP submitted their assignments via WhatsApp). This proves that the use of interactive quiz is effective in influencing the submission of assignments among SENP.

These findings are in line with the study of Pitchford et al. (2018) on 116 grade 1 students in Malawi who showed SENP could interact better through the use of digital applications and they were able to get past at least one topic. This shows that the use of digital applications can attract the SENP to send their assignments since they have understood the topic studied. This is supported by Kang and Chang's (2019) study in Taiwan which showed a gamification approach (digital games) helped 6 Autistic pupils to bathe without their parental assistance. This shows that the approach of using digital applications plays a very important role in helping SENP to focus better on their lesson and subsequently submit their assignments.

Questionnaires were given to SENP to identify their level of enjoyment in answering this interactive task which has influenced them to submit the assignment. In this questionnaire, five points Likert scale was used to analyse the SENP responses: 1 - strongly agree, 2 - agree, 3 - neutral, 4 - disagree or 5 - strongly disagree in the statement. This Likert scale is used because it is easier to administer the data. These findings show that all SENP gave very positive responses. Based on the analysis of the questionnaire, a histogram graph based on frequency can be shown as below:

Figure 5 : Questionnaire Analysis based on Liveworksheet Implementation



Based on Figure 5, it showed that all SENP showed positive responses (strongly agree) towards the statements except for statement number 8 which is 'I do not understand the content of learning when teacher uses Liveworksheet digital application during home learning'. One pupil disagrees and four strongly disagree. This shows that all SENP agreed and had fun with the Liveworksheet digital application during home-based learning. They were excited and happy to perform the tasks.

## 5. Conclusion

In conclusion, it was found that the use of this digital application is very beneficial in helping SENP to submit their assignment consistently as they are involved in play-based learning. They love to do the assignments but are unaware that the learning process takes place during playing. Therefore, teachers should be keen and creative in choosing the right teaching approach so that pupils with special needs can become skilled people in line with the Philosophy of Special Education. Digital online application actually has a positive impact on education and the findings of previous studies suggest that the gamification approach is appropriate for the teaching and learning process of students with special needs.

Online assessments are a critical part of eLearning and should be undertaken with the same level of care and rigor that put into creating the learning content. There are many software tools that allow teachers to generate engaging tasks. Teachers need to choose the way to assess pupil learning and a related tool to align needs and the results to achieve. A change in attitude can be seen where previously it was very difficult to submit assignments because they quickly got bored with printed sheets. The excitement of SENP had a positive impact on the acceptance of this new subject. Most SENP are able to answer quizzes well and submit assignments faster than before. As a teacher, creativity should play an important role in helping teachers produce fun and effective learning and teaching process especially during home-based learning. Therefore, it is good to encourage all teachers to produce interactive assignments in order to improve SENP assignment submission consistently. It's essential to use this assessment type to enable pupils to apply knowledge in a real-life situation.

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## PREDICTIVE DISTINCTIVES TOWARDS ENGAGEMENT IN INCLUSIVE EDUCATION

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### ABSTRACT

Inclusion provides that equal access to quality education is a fundamental right granted to everyone, regardless of the differences, features, and characteristics. Undoubtedly, teachers play an indispensable role in the success of such educational mantra. This research assessed the competency of the regular public elementary school teachers handling inclusive classes; and the benefits of inclusive education during school year 2019 to 2020 in Cebu City to propose an appropriate and relevant development plan. There were 63 respondents who were identified using cluster sampling and were asked to answer the adapted survey questionnaire. The data gathered were organized and treated statistically using frequency count, percentage, weighted mean, Pearson r and multiple regressions. Findings showed that most of the respondents were females whose field of specialization were not aligned with special education and were not exposed to relevant trainings in inclusion. Moreover, the respondents perceived themselves to be highly competent in handling inclusive classes; and viewed inclusive education to be highly beneficial for the learners with and without special needs. There was a significant relationship between the teachers' competence in handling inclusive classrooms and the benefits of education. Lastly, there was no significant relationship between the respondents' profile and their perceived competence. Thus, it is highly recommended that the proposed teachers' development plan of this study be adopted, implemented, and monitored to continuously enhance the teachers' competence in implementing inclusion for the benefits of the students with or without special needs.

**Keywords:** Special Education, Inclusive Education, Inclusion, Descriptive-Correlation Method, Cebu City, Philippines.

### 1. Introduction

Human rights have consistently been an important concern in the international arena, with nongovernmental organizations and governments all over the world actively working to protect these rights regardless of the characteristics that everyone possesses. However, certain groups of people continue to face exclusion because of their unique characteristics, such as gender, socioeconomic status, culture, religious background, and disabilities. Education, a fundamental human right, is designed as a tool to combat isolation and discrimination against the weaker sectors of society (Peters, 2003). Thus, UNESCO (2005) emphasized the equal access to high quality education to all which respects every individual with diverse characteristics. Philippines is one of those countries who abide by this principle observed worldwide by stipulating in its constitution this basic right of every individual. Every Filipino child has the right to an equal opportunity to be educated in school, as stated in the Philippine Constitution of 1987. However,

some children have learning difficulties that can interfere with teachers' instruction when they are present in the classroom. Children with disabilities were considered undesirable and separated from regular children due to their lack of knowledge and limitations, which is why their education was conducted in special schools (Kusuma & Ramadevi, 2013). As a result, many Special Education (SPED) Centers were established in the Philippines to provide learners with disabilities with access to education. Learners with disabilities are assigned to specialized programs so that instructions can be delivered to them more effectively.

Inclusion or inclusive education has been advocated for many years in the Philippines, and it has been strengthened by the passage of a law protecting disabled people. Republic Act no. 7277 also known as the "Magna Carta for Disabled Persons" states that "the State shall facilitate integration of disabled persons into the mainstream of society and shall advocate for and encourage respect for disabled persons". Hence, the State "shall ensure that disabled persons are provided with access to quality education and ample opportunities to develop their skills. It shall take appropriate steps to make such education accessible to all disabled persons". As the implementing agency, the Department of Education (DepEd) is responsible for bringing this program to all schools. This resulted in the issuance of DepEd Order No. 72 series of 2009, which "guarantees the right of children with special needs to receive appropriate education within the regular or inclusive classroom setting." However, schoolteachers who have not been trained to work with students with special needs find it difficult to teach these children. Because of their lack of knowledge and skills in dealing with these types of students, the presence of these students in regular classrooms will be a burden on them.

Various trainings and seminars were held by DepEd -Cebu City to raise teacher awareness of the concept of inclusive education and how to manage learners with special needs in an inclusive classroom. However, teachers are concerned about the sufficiency of the trainings provided to them. Teachers should be prepared to deal with any disability that a student may have in the classroom. Teachers, on the other hand, must consider that every child has the right to an education, regardless of his or her socioeconomic status. Teachers who are aware of the benefits of inclusive education for students with special needs may develop a favorable attitude toward this program. According to Zulfija, Indira, and Elmira (2013), one important factor in achieving inclusive education is teachers' competency in working with children with special needs. Teachers in the field of inclusive education should have new abilities to conceptualize strategies, the ability to determine the importance of individuals in implementing the activities required during the delivery of instruction to children with disabilities and be accountable for the outcomes of instruction that are perceptible on the children. Furthermore, when working in inclusive classrooms, teachers should be knowledgeable about the behavior and characteristics of children with disabilities to develop appropriate strategies and improve one's skills in creating an environment that promotes learning (Bukvic, 2014).

This study is based primarily on Vygotsky's theory of learning and sociocultural theory. This theory examines society's significant contributions to human development. This theory also emphasizes the interaction between developing people and the culture in which they live. Bandura's (1977) theory on self-efficacy stated that self-efficacy has a more direct influence on behavior than self-concept. Teachers' self-efficacy is defined as the teachers' belief in his or her own ability to organize and execute courses of action necessary to successfully complete a specific task in a specific context. It has been shown to have a positive effect on students' progress. Teachers' self-efficacy affects students' academic achievement. To summarize, teachers' self-efficacy appears to be the most important factor influencing one's confidence in applying their knowledge/skills in various situations.

According to Zulfija et al. (2013), teachers have a negative attitude toward inclusive education due to a lack of knowledge about children with disabilities and a lack of special skills for their training. A substantial amount of research has revealed that enrolling children with and without special needs in the same classroom benefits both children. However, these benefits may be realized if these classrooms are managed by competent teachers. According to Kusuma and Ramadevi (2013), teacher competency is defined as the ability to effectively handle the interaction within the classroom that is appropriate to the activities and considers the different learning needs of the learners.

Schools are required to accept children regardless of their socioeconomic status or learning abilities, such as children with special needs who are mainstreamed in regular classrooms. However, most teachers are not prepared to work with children who have special needs. Regular teachers' competence in handling inclusive classrooms becomes an issue for them. This study aims to propose a teacher capability development program to provide teachers with the necessary skills and knowledge to deal with children enrolled in inclusive classrooms.

## **2. Methodology**

This research utilized descriptive – correlational research design which aimed to assess the competency of the regular public elementary school teachers handling inclusive classes and the benefits of inclusive education using the adapted survey questionnaire. Cluster sampling was used to determine the 63 respondents of the study within the identified public elementary schools in Cebu City. Data gathered were organized and treated statistically using frequent count, percentage, weighted mean, Pearson r, and multiple regression.

## **3. Result and Discussion**

### **3.1 Profile of the Respondents**

Table 1 presents the data gathered as to the age and gender of the respondents. As presented in the table, 62 out of the 63 respondents were female teachers which comprises 98.41 percent of the total respondents. On the contrary, only one or 1.59 percent of the respondents was a male teacher. With regards to the female teachers, 18 or 28.57 percent of the respondents were of age bracket from 31 – 38 years old which comprises majority of the female respondents. There were 14 or 22.22 percent of them who are aging from 23 – 30 years old and 10 or 15.87 percent of the respondents were aging from 39 – 46 years old. Twelve or 19.05 percent of the respondents were 47 – 54 years old while eight or 12.70 percent of them aged from 55 – 62 years old. In general, respondents are 40 years old on average. This could imply that most of the teachers have extensive teaching experience.

*Table 1: Age and Gender of the Respondents*

Age (in years)	Male		Female		Total	
	f	%	f	%	f	%
55 – 62	--	--	8	<b>12.70</b>	8	<b>12.70</b>
47 – 54	--	--	12	<b>19.05</b>	12	<b>19.05</b>
39 – 46	1	<b>1.59</b>	10	<b>15.87</b>	11	<b>17.46</b>
31 – 38	--	--	18	<b>28.57</b>	18	<b>28.57</b>
23 – 30	--	--	14	<b>22.22</b>	14	<b>22.22</b>
<b>Total</b>	1	<b>1.59</b>	62	<b>98.41</b>	63	<b>100.00</b>
<b>Ave</b>	39.0		40.0		40.0	

The highest educational attainment of the respondents is one the variables considered in this study. According to Table 2, 46 of the 63 respondents have a master's degree, while 17 (or 26.98 percent) have a bachelor's degree. However, none of the respondents have received a doctorate. According to the data presented, most respondents pursued additional studies, implying that they wished to gain more academic knowledge to aid them in their teaching profession.

*Table 2: Respondents' Highest Educational Attainment*

Educational Attainment	f	%
Doctoral Degree	--	--
Master's Degree	46	<b>73.02</b>
Bachelor's Degree	17	<b>26.98</b>
<b>Total</b>	<b>63</b>	<b>100.00</b>

According to Fennema and Franke (2006), highly qualified teachers present their lessons in an engaging manner, allowing students to gain a better understanding and mastery of the subject matter.

The teachers' teaching experience cannot be overlooked in this study because it will aid in the development of the teachers' teaching skills. As a result, taking this variable into account will aid in the conduct of this study.

*Table 3: Respondents' number of years of teaching*

No. of Years	f	%
31 – 38	4	<b>6.35</b>
24 – 30	7	<b>11.11</b>
18 – 23	9	<b>14.29</b>
12 – 17	14	<b>22.22</b>
6 – 11	14	<b>22.22</b>
5 and below	15	<b>23.81</b>
<b>Total</b>	<b>63</b>	<b>100.0</b>

As reflected, 15 or 23.81 percent of the respondents have 5 years of teaching experience and below. Even though there were respondents with less teaching experience, many of them had a considerable quality exposure to teaching that will help equip the respondents with strategies for dealing with diverse students. Clotfelter, Ladd, and Vigdor (2007) discovered that teaching experience has a significant relationship with student performance in their study.

### 3.2 Competency of the Respondents

Regular classes that cater to children with special needs are known as inclusive classes. These classes should be taught by teachers who are experienced in working with children who have special needs and are mainstreamed in these classrooms. Table 4 contains statements describing the perception of the respondents on their competence in handling inclusive classes.

*Table 4: Teachers' Perceived Competence in Handling Inclusive Classes*

Indicators	$\bar{x}$	Verbal Description
1 Modifying my teaching strategies to cater children with special needs.	4.38	Highly Competent
2 Handling behavior of learners with special needs in an inclusive classroom	4.13	Competent
3 Implementing the process on how to handle a class catering learner with special needs.	4.11	Competent
4 Using assistive technology for learners with special needs	4.05	Competent
5 Using appropriate assessment tools for learners with special needs	4.13	Competent
6 Motivating learners with special needs to participate in class activities	4.38	Highly Competent
7 Catering to the needs of the learners with disability	4.22	Highly Competent
8 Providing interventions of any learner with special needs	4.16	Competent
9 Identifying the strengths and weaknesses of learners with special needs	4.33	Highly Competent
10 Providing atmosphere that is friendly to both learners with and without special needs	4.46	Highly Competent

11	Collaborating strategies and techniques in handling learners with special needs with my colleagues	4.08	Competent
12	Coordinating with well-trained teachers with regards to the strategies I apply inside the classroom to address the needs of the learners	4.40	Highly Competent
13	Establishing partnership with parents to monitor the progress of the child	4.59	Highly Competent
14	Preparing anecdotal records of the learners with special needs	4.41	Highly Competent
15	Pursuing advanced studies to enrich my knowledge on handling learners with special needs	4.08	Competent
<b><i>Overall Weighted Mean</i></b>		<b>4.26</b>	<b>Highly Competent</b>

The overall weighted mean of 4.26 indicates that respondents regarded themselves as highly competent in dealing with inclusive classes. According to Savage and Erten (2015), teachers who have more experience with inclusive classrooms have a more positive attitude. Evidence indicates that to be effective, teachers must be knowledgeable about best practices in teaching and adapted instruction for children with special needs, where a positive attitude is most important in creating an effective inclusive classroom. Furthermore, Berry (2010) discovered in her study on inclusive education that there are three types of teachers: eager but anxious beginners, who are mostly preservice teachers with positive attitudes but are concerned about their efficacy in inclusion; positive doers, who are mostly experienced teachers who struggle with the challenges of inclusion but maintain their positive attitudes; and resisters, who are mostly experienced teachers who are resistant to inclusion.

### 3.3 Benefits of Inclusive Education

Implementing inclusive education benefits learners, such as children with special needs. This study examines teachers' perceptions of the benefits of inclusive education for children who do not have special needs.

*Table 5: Benefits of Inclusive Education to Children Without Special Needs*

Indicators		$\bar{x}$	Verbal Description
1	Establish meaningful friendships with children with special needs	4.51	Highly Beneficial
2	Increase their appreciation and acceptance of individual differences	4.52	Highly Beneficial
3	Improve their self-esteem in peer-tutoring situations	4.51	Highly Beneficial
4	Learn to value children with diverse abilities in inclusive classrooms	4.57	Highly Beneficial
5	Be prepared for adult life in an inclusive society	4.16	Beneficial
6	Have opportunities to master activities by practicing and teaching others	4.27	Highly Beneficial
7	Enjoy improved technologies and instructional resources for everyone	4.38	Highly Beneficial
8	Increased their understanding and acceptance of diversity	4.37	Highly Beneficial

9	Learn to respect for other people	4.75	Highly Beneficial
10	Learn additional skills such as Braille or sign language	4.29	Highly Beneficial
<b>Overall Weighted Mean</b>		<b>4.43</b>	<b>Highly Beneficial</b>

The overall weighted mean of 4.43 indicates that teachers believe inclusive education is extremely beneficial to children who do not have special needs. According to McMillan (2008), inclusive education benefits not only children with disabilities but also their non-disabled peers, as children with disabilities in inclusive classrooms outperform their non-disabled peers academically and socially than those children in non-inclusive settings.

Inclusive education also benefits children with special needs because they are given the opportunity to learn in a more realistic classroom environment where they can interact with their peers who are regular learners.

*Table 6: Benefits of Inclusive Education to Children with Special Needs*

<b>Indicators</b>		$\bar{x}$	<b>Verbal Description</b>
1	Demonstrate high levels of social interaction with non-disabled peers in inclusive setting when compared with segregated setting.	4.13	Beneficial
2	Improve social competence and communication skills	4.30	Highly Beneficial
3	Establish friendship with peers	4.56	Highly Beneficial
4	Be assisted in the development of General Knowledge	4.22	Highly Beneficial
5	Succeed on the main motto of inclusive education i.e., 'learn to live together'	4.33	Highly Beneficial
6	Have greater access to general curriculum	4.11	Beneficial
7	Benefit on peer role models for academic, social and behavior skills	4.21	Highly Beneficial
8	Have increased achievement of Individualized Education Program (IEP) goals	4.08	Beneficial
9	Enjoy increased parental participation	4.49	Highly Beneficial
10	Have higher expectations	4.03	Beneficial
11	Improve confidence and display qualities of self-efficacy	4.27	Highly Beneficial
12	Enjoy assistance from peers on class activities	4.40	Highly Beneficial
<b>Overall Weighted Mean</b>		<b>4.26</b>	<b>Highly Beneficial</b>

In general, the overall weighted mean of 4.26 indicates that respondents believe inclusive education is extremely beneficial to children with special needs. Teachers' perceptions are consistent with the findings of Henninger and Gupta (2014), who hypothesized that children with disabilities who are included in high-quality classrooms with their typically developing peers stand to benefit across developmental domains. Furthermore, Kavales and Forness (2000) proposed that including children with disabilities in regular classrooms increases the likelihood

that they will be socially accepted by their peers because the more regular children have contact with their peers with disabilities, the more likely they will develop tolerance and a greater acceptance of other people's differences.

The relationship between teacher competence and the benefits of inclusive education was tested using a two-tailed test at the 0.05 level of significance. The calculated r-value of 0.614 indicates a moderately positive relationship between teacher competence and the benefits of inclusive education. It was then tested for the significance of its correlation, yielding a computed p – value of less than 0.05 (p 0.05), indicating that the null hypothesis is rejected.

*Table 7: Test of Significant Relationship between Teachers' Perceived Competence and Benefits of Inclusive Education*

Variables	N	Significance level	Pearson r	p - value	Decision	Remarks
Teachers' Perceived Competence and Benefits of Inclusive Education	63	0.05 (two-tailed)	0.614	0.000	Reject Ho	Significant

The correlation between the teachers' competence and the benefits of inclusive education was found to be moderate positive correlation which implies that as the teachers' perceived themselves to be competent in handling inclusive classes the perceived benefits of inclusive is also high. Further, there was a significant relationship between their perceived competence and the benefits of inclusion.

The model summary of the regression analysis of the respondents' profile, such as age, highest educational attainment, and length of service, in relation to their perceived competence in handling inclusive classes the multiple regression result is 0.300, indicating that there is a negligible linear relationship between the observed and predicted values of the model.

*Table 8: Model Summary of the Regression Analysis*

Regression Statistics						
Coef		Std Error	t Stat	P-value	Decision	Remarks
Intercept	62.695	4.603	13.621	.000	Reject Ho	Significant
Age	-.012	.160	-.074	.941	Accept Ho	Not Significant
Educational Attainment	.041	.134	.122	.729	Accept Ho	Not Significant
Length of Service	.032	.191	.168	.867	Accept Ho	Not Significant

The respondents' identified profiles were used to see if they were significant predictors of teachers' perceived competence in handling inclusive classes. The predictor variables were found to explain 4.4 percent of the variance in the values of teachers' competence. Furthermore, the model is not a reliable predictor of teachers' competence.

## 4. Conclusion

Based on the study's findings, it can be concluded that teachers are very confident in their ability to handle inclusive classes, despite not having received inclusion training. Some of these teachers had been in the field for a long time and had come across cases of children with special needs who were enrolled in their class. They viewed these encounters as learning opportunities in dealing with such children. Their positive attitude toward the benefits of inclusive education matched their confidence in their ability to handle inclusive classes. However, these perceptions of their competence must be evaluated by experts to determine whether they used appropriate strategies in handling inclusive classes and, if so, whether inappropriate intervention was observed. It should not be ignored that these teachers were not trained in special education, so their knowledge of dealing with children with special needs would need to be reinforced through trainings and seminars.

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# ATTITUDES OF STUDENTS TOWARDS THE DEAF AND HARD OF HEARING INCLUSIVE SECONDARY EDUCATION

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## ABSTRACT

The research centers on determining the attitudes of students towards the deaf and hard of hearing (DHH) inclusive secondary education. The study was conducted at La Salle Green Hills Adult Night High School in School Year 2019-2020. The researcher of the study used the purposive sampling technique in choosing its DHH respondents and convenience sampling technique in choosing its hearing students and teacher respondents. This study made use of the descriptive method of research design in the hope of seeking and describing the current status of the variables involved in the study. On the basis of the findings in this study, the researcher concludes that (a) both hearing students and DHH students have a strong positive cognitive attitude towards inclusion, (2) both hearing students and DHH students have a strong positive affective attitude towards inclusion, (3) DHH students have a positive behavioral attitude towards inclusion while hearing students have a strong positive behavioral attitude, and (d) there is no significant difference between the overall attitudes of the respondents toward DHH inclusive secondary classroom. This implies that both respondents have common cognitive, affective, and behavioral actions in an inclusive secondary education. Awareness/orientation programs, faculty development sessions, more collaborative activities between hearing and DHH learners, sign language classes, training for interpreters in the subjects they are assigned to, and involvement of parents and guardians in the program are thought to be needed by the students and teachers of the school.

## 1. Introduction

Philippines' Department of Education mentions inclusive education as part of its Basic Education Research Agenda. However, published researches on this topic are mostly from overseas. Many studies have been conducted in relation to understanding the threats and challenges teachers face, considering their concerns, their willingness to institute inclusive environments or appraising teachers' confidence levels. However, limited research exists examining the predictors of successful inclusion as viewed by students themselves. It is acknowledged that perceptions of self and others, especially in educational setting, play a foundational role in the effectiveness of social experiences. The need for the ease of access of more current information for mainstream basic education schools are called for to assist schools in the Philippines in providing effective teaching and learning strategies to DHH learners (Dapudong, 2014). It is just fitting that students' perceptions should also be gathered because they spend most of the time together in school.

The study was about the attitudes of students, both hearing and DHH, toward inclusion in secondary education. It was the first to examine formally the attitudes of the learners themselves. The researcher served the institution as Administrative Affairs Coordinator for three

years and is currently the school's Academic Coordinator. Part of his job functions is to ensure that the needs of the students, both hearing and hearing-impaired, are addressed for finer teaching-learning process. The school administration can use the result of the study in decision making for the betterment of its programs and designing new ones. It also aims to encourage school administrators to focus on the next steps for hearing impaired and deaf students in an inclusive classroom to ensure they have equal and appropriate access to the school curriculum in whatever form that may be in their school learning environment.

## 2. Statement of the Problem

The study determined the attitudes of students towards the deaf and hard of hearing inclusive secondary education at La Salle Green Hills Adult Night High School. Specifically, the study sought answers to the following questions:

1. What is the overall attitude of students toward DHH Inclusive Secondary Education as to:
  - 1.1 cognitive component
  - 1.2 affective component
  - 1.3 behavioral component
2. What is the significant difference between the attitudes of hearing and deaf and hard of hearing toward DHH Inclusive Secondary Education as to:
  - 2.1 cognitive component
  - 2.2 affective component
  - 2.3 behavioral component
3. What do students and teachers recommend regarding this inclusion?
4. What action plan may be formulated to improve the implementation of the DHH Inclusion Program?

## 3. Literature Review

The hallmark of inclusive education is the teachers' enthusiasm to accept students with special needs. Their attitudes and knowledge about inclusive education are important as these are indicators of such eagerness. Inclusion of deaf and hard of hearing students in public schools is one of the controversial topics in the field. The focus mainly of many authors who study inclusion when writing about the topic was student's access to classroom communication.

Dev and Kumar (2015) concluded in their study that teachers had an overall negative perception towards integrating students with learning disability in the normal class rooms. The analysis of their research work confirmed that the age, gender, educational level of the teachers and awareness about learning disability had a significant influence and consequence on their entire perception about integration process. This study investigated the regular school teacher's ability to handle students with learning disability and their understanding and acceptance level to integrate the students into the regular school set up.

Results from another scholastic work, this time, showed positive perceptions. It suggested that teachers generally held positive view points on inclusive education (Kurniawati et al., 2013). The research proposed that teachers' attitudes play a vital role in triumphant implementation of inclusive education. The research was conducted in Jakarta.

An interesting result came from Schmidt and Cagran's study revealing both positive and negative attitudes in the integration of hearing-impaired children as regard classroom climate. This is a sign that more studies should be done on order to push on the integration of DHH in regular classroom. DHH learners may achieve better results when they are educated in an inclusive environment (Schmidt & Cagran, 2006). DHH can learn at their own course, with classmates at the same standing as themselves, and they can act in response well to the expectations placed on them in a mainstream learning climate. They will better face the challenges of their special needs because they will be encouraged to engage in activities fully alongside hearing counterparts. In addition, overall DHH adolescents can experience positive relationships with their peers and friends notwithstanding their earlier experience of bullying in primary school (Terlektsi et al., 2020).

This hopes to be a new literature that will provide data on students' attitudes relating to the problems confronting them in realizing successful inclusionary practices in schools. Formulation of future policies affecting inclusive education in the country, particularly of integrating deaf and hard of hearing in the classrooms, needs to be addressed. It is high time that positive social change be considered by educators to implement best inclusionary practices in classrooms. Studies are necessary to address the concerns expressed among parents on their child's ability to participate successfully in an inclusive school setting, as well as the level of supports their child would receive (Zaidman-Zait et al., 2019). I encourage researchers to assist the Department of Education's on-going effort in the Philippines to implement inclusive education effectively in the country. Students' perceptions and beliefs should be a main consideration in the implementation of inclusive education.

#### **4. Research Methodology**

This study made use of the descriptive method of research design because it hoped to describe the current status of the variables involved in the study. It utilized survey and interview questionnaires to determine the attitudes of students toward deaf and hard of hearing inclusive secondary education. The data gathered on the profile of the students were subjected to descriptive and inferential statistics.

The researcher of the study used purposive sampling technique in choosing its deaf and hard of hearing respondents and convenience sampling technique in choosing its hearing and teacher respondents. In particular, 36 out of 38 deaf and hard of hearing students of LSGH ANHS for the school year who have experienced inclusive education participated in the study. Thirty-six hearing students and 17 teachers, who have experienced inclusive classroom structure or set-up with deaf and hard of hearing, were tapped in the study according to convenience.

The main instruments used in this study were survey and interview questionnaires crafted specifically for this study. For content validity purposes, the researcher collaborated with Mrs. Avelina G. Ombao and Miss Rhea M. Namol, both with Master of Arts degree in Special Education and are engaged in deaf education, in crafting the questionnaires. He also sought the assistance of Dr. Marilou C. Asturias of Rizal Technological University Graduate School.

## 5. Findings and Discussion

### 5.1 Difference Between the Attitudes of Hearing and DHH Towards Inclusive Education

#### Cognitive Component

Table 1 presents the difference between the cognitive attitudes of the respondents toward deaf and hard of hearing inclusive secondary education.

*Table 1: Difference Between the Cognitive Attitudes of the Respondents Toward Inclusive Secondary Education*

COGNITIVE COMPONENT	P-Value	Decision	Interpretation
1. DHH students would achieve better academically in an inclusive classroom	0.068	Not Rejected	Insignificant
2. Self-contained classrooms have a negative impact on social and emotional development of DHH students.	0.008	Rejected	Significant
3. Inclusion offers mixed group interaction that will foster understanding and acceptance of difference among us.	0.134	Not Rejected	Insignificant
4. It is unlikely that DHH students exhibit behavior problems in our school.	0.076	Not Rejected	Insignificant
5. DHH can best be served in a mainstream or inclusive school.	0.107	Not Rejected	Insignificant
6. The extra attention given to DHH students is not to the detriment of other students.	0.418	Not Rejected	Insignificant
7. The challenge of being in an inclusive school promotes the academic growth of DHH students.	0.496	Not Rejected	Insignificant
8. Inclusion of DHH students requires significant changes in our classroom procedures.	0.371	Not Rejected	Insignificant
9. The presence of DHH students promotes acceptance of differences on the parts of the students who are hearing.	0.011	Rejected	Significant
10. DHH students probably develop more rapidly in inclusive school than in a special school.	0.051	Not Rejected	Insignificant
11. Inclusion of DHH students promotes their social independence.	0.862	Not Rejected	Insignificant
12. It is not more difficult to maintain order in an inclusive school that contains DHH students than in a school that does not have DHH students.	0.061	Not Rejected	Insignificant
13. The inclusion of DHH students are beneficial for students who are hearing.	0.008	Rejected	Significant
14. The classroom behavior of DHH students does not generally require more patience from our teachers.	0.701	Not Rejected	Insignificant
15. DHH students should be given every opportunity to function in the school when possible.	0.310	Not Rejected	Insignificant

Among the fifteen statements, 12 have p-values higher than 0.05. Three, on the other hand, have less than 0.05. These are statements *self-contained classrooms have a negative impact on social and emotional development of DHH students*, *the presence of DHH students promotes acceptance of differences on the parts of the students who are hearing*, and *expressing inclusion of DHH students are beneficial for students who are hearing*. In these three

statements, we can say that there is a significant difference in their cognitive attitude because of the computed p-values which are 0.008, 0.011 and 0.008, respectively.

### **Affective Component**

Table 2 presents the difference between the affective attitudes of the respondents toward deaf and hard of hearing inclusive secondary education before being part of inclusion.

*Table 2: Difference Between the Affective Attitudes of the Respondents Before Being Part of DHH Inclusive Secondary Education*

AFFECTIVE DOMAIN	P-Value	Decision	Interpretation
Comfortable	0.814	Not Rejected	Insignificant
Positive	1.000	Not Rejected	Insignificant
Optimistic	0.626	Not Rejected	Insignificant
Interested	0.562	Not Rejected	Insignificant
Happy	0.107	Not Rejected	Insignificant

Both respondents have the common affective attitude towards inclusive secondary education. This only means that the affective attitudes of the respondents do not differ at all since all domains are insignificant. It can be noted that both respondents are very positive towards inclusive secondary education. On the other hand, being happy has the least p-value though it is not rejected.

Table 3 presents the difference between the affective attitudes of the respondents towards deaf and hard of hearing inclusive secondary education after being part of inclusion.

*Table 3: Difference Between the Affective Attitudes of the Respondents After Few Months of Being Part of DHH Inclusive Secondary Education*

AFFECTIVE DOMAIN	P-Value	Decision	Interpretation
Comfortable	0.700	Not Rejected	Insignificant
Positive	0.468	Not Rejected	Insignificant
Optimistic	0.236	Not Rejected	Insignificant
Interested	1.000	Not Rejected	Insignificant
Happy	1.000	Not Rejected	Insignificant

Both respondents still have common affective attitude after being part of a DHH inclusive classroom. Moreover, being happy and interested are the very common attitudes of the respondents with a p-value of 1.000 which means that respondents affective attitudes do not differ at all. However, being optimistic has the lowest p-value of 0.236 which means that this is the least common attitude of the respondents although it does not differ at all.

## **Behavioral Component**

Table 4 presents the difference between the behavioral attitudes of the respondents towards deaf and hard of hearing inclusive secondary education. As seen in the table, behavioral attitudes of the respondents differ on numbers 2 (Learn and/or teach Filipino Sign Language), 8 (Advocate DHH and hearing integration development issues), and 9 (Make use of the strengths of both hearing and DHH in accomplishing school requirements like written works and performance tasks). This implies that they have different levels of coping in inclusive classrooms when it comes to behavior numbers 2, 8 and 9.

*Table 4: Difference Between the Behavioral Attitudes of the Respondents Toward Inclusive Secondary Education*

<b>Behavioral COMPONENT</b>	<b>P-Value</b>	<b>Decision</b>	<b>Interpretation</b>
1. Encourage DHH and hearing classmates to interact and learn together.	0.656	Not Rejected	Insignificant
2. Learn and/or teach Filipino Sign Language.	0.855	Rejected	Significant
3. Adopt new learning styles to match DHH characteristics for better collaboration.	0.412	Not Rejected	Insignificant
4. Avoid using negative labels inside or outside the classroom.	0.003	Rejected	Significant
5. Make use of technology to communicate better with classmates.	0.662	Not Rejected	Insignificant
6. Help in making sure DHH students sit in front lines.	0.249	Not Rejected	Insignificant
7. Take part in DHH associations and/or private forums.	0.879	Not Rejected	Insignificant
8. Advocate DHH and hearing integration development issues.	0.014	Rejected	Significant
9. Make use of the strengths of both hearing and DHH in accomplishing school requirements like written works and performance tasks.	0.045	Rejected	Significant
10. Give equal respect to DHH and hearing classmates.	0.085	Not Rejected	Insignificant

## **Over-all Difference Between Attitudes**

Table 5 presents the over-all difference between the attitudes of the respondents towards deaf and hard of hearing inclusive secondary education.

*Table 5: Overall Difference Between the Attitudes of the Respondents Towards Inclusive Secondary Education*

<b>GROUP</b>	<b>MEAN</b>	<b>z-value</b>	<b>Df</b>	<b>p-value</b>	<b>DECISION</b>	<b>INTERPRETATION</b>
Hearing	4.40					
DHH	4.22	1.880	70	0.064	Not Rejected	Insignificant

Since the p-value of 0.064 is greater than 0.05, the level of significance, then we do not reject the null hypothesis. Moreover, it has a t-value of 1.880 and degrees of freedom equal to 70. This only means that there is no significant difference between the overall attitudes of the

respondents toward DHH inclusive secondary classroom. This implies that both respondents have common cognitive, affective, and behavioral actions in an inclusive secondary education.

### Recommendations of Students and Teachers Regarding Inclusion

The following tables illustrate the recommendations of students and teachers regarding inclusion.

Table 6 summarizes the recommendations of hearing respondents for the DHH inclusion. It shows that the hearing respondents find item #8, *the conduct of orientation/awareness program for deaf and hard of hearing students at the start of the school year*, very much needed with a weighted mean of 4.56. Item #3, *the presence of teaching assistants during classes*, has the least weighted mean of 2.58. This may be due to the school has already sign language interpreters.

*Table 6: Summary of Recommendations of Hearing Respondents for the Inclusion Program*

RECOMMENDATIONS BY THE HEARING STUDENTS	MEAN	V.I.
1. Hearing aids must be readily available for DHH students in a mainstreamed class.	3.28	Might Be Needed
2. Modern visual aids must be designed for DHH learners are provided.	4.14	Needed
3. Teaching assistants must be present during classes.	2.58	Might Be Needed
4. Subject teachers must be trained and certified in Filipino Sign Language.	3.82	Needed
5. There must be a note-taker for DHH learners during classes.	3.25	Might Be Needed
6. A regular teacher-training for sign language interpreters must be part of the Faculty Development Program.	4.28	Needed
7. A regular teacher-training on inclusion for subject teachers must be part of the Faculty Development Program.	4.33	Needed
8. An orientation/awareness program for DHH students at the start of the school year must be conducted.	4.56	Very Much Needed
9. An orientation/awareness program for hearing students at the start of the school year must be conducted.	4.36	Needed
10. An orientation/awareness program for teachers, especially those who are new, at the start of the school year must be conducted.	4.47	Needed
11. There must be a periodic evaluation of the effectiveness of the programs for deaf learners.	4.33	Needed
12. There must be student organization/s for the promotion of inclusion.	4.42	Needed
13. Home works and other school requirements must be shifted to ICT-based.	3.97	Needed
14. There must be special classrooms with sound insulation.	2.86	Might Be Needed
15. Curriculum must be modified to accommodate the needs of DHH.	3.83	Needed
<b>GENERAL WEIGHTED MEAN</b>	<b>3.90</b>	<b>NEEDED</b>

The following recommendations were mentioned by at least one respondent in the course of the interview: (1) bonding activities among hearing and deaf and hard of hearing students, (2) sign language class for all students, and (3) time allotment for group learning among hearing and deaf and hard of hearing students.

Table 7 summarizes the recommendation of deaf and hard of hearing respondents toward DHH inclusion. It shows that the deaf and hard of hearing respondents find item #6, *a regular teacher-training for sign language interpreters as part of the Faculty Development Program*, very much needed with a weighted mean of 4.64. Item #1, *readily available hearing aids for deaf and hard of hearing students in a mainstreamed class*, has the least weighted mean of 3.50. At least two deaf and hard of hearing learners said they see hearing aids as some sort of disruption.

*Table 7: Summary of Recommendations of DHH Respondents for the Inclusion Program*

RECOMMENDATIONS BY THE DHH STUDENTS	MEAN	V.I.
1. Hearing aids must be readily available for DHH students in a mainstreamed class.	3.50	Needed
2. Modern visual aids must be designed for DHH learners are provided.	4.22	Needed
3. Teaching assistants must be present during classes.	3.67	Needed
4. Subject teachers must be trained and certified in Filipino Sign Language.	4.06	Needed
5. There must be a note-taker for DHH learners during classes.	3.67	Needed
6. A regular teacher-training for sign language interpreters must be part of the Faculty Development Program.	4.64	Very Much Needed
7. A regular teacher-training on inclusion for subject teachers must be part of the Faculty Development Program.	4.42	Needed
8. An orientation/awareness program for DHH students at the start of the school year must be conducted.	4.33	Needed
9. An orientation/awareness program for hearing students at the start of the school year must be conducted.	4.17	Needed
10. An orientation/awareness program for teachers, especially those who are new, at the start of the school year must be conducted.	4.39	Needed
11. There must be a periodic evaluation of the effectiveness of the programs for deaf learners.	4.58	Very Much Needed
12. There must be student organization/s for the promotion of inclusion.	4.17	Needed
13. Home works and other school requirements must be shifted to ICT-based.	4.42	Needed
14. There must be special classrooms with sound insulation.	3.61	Needed
15. Curriculum must be modified to accommodate the needs of DHH.	4.11	Needed
<b>GENERAL WEIGHTED MEAN</b>	<b>4.13</b>	<b>NEEDED</b>

The following recommendations were mentioned by a respondent in the course of the interview: (1) Filipino sign language class for hearing students, and (2) more interaction activities among hearing and deaf and hard of hearing students.

Table 8 summarizes the recommendations of teachers for the DHH inclusion program. It shows that teacher respondents find items #8 and 9, an *orientation/awareness program for deaf and hard of hearing students at the start of the school year* and *an orientation/awareness program for hearing students at the start of the school year*, very much needed with a weighted mean of 4.76. Item #1, *readily available hearing aids for deaf and hard of hearing students in a mainstreamed class*, also has the least weighted mean of 2.47.

*Table 8: Summary of Recommendations of Teacher Respondents for the Inclusion Program*

RECOMMENDATIONS BY THE TEACHERS	MEAN	V.I.
1. Hearing aids must be readily available for DHH students in a mainstreamed class.	2.47	Not Needed
2. Modern visual aids must be designed for DHH learners are provided.	4.29	Needed
3. Teaching assistants must be present during classes.	3.59	Needed
4. Subject teachers must be trained and certified in Filipino Sign Language.	4.00	Needed
5. There must be a note-taker for DHH learners during classes.	2.76	Might Be Needed
6. A regular teacher-training for sign language interpreters must be part of the Faculty Development Program.	4.59	Very Much Needed
7. A regular teacher-training on inclusion for subject teachers must be part of the Faculty Development Program.	4.41	Needed
8. An orientation/awareness program for DHH students at the start of the school year must be conducted.	4.76	Very Much Needed
9. An orientation/awareness program for hearing students at the start of the school year must be conducted.	4.76	Very Much Needed
10. An orientation/awareness program for teachers, especially those who are new, at the start of the school year must be conducted.	4.71	Very Much Needed
11. There must be a periodic evaluation of the effectiveness of the programs for deaf learners.	4.53	Very Much Needed
12. There must be student organization/s for the promotion of inclusion.	4.29	Needed
13. Home works and other school requirements must be shifted to ICT-based.	3.94	Needed
14. There must be special classrooms with sound insulation.	2.65	Might Be Needed
15. Curriculum must be modified to accommodate the needs of DHH.	3.88	Needed
<b>GENERAL WEIGHTED MEAN</b>	<b>3.98</b>	<b>NEEDED</b>

The following recommendations were mentioned by a respondent in the course of the interview: (1) training for interpreters for the subjects they are assigned to, (2) modification of teaching strategies to accommodate the needs of DHH, (3) strengthened partnership with parents, and (4) inclusion of parents/guardians in the creation of the program. It is worth noting that two other recommendations like to involve the parents and guardians in realizing the success of inclusion program in the school.

## 5.2 Action Plan to Improve the Implementation of the DHH Inclusive Program

In this study, the researcher used the format of La Salle Green Hills Adult Night High School in crafting the action plan so that it can be readily used by the institution. The items in the Action Column were taken from the recommendations both of the students and teachers. The researcher did not include the items in the recommendations which the respondents thought are not needed and might be needed only. He included, however, points that were raised during the interviews. The items excluded were (1) hearing aids are readily available for deaf and hard of hearing students in a mainstreamed class, (2) there is a note-taker for deaf and hard of hearing learners during classes, and (3) there are special classrooms with sound insulation. If the budget of the school does not allow the implementation of most actions, the institution is advised to consider the items strongly recommended by the respondents as reflected in Tables 6, 7 and 8 as priority.

*Table 9: Action Plan to Improve the Implementation of the DHH Inclusive Program*

Action	Metric/ Target	Lead	Budget/ Resources
Provide modern visual aids designed for DHH learners.	Purchase of <b>at least two</b> additional modern aids	Audio-Visual Center In-Charge	PhP 50,000
Assign teaching assistants during classes.	Hiring of <b>one</b> teaching assistant	Moderator for Program for Deaf Learner	PhP 200,000
Train subject teachers in Filipino Sign Language.	<b>Four</b> FSL sessions for teachers	Academic Coordinator	PhP 5,000
Include a regular teacher-training for sign language interpreters in the Faculty Development Program.	<b>At least one</b> in-house seminar on inclusion for sign language interpreters	Moderator for Program for Deaf Learner	PhP 10,000
Include a regular teacher-training on inclusion for subject teachers in the Faculty Development Program.	<b>At least one</b> in-house seminar on inclusion for subject teachers	Academic Coordinator	PhP 10,000
Conduct an orientation/awareness program for DHH students at the start of the school year	<b>One</b> orientation program for DHH students	Moderator for Program for Deaf Learner	PhP 5,000
Conduct an orientation/awareness program for hearing students at the start of the school year	<b>One</b> orientation program for hearing students	Moderator for Program for Deaf Learner	PhP 5,000
Conduct an orientation/awareness program for teachers, especially those who are new, at the start of the school year	<b>One</b> orientation program for teachers	Moderator for Program for Deaf Learner	PhP 5,000
Evaluate periodically the effectiveness of the programs for deaf learners	<b>Two</b> formal evaluations of the programs	Moderator for Program for Deaf Learner	None
Create student organization/s for the promotion of inclusion	Creation of <b>at least one</b> student organization	Students Affairs Coordinator	PhP 20,000
Shift home works and other school requirements to ICT-based	<b>At least 25%</b> of requirements are ICT-based	Subject Teachers	None
Consult partners and benchmark with other schools to identify items in the curriculum for modification	<b>One</b> session of curriculum review and revision	Academic Coordinator	None

Conduct sign language classes for hearing students	<b>At least four</b> sessions of FSL for students	Moderator for Program for Deaf Learner	PhP 5,000
Provide interaction activities for hearing and DHH	<b>Weekly</b> collaborative learning strategies	Subject Teachers	None
Train interpreters on the subjects they are assigned to	<b>Four</b> content sessions for interpreters	Academic Coordinator	PhP 10,000
Involve parents and guardians in the inclusion program	<b>One</b> planning session with parents	Principal	PhP 5,000

## 6. Conclusion

Based on the findings of this study, the researcher concludes the following:

1. Both hearing students and deaf and hard of hearing students have **positive cognitive attitude** and **strongly positive affective attitude** toward deaf and hard of hearing inclusive secondary education. While deaf and hard of hearing students have **positive behavioral attitude**, hearing students have **strongly positive behavioral attitude** toward inclusion.
2. Both hearing students and deaf and hard of hearing students have common cognitive, affective, and behavioral actions in an inclusive secondary education.
3. The students highly recommend the conduct of orientation/awareness program for deaf and hard of hearing students at the start of the school year and regular teacher-training for sign language interpreters as part of the Faculty Development. The teachers think orientation/awareness program both for hearing and deaf and hard of hearing students at the start of the school year the most needed among the recommendations.

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## THE EVALUATION OF “EFFICIENT WRITING” ON AUTISTIC STUDENT IN INTERVENTION CENTER

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### ABSTRACT

Although most autistic students have difficulties in letter formation, studies on the development of autism writing skills are scarce. This study aims to evaluate the effectiveness of "Efficient Writing" on autistic students between 13 to 16 years old in an intervention center. "Efficient Writing" underpins the combination of Brain Gym and The Size Matter Handwriting Programme concepts. Only one autistic student who has severe handwriting difficulties was selected as the sample of this study by implementing the ABA design. Data was collected through repeated measurement of respondent's handwriting skill in terms of the neatness followed by documentation analysis and semi-structured interview. The result showed that respondent had made a significant improvement in handwriting. Respondent's handwriting remained neat even after the intervention had been withdrawn. The outcome also highlighted the importance of handwriting intervention among autistic students with dysgraphia.

**Keywords:** Handwriting, autistic student, intervention, neatness, brain gym

### 1. Introduction

Handwriting is the result of the integration of various coordination movements that depends on the visual perception and motor feedback of the sensory (Capellini et al., 2017). It involves the interaction of both sides of the brain hemisphere. Unfortunately, autistic students experience uneven activation on both sides of the brain while processing information due to the weakness in brain functioning. An executive function is a group of cognitive processes that control complex behavior, physical, emotional, and cognitive movements (Jones et al., 2018; Torske, Nærland, Oie, Stenberg & Andreassen, 2018). Such problems had caused various disabilities such as fine motor skills, visual perceptions, and deficits in motor visual coordination skills to encrypt the mastery of handwriting skills (Kushki, Chau & Anagnostou, 2011).

Dysgraphia referred to the inability to write clearly (Guerrini et al., 2015). In terms of the handwriting interventions, dysgraphia is related to the executive functions such as working memory (Rosenblum, 2016). It is obvious that the defective of executive functions among students affect the formation of writing, speed, and smoothness of handwriting (McCloskey et al., 2008). This is because working memory followed by adequate training is required in the early stages of treatment to increase the source of attention so that the information can remain in the long-term memory. Autistic student's problems are coupled

with the lack of teachers who specialize in this field. Consequently, autistic students are not getting proper guidance.

Most autistic students have difficulties in forming letters (Cartmill et al., 2009; Fuentes et al., 2009; Hellinckx et al., 2013; Henderson & Green, 2001; Johnson et al., 2013b; Myles et al., 2003). Autistic students rarely justify spaces between alphabets and words compared to normal children who are the same age as them (Fuentes et al., 2010; Johnson et al., 2013; Rosenblum et al., 2016).

In terms of the alphabet size, autistic students tend to write overly tall and wide cursive letters (Beverdorff et al., 2001). Problems attached with alphabet size might be due to cerebellar and basal ganglia dysfunction. According to Adak, Chaudhuri, and Blumenstein (2017), computer-based handwriting analysis explains that neatness is an "aesthetic property" that is related to the "beauty of appearance" of handwritten documents. Even though handwriting neatness does not have a direct influence on handwriting legibility it does affect individual satisfaction with handwriting legibility (Simpson, McCluskey, Lannin & Cordier, 2016).

Occupational therapists should focus and seriously take into account students' perceptual visual skills, visual-motor skills, motor planning and sequencing, bilateral coordination, hand-eye coordination, and other related skills while preparing treatment (Case-Smith & Schneck, 2015). However, the major problem of children with autism is impairment of working memory and accompanied by left hemisphere dysfunction. They need to be trained with Brain Gym interventions that could allow the integration of both sides of the brain hemisphere through visual-motor training, visual cue guidance, verbal cues as well as adequate writing and motivation training through a comprehensive Size Matter Handwriting program to help them build a long-term memory in writing precise and neat lowercase letters. Although there are studies that suggest that short term interventions focus on fine motor skills and visual motor skills are effective enough in improving handwriting skills among all categories of primary school students (Ohl et al., 2013), handwriting interventions study among autistic students is still limited (Asaro-Saddler, 2015; Finnegan & Accardo, 2018; Kuskiki, Chau & Anagnostou, 2011; Pennington & Delano, 2012). Therefore, we take the initiative to draft an intervention that combines Brain Gym dan The Size Matter Handwriting Program concepts. The treatment of "Efficient Writing" is carried out based on the principle of Bandura's social cognitive learning theory. Bandura's social cognitive learning theory defines that the principle of learning is through observation, reinforcement, and motivation as three major teaching guidelines to increase the attention needed so that the movement task information presented can remain in working memory. This study aims to evaluate the effectiveness of "Efficient Writing" on the autistic students between 13 to 16 years old in an intervention center.

The objectives of this study are:

- i. To identify the effectiveness of the "Efficient Writing" intervention on handwriting in terms of the neatness of autism with dysgraphia.
- ii. To identify the strengths and weaknesses of the "Efficient Writing" intervention.

## 2. Literature Review

Brain Gym is effective in improving the competency of handwriting skills in terms of the legibility, writing lower case letters on red and blue-line paper, and justifying space between alphabet and word (Ocampo et al., 2017). Brain Gym is an intervention based on the Theory of Educational Kinesiology, in another word, learning through movement. According to

Kirpichnikova (2006, p.2), body movement relies on brain function. Brain Gym can complete the transmission of information in the brain and subsequently optimize learning capabilities through simple coordination movement. For example, bilateral skill activities such as Cross Crawl can activate both hemispheres of the brain evenly. The activity involves the movement of both sides of the body which requires coordination movements of eyes, ears, hands, feet, and even the muscles. When both sides of the hemisphere and the four main parts of the brain (lobes) are activated, cognitive can be improved to smoothen the learning process.

Keinath (2005) found that Brain Gym exerts a positive effect on handwriting skills. The study involves 14 students in a primary school. The age of students ranges from 7 to 9 years. Throughout the treatment period, Brain Gym was instructed by teachers who are trained by researchers. Brain Gym workouts started with PACE for seven minutes per day. PACE activities involve Water, Brain Buttons, Cross Crawl and Hook-ups. Another six more Brain Gym exercises were also conducted at least once on the same day when the students began to feel tired or unable to concentrate on tasks. The results showed that 12 respondents of the treatment group were able to write more alphabets in 20 seconds in The Handwriting Skill test.

Amtonis and Fata (2014) found that Brain Gym can improve cognitive function among elderly with poor working memory. The study by Amtonis and Fata (2014) involves a total of 18 seniors aged 65 and over. The respondents were instructed to perform Brain Gym exercise for 20 minutes every morning for 3 weeks. Among the Brain Gym exercises performed include Cross Crawl, Lazy 8, double doodles, owls, hand activation, leg waving, gravity gliding, pairs of horses, water, and brain button. The results showed that the respondents' cognitive function increased in terms of the place recognition, time, number counting skills, memory, and concentration.

According to Diana, Mafticha, and Adiesti (2017), regularly performing Brain Gym can stimulate the brain resulted in the improvement of hand-eye coordination skills which is essential to improve gross motor and fine motor skills among students aged 4 to 6 years.

Other than improve cognitive function, Brain Gym can help a person calmer emotionally. Dustow (2007) showed that an autistic student who practices Brain Gym for 30 days continuously was able to reduce behaviour problems such as screaming and crying. As such, it is suitable to be practiced among autism with dysgraphia.

The Size Matter Handwriting Program is the most comprehensive and effective handwriting intervention for students with learning difficulties. (Pfeiffer et al., 2015). It was planned using a pupil-centered explicit teaching method that underpinned cognitive theory, motor learning theory, and motivational theory (Moskowitz, 2009). The principle of Motor Learning Theory is implemented through incorporating practice and repetition into program materials as well as in daily life. The principle of Motivation Theory is incorporated through colourful, fun, and engaging activities. While cognitive principles are incorporated into the direct instruction of explicit letter formation techniques with consistent, meaningful terminology. Children learn the importance of letter size at different stages. The Size Matter Handwriting Program suggests teachers motivate his or her students by incorporate meaningful learning activities and rigorous objectives in teaching based on student needs as well as modify their teaching methods according to students' achievement level. This will assist them to master writing skills in terms of forming the legible alphabet letters. The Size Matter Handwriting Program Intervention uses explicit teaching sessions, correction, and self-assessment, verbal feedback with visual motivation (Pfeiffer et al., 2015). In addition, The Size Matter Handwriting Program Intervention also supports the development of handwriting skills in a linear sequence, begins with precise alphabet formation, placement of alphabet writing on lines, and able to justify the spaces between alphabets.

According to Pfeiffer et al. (2015), SMHP interventions can improve the handwriting skills of preschool students, first-year students, and second-year students. The study by Pfeiffer et al. (2015) involved students from two schools, one of the schools located in the Massachusetts Metropolitan area and another in rural New York. The treatment group received teaching sessions of 20 minutes per session for five days a week for 40 days. They are guided to review the alphabets they have learned each weekend. The alphabet taught is based on the size of the alphabet. Lower case letters such as "b" and "d" are taught separately at different times to avoid confusion. The intervention began with the teaching of 8 key concepts. A dice-rolling game was conducted to determine the frequency of writing exercises. The cue guidance given to each class is different, the alphabet was introduced based on the needs of the students in that class while the three-lined paper was used for writing practice purposes. The results showed that there were significant changes in the handwriting of the students in all three experimental groups.

After a year, Zylstra and Pfeiffer (2016) once again proved that SMHP handwriting interventions are effective in improving handwriting skills. The study aimed to evaluate the effectiveness of handwriting interventions administered by occupational therapists. The experimental group that received the intervention consist of preschool special education students that received an individualized instruction plan (IEP). The intervention was given every two weeks with a total of 30 sessions over 16 weeks. Two alphabets were taught in each session. The participated occupational therapists have experienced therapists who have 25 years of work experience averagely. The results showed that SMHP intervention can improve students' handwriting skills and is suitable to be performed in classroom teaching. In this study, we modified some of the concepts of The Size Matter Handwriting Program and combined it with Brain Gym into "Efficient Writing" to meet the need of autistic students with dysgraphia.

### **3. Method**

#### **3.1 Research Design**

In this study, the ABA design of single-subject design was used to identify the effectiveness of the "Efficient Writing" intervention on the neatness of the handwriting of autism with dysgraphia. "A" represents the basic or baseline phase. In this phase, the baseline is recognized for dependent variables while "B" represents the treatment phase. The treatment phase will initiate and perform for a length of time until consistency is found in the target skill or behaviour (dependent variable). The treatment is then can proceed to the third phase of "A", which is also known as the basic phase. The assessment given in the third phase is the same in the first phase, the test terminated once the result is stable.

#### **3.2 Sample**

The objective of this study was to investigate the effectiveness of "Efficient Writing" among the autistic students between 13 to 16 years old with severe handwriting difficulties. Therefore, the purposive sampling method is used to ensure the most suitable sample for this study was selected. The sample was chosen from an intervention center in Seberang Perai Tengah based on the students' individualized educational plan and development progress report. Few criteria were used to filter out the most suitable sample from a population. First, the sample selected must be able to understand the teacher's instructions and able to aware of when his or her name is called. Next, the sample should be an autistic student who is still facing word copying difficulties and unable to write 80% of the lower-case letter in legible form although have exceeded the age of 12 years old. Lastly, the sample

should have both sides of his or her finger and wrist that can function well on the table. Based on these criteria, only one sample was selected and the selected sample was given the nickname Chong in this study.

### 3.3 Instrumentation

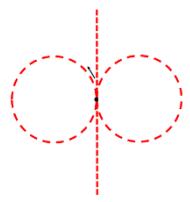
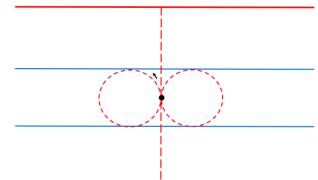
A formal test paper had been adapted to be used as pre test and post test to identify the students' existing knowledge before treatment was given and the retention of students' handwriting skills after the treatment. The assessment paper only involved components that were important for handwriting skills. The respondent was required to copy some of the syllables he had learned on the four-lined paper in the test paper. The test paper was extracted from the Year 2 3M Malay Basic activity book (learning disabilities) based on the standard curriculum of primary school.

The scoring rubric for the assessment of handwriting skills in terms of the neatness of handwriting is the same for formal assessment and informal assessment. According to Keifer (2015), the direction or sequence of writing, the point of overlap (closure of circle shape and accuracy of straight lines) and the type of line (alphabetical component) should be prioritized. Due to the validity of the assessment rubric has never been studied in Malaysia, we adapted the scoring rubric for the handwriting skills instrument which was designed by Cori (2015), who is a kindergarten teacher and an author of Mrsbsbeehive.com. Besides, Cori (2015) also emphasized that all letters were written must touch the lines of the paper at the correct point. This is also emphasized in the The Size Matter Handwriting Program. The purpose of this concept is to identify the effectiveness of the "Efficient Writing" intervention on handwriting skills in terms of neatness on four lined paper. Full marks for each letter are four. The total assessment marks obtained by the respondent will be divided by the maximum total marks and then multiplied by 100%. The scores are recorded in percentage in a table and being interpreted in the form of a line graph for visual inspection. The data were then supported by the result of the document analysis based on the respondent's handwriting on the pre test and post test paper.

### 3.4 The Procedure of the Intervention

In this study, the planning schedule of the three phases is as follows.

Phase 1 (one week)	Phase 2 (6 weeks)	Phase 3 (one week)
Repeated measurement for pre-test.	<p>1<sup>st</sup> week to 6<sup>th</sup> week</p> <p><u>1<sup>st</sup> slot</u></p> <p>Brain Gym: Cross Crawl, Lazy 8 and visual motor skills activities.</p> <p><u>2<sup>nd</sup> slot</u></p> <p>Handwriting practice on blank A4 paper with Alphabet 8s printed on it (see Figure 1).</p> <p><u><i>Figure 1: Laminated blank A4 paper with Alphabet 8s printed on it</i></u></p>	Repeated measurement for post- test.

	 <p><u>3<sup>rd</sup></u>                          <u>slot</u></p> <p>Handwriting practice on four lined paper with Alphabet 8s printed on it (see Figure 2).</p> <p><i>Figure 2: Laminated four lined paper with Alphabet 8s printed on it</i></p>  <p><u>4<sup>th</sup> slot</u></p> <p>Rewrite the same letter in the air.</p> <p>The reading syllabus started with the letter learned based on pictures.</p>	
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There will be 30 sessions of treatment provided in the intervention. Each session consists of four slots which take 60 minutes. The main activities selected from Brain Gym to be carried out in this study were Cross Crawl, Lazy 8, and Alphabet 8s. Bandura's social cognitive theory acts as a key teaching step in the "Efficient Writing" intervention. Each intervention session is delivered based on the learning principles of Bandura's cognitive social learning theory which relies on the four processes in sequence. Each activity begins with a Brain Gym exercise (motor visual coordination movement) to draw the student's attention to observe the demonstration, followed by a repetition exercise of the letter formation on the four-lined paper demonstrated by the model. Guidance supported by coloured and visual cues learning aids such as the use of Alphabet 8s is provided to increase their focus to strengthen their memory on how to form lowercase letters in correct manners and neat sequence. Next, the model was then demonstrated, the letter was written on the laminated paper printed with alphabet 8s on four coloured lines (red-blue-blue-red). The respondent was then trained to write the same lowercase letter on it. After that, reinforcement activities such as reading the syllabus based on pictures are intended to strengthen students' memory of the lowercase letter shapes learned. Finally, feedback and motivation such as praise and stars are given before, during, and after writing exercises serve to correct mistakes and encouraged movement so that the information to be conveyed can remain in the student's memory. Chong was required to write letters taught in a four-lined exercise book after returning home under parental guidance. The informal assessment was carried out based on the respondent's handwriting on the teaching material (laminated A4 paper printed with Alphabet 8s) and the four-lined exercise book.

### 3.5 Data Analysis

The pre-test was given in phase one and the post-test was given in phase three. Treatment started in phase two, repeated measurement on handwriting neatness was carried out until the data collected are consistent. During the treatment period, quantitative data was collected from informal assessment during the treatment period based on the respondent achievement in percentage and then interpreted into a line graph for visual inspection. The data were supported by the result of the document analysis based on the respondent's handwriting on pre-test and post-test paper and the semi-structured interview data from the teacher who has conducted the "Efficient Writing" during the treatment period to gain her perspective on the effectiveness of the intervention.

### 3.6 Results

Figure 3: Analysis of Chong's handwriting skill in terms of neatness

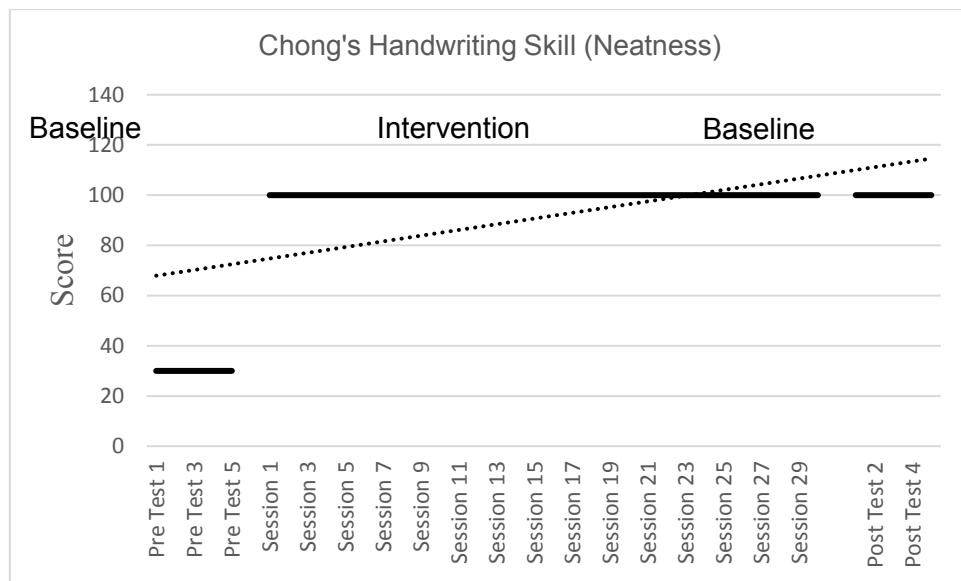
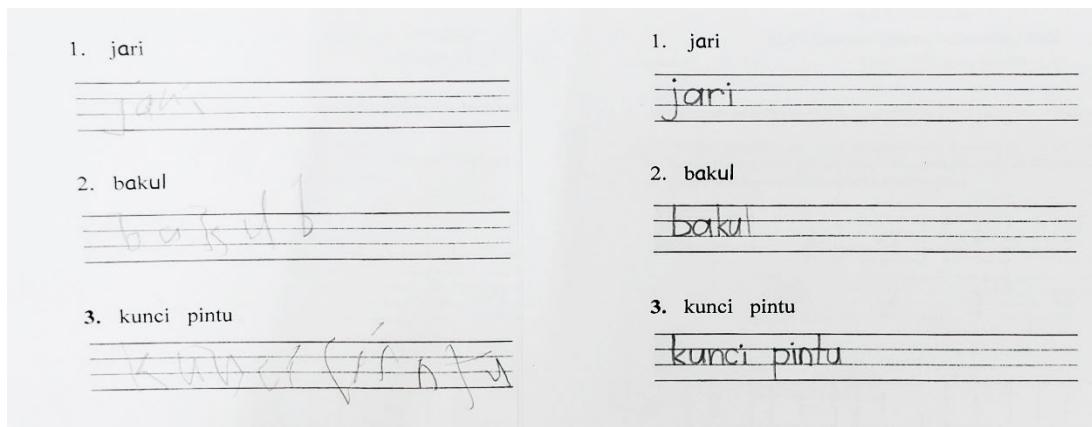


Figure 3 shows data analysis of Chong's handwriting skills in terms of the neatness of handwriting. There was a significant increment in Chong's handwriting skills throughout the three phases in this study. As soon as the intervention started, Chong's handwriting skills improved from 30% to 100%. Chong's score was maintained at 100% even though the treatment had been removed in phase 3.

Figure 4: Chong's pre test and post test paper



As shown in Figure 4, Chong could write lower case letters in equal size neatly in the four-lined paper in his post-test paper.

## 4. Discussion

The results of the analysis show that explicit teaching allowing teachers to modify teaching techniques based on specified objectives is effective in improving the handwriting skills of the autistic students with dysgraphia. Through explicit teaching accompanied by visual cue guidance and verbal feedback, the respondent can write lowercase letters on four lined paper neatly. The result aligned with the study conducted by Pfeiffer et al. (2015) who had proven that SMHP interventions can improve handwriting skills. Additionally, this intervention also can be incorporated with verbal stories to act as a reminder of the sequence of the letter formation which could assist the respondent to write correctly and neatly on four lined paper. According to the teacher who conducted "Efficient Writing" during the treatment period, Brain Gym activities also exert a positive effect on the respondent's working memory. Chong was able to form letters according to the sequence inconsistent size on the four-lined paper after the treatment. The reinforcement activities through dice rolls had successfully maintained the respondent's interest to continue to practice handwriting. Chong became more enthusiastic and confident when his writing was given stars by the teacher.

The only weakness of this intervention is the time allocated for each slot varies from being extended or shortened based on the respondent's progress. It is suggested that the respondent be provided a video prepared by a trained teacher. Whereby he can practice at home under the parent's guidance. This will increase the effectiveness of the "Efficient Writing" intervention. Therefore, the parents must play an important role by giving full attention and support to make "Efficient Writing" a success. Besides, the teaching materials used for letter formation during the treatment are very effective. However, the teaching material used for visual-motor skill training such as the basketball should be changed to plastic ball based on the respondent's ability when necessary.

The findings of this study are expected to be used as a guideline, especially for teachers, parents, and the ministry. The ministry can disclose the relevant knowledge to trainee teachers who are going to graduate or prepare to teach the autistic students. Other than that, the ministry can also provide training and share the knowledge through workshops and courses to teachers who teach in day schools or primary classes so that consistent methods can be used to optimize the learning experience. In this regard, teachers who teach in the premier classes in day schools should be exposed to the teaching methods of "Efficient Writing".

## 5. Conclusion

This study not only highlighted the strengths of the intervention but also contribute suggestions for improving the handwriting intervention among autistic students with dysgraphia guided by teachers and supported by parents.

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## APPLYING PERSON CENTERED PLANNING TO AN INCLUSIVE ECCD IN BHUTAN

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### ABSTRACT

A good Early Childhood Care and Development [ECCD] center serves as an effective bridge, between home and school, helping young children step gently into learning and widening their experiences of the world. The ECCD offers a safe and nurturing environment for all children while at the same time challenging them to develop independence and the tools of exploration. Perkins International developed an adapted version of the Person Centered Planning process at Hejo ECCD to help each family to share their child, and their dreams as well as their fears with the ECCD staff so the whole team could develop a map together for the year ahead. This powerful and positive process was first developed to support children with disabilities and delays and their families, but was quickly extended by the Director to cover all children in the center. The presentation describes the process and the ways in which it has served the children, the families, the facilitators and the management in their journey together.

**Keywords:** inclusion, ECCD, family support, transition planning

### 1. Introduction

Person centred planning was initially developed as a way to reflect on the quality and direction of the lives of adults with developmental disabilities. The process is one of reflection, both by the individual and by those who care about them and are involved in their lives. The discussions are not led by the impairment but focus on identifying the various abilities, aspirations and concerns of the individual. The key areas discussed include exploring the nature of the person' life now and how they would like their life to change. From this "dream" the team works together to draft a plan toward that desired future (Mount, 2000, Falvey, Pierpoint, & Rosenbaum, 1994).

Several different approaches and models of planning can be followed to enable identification of the core issues for individuals and guide plan development and implementation. All approaches share the same goal in that they are working to help create a plan that responds to the abilities and interests of the individual, valuing their life and their goals.

## 2. Person Centered Planning in Bhutan

Perkins International works toward a world where every child learns and thrives as a valued member of a family, school, and community. The work in Bhutan focuses on helping develop quality education and positive outcomes for people with complex disabilities. While as a nation, Bhutan is committed to inclusion, it is also just developing in-country expertise and systems to provide these services. Perkins International is working closely with the government, organizations, schools and families to develop evidence-based effective systems to support children and their families.

As a strategy, Perkins International focuses on enabling transitions and it is in this context that the person centered planning process was first introduced. When a child is born with an impairment, the focus of families and professionals tends to be strongly on “fixing the problem”. The result is often that the person’s life becomes atypical. Their days are spent differently from other children their age. People around them hold different expectations for them and what would be normal - sending a child to school for example, may simply not seem possible or important. Therefore, although the educational system is free and open to all students, children with complex disabilities may not join, or when they join may not be able to receive meaningful services. Two important transitions that are often delayed or that happen with little preparation or clarity of thought were identified as the focus of this work.

Leaving school - children with complex disabilities who were in school, often had no plan for what they would do after school and therefore their school programs lacked a clear focus.

Leaving Home - children with disabilities often started ECCD or school later than their peers. They often entered without adequate preparation and parents had poor clarity on their goals. Often delays were only identified by the ECCD facilitators and without a way to talk about this topic with families or clarity on what they could actually do for the child as they lacked special skills, the chance to make a difference, was left unused.

Practical workshops were conducted with professionals serving these age groups and several professionals and organizations adopted this process.

### 2.1 Person Centered Planning at Hejo ECCD

Hejo ECCD was already serving a few children with concerning delays. They were the first ECCD that took up this approach in an effort to reach out to these families. They understood that although they had no special expertise in disability, providing children and families with access to typical activities and environments was a very important and positive contribution in their lives.

Drawing deeply on the strategies of the MAPS process (Forest & Lusthaus, 1990), we ask families to reflect on their earliest memories of their child and then draw their major memories until the present. The act of drawing makes parents relax and the conversation to flow more naturally. Partners fill out little details and so many things they value, celebrate and worry about become visible. This process helps the ECCD facilitators understand each parent’s perspective and enriches their understanding of what may be helpful and valued by the family.

The next set of maps are to help make the child's life visible - not just to the facilitators but often, for the families, it is a chance to stop and consider the range and variety of their child's experience. We ask them to draw their child's current life across three areas over the last month or two - Places where their child spends time, Play and Relationships. We ask them to draw - What exactly does the child do? With whom? How often? Does your child enjoy this? And so on. The drawings reveal much about parent perspective and priorities and the children - their nature, their preferences, as well as about the quality of experiences of their life thus far.

The final map is about dreams. We ask parents to put the present aside and to look 5 years down the road. What would they like to see? What is the hope for the child across the same three areas - Play, Places and Relationships? We also ask about their fears - Bullying? Loneliness? Voicing their dreams and fears is hard for many families who may never have thought so far ahead. Yet, this step allows us to focus on desired goals and to set plans that lead toward this reality.

While the first plans were made with families of children with disabilities, it was quickly extended to all the families of the children at the center.

### 3. Valued Outcomes

ECCD Director Yangree explains that there were many reasons she began asking all parents to go through the process with the team from Hejo, but the biggest one was that EVERYONE benefits - child, family, facilitators and organization.

A bond with families: the process itself led to a deeper bond with families, creating a strong and positive base which helped all future interactions.

Meaningful planning: based on the maps, the team could anticipate and customize the child's experience at the center, even before the child began. From materials and activities, to goals and strategies, the team was already armed to give the child a comfortable transition from home and also plan thoughtfully for the transition from the center to school.

Coordination between home and center: consistency is an important strategy when trying to enable change or learning and having shared goals meant better commitment to consistency across all the adults at home and center. Facilitators were able to more easily focus on each child's goals, as the visual maps made it easy to recall as they work with children.

Creating a community of support: parents bonded over shared dreams and supported each other naturally. Parent support and education that was started for parents of children with disabilities was naturally extended to all. Similarly strategies, materials and activities first thought of for children with disabilities, were simply integrated into daily routines o the center as the staff realized that many children benefited.

Making the child visible: perhaps the most important outcome was that all the adults learned to step back and really see the child, making it easier to have conversations about delays or difficulties that are otherwise so challenging.

## 4. Conclusion

The process is repeated annually for every child and revisited as new goals or concerns arise. Every year, as children transition successfully into school, parents and facilitators reflect on all they learned and were able to do because of the process of dreaming and planning together. The process continues to yield positive outcomes for children and families and guides the development and implementation of inclusive practices at the ECCD center.

We conclude with excerpts from a letter to Hejo ECCD center from a parent:

*'When we first started to make the map, I thought this was easy, I am the mom, I know my kid but it turned out, when we really needed to pinpoint and put it down, I really needed to think and really re-look at my assumption of what I knew. These maps really made me check my facts and correct my assumption about my own kid and about what I wanted for him....These years of doing the map have paid off, I not only understand my son better but also when he is about to start his formal schooling both he and I are ready. When the time for decision making came it was not hard to choose the school. It helped me and my husband choose a school based on values that we wanted to see in him.'*

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# EXPERIENCING AND COPING WITH SOCIAL STIGMA: STORIES OF MOTHERS OF DISABLED CHILDREN IN SOUTH PUNJAB, PAKISTAN

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## ABSTRACT

Our society has many social and cultural inequalities, common people face discrimination, inequality and hatred because of one's religion, race, gender and social status. Life for disabled children and their parents is not easy go, they both have to suffer in their respective social environment. Our society is patriarchal, and all evil or bad things are attached to females. So, the first explanation for the birth of a disabled child revolves around between mother. From family members to neighbours, everyone blames the mother. This exploratory study is aimed to find out the social stigmas attached with mothers and how they cope with the social stigma to live a normal life. The study is qualitative by design, researchers used purposive sampling and used the in-depth interview as a tool for data collection. A total of 10 mothers of disabled children were interviewed, and data were analyzed by using thematic analysis. Results show that mother face and experience inhumane/ undesirable behaviour from family members and also from neighbours. They use a lot of different coping strategies such as religious, cultural and different social therapies to avoid the additional socio-psychological pressure due to the social stigma attached with them. Some of them also find social support from their husbands and in-laws but the overall behaviour of their village's people remained negative and discouraging.

**Keywords:** Social stigma, Disabled Children, Coping Strategies, Social Life

## 1. Introduction

Children with disability need special attention and care from family members and mothers. It is the core duty of parents to invest their time and financial resources to make their disabled children socially trained. The social life of these children and their parents specifically mothers are very hard and difficult. Children and mothers face the social stigma differently, but the intensity of stigma is the same (Ali & Rafique, 2015). Pakistan shares 15 per cent of disability around the world, with almost 31 million people have some symptoms and characteristics of any disability. The absence of reliable data regarding the number of disabled populations arise many questions for policymakers. Although the 3rd December of every year is observed as Disability Day in Pakistan, awareness about disability causes still lacked in the common population (Rathore & Mansoor, 2019). SAMSON and Shehzadi (2020) rightly questioned the methodology used for data collection regarding different categories of disabilities. They argued there is a dire need to conduct a fresh survey with appropriate categorization of disability, trained and knowledge equipped enumerator should conduct and report the survey results. Pakistan still unable to fix the problem of a uniform definition of disability. There is no national-level

department or registry which has accurate and updated data of disabled persons (Razzaq & Rathore, 2020). It is well-established fact that the family members and disabled person, both went through very tough, undesired and unacceptable social behaviour. The birth of a disabled child brings significant changes in the life of family members, for parents, challenges are even heavier as they are core responsible for the upbringing of the child (Ali & Rafique, 2015). The pressure of neighbourhood and society mount on families which have children with disabilities, in some cases families were forced to conceal the fact that they have a child with a disability. Relatives and other family friends refuse to do engage in marital relation because for them it is a genetic issue and will affect their children also in future. People also tend to explain the birth of disabled children with the sin of parents, this explanation forces the parents to develop a sense of criminality and blame themselves for all the evils that happened to the family (Shakeel Ahmed, 2015).

People stigmatized the family members who are associated with disable or mentally ill children. Stigma can be explained as negative or stereotyping or discrimination and rejection of people who are suffering from any disability (Karnieli-Miller et al., 2013). Courtesy stigma is referred to as the impact on the people who are associated with disabled children; most importantly family members and close relatives of those children (Goffman, 1963). Mitter, Ali, and Scior (2019) explained that there are four types of stigma, first one is public stigma which means the attitude of the public towards a stigmatized group. The second form is self-stigma, which happened when stigmatized people got aware of public stigma and internalized it. The third form is a courtesy stigma or family stigma, in this situation family members develop negative emotions for themselves which may result in avoidance from social interactions and concealment of facts. Internalization of courtesy stigma gives rise to the feeling of affiliation with a disabled person, lead to the fourth type of stigma, affiliative stigma. Green (2003) argued that there is little attention given by social scientist to explore the phenomenon of courtesy stigma, most studies focused on the stigma and problems of people who are facing any type of disability. The issue of distress and emotional well-being of mothers and family members of disabled children has got tiny space in academic debate.

Family members of mentally ill people do support them from financial needs to social and psychological needs. They often face the deviant behaviour of disable person and tolerate it with dignity, even they need to convince other people about the deviant behaviour of a mentally ill member that his act is beyond his mental strength. Mothers spent the bulk of their time with the mentally ill children, and this burden of care turns into a social stigma. The process of socialization and caring for disabled children is time taking and a hectic job. For this purpose, mothers specifically and other family members generally take the responsibility to ensure their socialization. They often shortened or abandoned their social activities to make sure that they are available for disabled children (van der Sanden, Stutterheim, Pryor, Kok, & Bos, 2014). The impact of raring or having a child with a disability could be painful for the mother of a disabled child, especially for those who were not prepared to face this reality. She needs to raise her children in a non-conventional way which sometimes changes the meanings of maternity for her, extra care and burden of social responsibilities change her behaviour dramatically. Her relationship with other family members, often shown negative and the conversation turned into harsh discussions. She showed her helplessness and disbelief because she could not change the situation for herself or family members (Barbosa, Chaud, & Gomes, 2008).

## 2. Review of Literature

Küçük and Alemdar (2018) concluded that being a mother of a disabled child is traumatic even the disability is a smaller one. Mother of disable children adopted all-new ways to live a social life. Disabled children are dependent on parents with different degree of dependency. Parents often need to sacrifice their social, familial and economic activities which resulted in stress and economic cost for the family. The social and psychological well-being of mothers affected negatively, and it is directly related to life satisfaction. Song, Chun, and Choi (2015) studied the effects of fathers' participation in parenthood and its association with mothers perceived social stress. Their study confirmed that if fathers of disabled children help mothers in the process of socializing of the children, it would have a positive and good effect on the mother's wellbeing. Although this study also revealed that children with extreme disability or out of control might have negative effects on both mother and father and it increased the stress level and anxiety during the process of parenting. Findler (2000) tried to find that how important is the support of grandparents to assist the parents in socializing the disabled children. Parents who are responsible to take care of physically disabled children spent a lot of energy, time and money. Children need special therapies, physical activities and more attention from parents than a child without any disability. In this process support of family members especially grandparents are pivotal to share the burden and stress of parents. Shenaz Ahmed, Bryant, Ahmed, Jafri, and Raashid (2013) interviewed 30 mothers and fathers of Down syndrome children. They found that parents associated the birth of a Down syndrome child with a positive note because of their religious belief. However social and cultural association showed different results, people and family members stigmatized parents for having Down syndrome children. Religious therapy was a core coping strategy for them to minimize the effect of social stigma. Grover et al. (2017) reported that there are no formal caregiver institutions for mentally ill children in a country like India. Most caregivers are the family members of mentally ill children. They found a majority of parents or family members who are involved in the caregiving of mentally ill children reported the stigma. Associative stigma is the dominant form that disturbed mothers at a high level, caused unhappiness, emotional disability and blaming oneself for all evil things. Kimura and Yamazaki (2013) concluded in their study that mothers who have multiply disabled children faced a series of social and psychological problems. Caring for the children all day is a burdensome assignment. Mothers narrated that they are not exempted from other household responsibilities. Most mothers perceived husband and other family members support as a positive thing, it helped them to cope with the social stigma. Greer, Grey, and McClean (2006) concluded that mothers of intellectually disabled children agreed with the statement that their children were a source of happiness, family cohesion and self-fulfillment for the family. They also argued that formal social support plays a positive role in mobilizing family members to take care of children along with mothers. Oti-Boadi (2017) reported that mothers of intellectually disabled children faced stress, psychological problems and social adjustment problem. Although raising disabled children is a very demanding job but at the same time, it gives mothers a sense of pleasure, hope and satisfaction. Spiritual and religious therapies are the best coping strategies to reduce the impact of social stigma. Yousafzai, Farrukh, and Khan (2011) suggested that one positive aspect of being a mother of disabled children is the empowerment of mobility. They can move to rehabilitation centre and study centre for their children education and therapies. The lack of support from family and lack of facilities in rehabilitation centres are affecting them negatively. The role of community-based rehabilitation is pivotal for the care of disabled children.

### 3. The Objectives of the Study

Followings are the objectives of the current study;

1. To explore the social behaviour of people with mothers of disabled children
2. To explore the lived experiences of mothers of disabled children.
3. To find how the mothers cope with social stigmas attached with them as being a mother of disabled children.

### 4. Methodology

The present study is a qualitative study and exploratory in terms of research purposes. The researchers used the interview as a tool for data collection. Through the semi-structured interview, the researchers interviewed 10 mothers of disabled children. The researcher used purposive sampling as this sampling technique is suitable for the unique and extraordinary situation and cases. All the 10 participants who are selected for the study belongs to the village of District Dera Ghazi Khan. Before the interview, the researchers briefed participants about the research study and sought their consent to participate as respondents. The researchers assured participants that their identity will not show anywhere, and information will be used only for research purposes. Respondents' names locations and family identity will be kept anonymous and confidential. South Punjab in general, and Dera Ghazi Khan in particular, is considered the most backward and conservative area. The patriarchal family system is a dominant feature of this society. The researchers tried to get appropriate information without breaking their traditional decorum.

### 5. Results and Discussion

#### 5.1 Experiencing the Social Stigma and Social Support

*The pain of knowing that I have given birth to a disabled child is indescribable. We were very happy and expecting a baby. At the time of birth, we were traumatized by confirming our first baby is not a normal child,* told one of the participants. Experiencing trauma regarding the birth of a disabled child can bring a lot of negative stress to parents. Gill and Liamputpong (2011) reported the same findings and concluded that to avoid social stigma, the role of coping strategies is critical. *Sara told that she is lucky that she has a very kindhearted husband. He supported her in every matter after the birth of our first child. She further explained that the behaviour of the community is not encouraging, often people use negative words and phrases for my child.* Davis and Manago (2016) concluded that many studies documented the social stigma faced by mothers of disabled children. They also found that social stigma devalued the social position. Dadkhah, Ghaffar Tabrizi, and Hemmati (2009) elaborated that the health quality of mothers of disable children were low compared to other mothers. Coping strategies have a positive correlation with the health quality of mothers of disable children. *Amna narrated that her health is not good after the birth of a baby boy. She experienced severe stress and stomach problems. She told that her husband is not cooperative at all. He refused to go to a doctor for her routine checkup.* Taanila, Syrjälä, Kokkonen, and Järvelin (2002) concluded that spouse support has a positive relationship with coping with the social stigma. The families with a high rate of coping scores have a better understanding of shared responsibilities. Parents both

husband and wife accepted the reality and acted accordingly. Sen and Yurtsever (2007) evaluated that the families which have poor knowledge about their disabled children faced the greater challenge of social adjustment. Mothers often reported extreme stress and emotional instability, which affected their relationship with spouses. Mothers faced social exclusion from social events because caring the disabled children is their core responsibility. Most of the participants have experienced same type of social stigma. The situation of every mother with disable children is identical, same stress, anxiety and social adjustment problems. Li-Tsang, Yau, and Yuen (2001) reported that parents with better understanding and strong spousal relationship performed well in coping with stress and anxiety. These parents are always open to seek social support from family members and the community. Button, Pianta, and Marvin (2001) examined the role of partner support in caring for disabled children. They argued that the husband's role is very complex and under studied regarding caring for disabled children. Mothers of disabled children explained that they need their husband's practical support rather than emotional support. Rasheeda narrated her story of being ignored in the family. *She quoted her husband and mother in law blame her for the birth of disabled children. My family members do not support me in caring for my disabled children. I used to bear the double burden of caring for my disabled children and doing domestic chores.* Karnieli-Miller et al. (2013) reported that family members of disabled children often face rejection, blame and avoidance by the community members. Mothers experienced shame, disappointment and inhuman behaviour from relative, neighbours and community. Aldersey et al. (2018) interviewed 20 parents of intellectually disabled children in the Democratic Republic of Congo. They concluded that almost every family member of intellectually disable children faced social stigma. The intensity and types of stigma can vary from culture to culture. Tsai and Wang (2009) reported that mother with intellectually disable children experienced a high level of stress and strain. They also have received minimum social support from family and community. They concluded that social support and social stress has a significant negative relationship. The majority of the participants reported that they are living a life with extreme pain and their value in the family is almost zero. We lacked social support, social empathy and our social position is undermined due to our disabled children.

## 5.2 Coping Strategies and Social Life

Cankurtaran Öntaş and Tekindal (2016) concluded that mothers of disabled children sacrificed their social and personal life. Their social mobility is restricted to only hospital and schools. They did not have time for family social gatherings. *Naghma narrated that she has abandoned her social activities after the birth of my disabled children. I have devoted myself to his care and I am happy God has chosen me for this.* The religious and spiritual coping strategy is the most effective coping strategy for mothers of disabled children. *Natasha responded that she felt herself a blessed woman that God has given me the responsibility to take care of my mentally ill daughter. I spent all day with her, although my burden of work has doubled, I am still happy.* Sharak, Bonab, and Jaled (2017) reported that religious therapies are the best to cope with mental stress for mothers of mentally ill children. Religious belief gave them immense support and satisfaction. Resultantly, mothers felt much better after practising religious coping strategy. Biesinger and Arikawa (2008) interviewed 27 couples who have children with developmental disability to explore the relationship between religious belief and happiness. Mothers have a positive feeling after performing religious activities or saying prayers. *Ismat told that whenever I feel dejected or gloomy, I used to visit my parents' home. I feel relax there, no one blames me for the all evil things that happened to our family.* Most participants have narrated same type of escape whenever their stress level is out of control. Some of them used to visit their sisters or friends' home to avoid the extra pain of social stigma. van der Mark,

Conradie, Dedding, and Broerse (2019) described that social support from husband and family members is vital in reducing mothers' social stress. The natural obligation or order of God gave mothers a reason to take care of disabled children without complaining. Some of the mothers told that involuntary learning made them use to daily care work. Initially, it was painful to listen to people's negative gossips. *Durdana a mother of developmental disability children, expressed that she is now learnt to live with her baby and his illness. Family members often blame me, but I remained calm and composed.* Social coping strategies like singing, reciting Naat or Holy Quran and visiting the place of their choice were effective in controlling stress.

## 6. Conclusion

Researchers observed that the life of the mothers of disabled children is pathetic and tough regardless of the type of disability. The role of the community is negative and discouraging, though some community members are very supportive. Mothers faced all types of social stigma. The dual burden made their life difficult to live. Some mother considered themselves lucky because their husband was cooperative and provided full social support. The coping strategies played a vital role in making the life of the mothers comfortable. Religious and spiritual coping strategies are popular among all mothers. The second most successful strategy was to have a gossip with near and dear ones. Singing and reciting Naat/ Holy Quran were successful stress release activities.

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## IMPORTANCE OF ENTREPRENEURSHIP SKILLS AMONG STUDENT WITH LEARNING DISABILITIES

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### ABSTRACT

Entrepreneurship is a best mechanism to boost up economy of a country. In addition, entrepreneurship skills fostering the innovation and productivity to develop the economy of a country as well as molding a person to be job creator rather than be a job seeker. Thus, entrepreneurship skills are an important key element towards enhancing an independent and productive living for student with learning disabilities. Student with learning disabilities is often categorized as unproductive children and neglected by the society. Students with learning disabilities are under-represented in the workforce, often facing discrimination by employers, and not served in good manner due to their inabilities. Hence, entrepreneurship skills are most powerful weapon to driven entrepreneurial spirit and giving practical competencies that enable to start an own business. In order to develop the entrepreneurship skills, government introduced entrepreneurship education in Malaysian National Curriculum in primary education, secondary education and tertiary education. However, entrepreneurship skills among students with learning disabilities remains behind in terms of research and the importance. Thus, more researches are very crucial on this field. Hence, the purpose of this study is to highlight the importance of entrepreneurship skills among students with learning disabilities. The impact of this study will provide a fundamental knowledge on the importance of entrepreneurship skills among student with learning disabilities for researchers in the future researches.

**Keywords:** Entrepreneurship, Entrepreneurship Skills, Learning Disabilities

### 1. Introduction

The research conducted by World Health Organization (2019) revealed there are currently more than 2 billion people confirmed as people with disabilities, that is 37.5% of the world's population. In Malaysia, based on Special Education Data ended 31 January 2020, it was found that a total of 88,352 students were categorized as students with special needs in Malaysia. According to the data, the number of students who are categorized as learning disabilities is very worrying. This is because a total of 72,683 students were categorized as students with learning disabilities out of 88,352 students with special needs, which is 82 % of the total number of students with learning disabilities. Students with learning disabilities referred to those who are having retardation, disorder or delayed development in any one or more of the processes of speech, language, reading, spelling, writing, or arithmetic. These includes students with ADHD,

autism, down syndrome, intellectual disability, retardation and dyslexia. Currently, this situation in Malaysia reflects global reality, where more and more people suffering from disabilities and the number of people with disabilities may increase over the time.

In many developed countries entrepreneurship skills considered as an opportunity or alternative pathway for person with disabilities to involve in job market (Widoyoko et al., (2018). This is because entrepreneurship skills able to break down the problems faced by the students with learning disabilities especially in finding for permanent job. Developing countries promoting entrepreneurship education or skills through education system to prepare them with entrepreneurship skills for contribute nation's economy. However, Noor Aini Ahmad (2015) found the students with learning disabilities such as down syndrome, autism, hyperactivity, mental retardation and learning disabilities such as dyslexia need support and guidance from individuals who are more knowledgeable in many things in their lives. So that, special education teachers should play an important role in guiding students with special needs to acquire entrepreneurship skills. Therefore, special education teachers need to cultivate the entrepreneurship skills among the students with learning disabilities through educational activities and trainings according to their level of ability.

Furthermore, those who are obtain entrepreneurship skills, they can apply those skills in employment or be able to create their own jobs. Entrepreneurship skills will step up their abilities to be a "job creator" than a "job seeker". In addition, the applied entrepreneurship skills are able to build alternative ideas and creativity to create jobs in the face problem of getting a job and not rely on salaried jobs alone (Anizam et al., 2020). This in turn can overcome the issues of unemployment and employment among students with learning disabilities.

On the other hand, a total of 35,061 students with special learning needs, which is 55 % of the 63,876 students studying in the Special Education Integration Program in Malaysian Primary Schools (Special Education Division, Ministry of Education Malaysia, 2020). Official Special Education Data clearly proves that a large number of students with learning disabilities are in the Integration Special Education Program in Primary Schools. So that, entrepreneurship skills should be tailored among students with learning disabilities since primary school across the curriculum.

Therefore, this paper aims to provide the importance of entrepreneurship skills among students with learning disabilities from various researchers and contexts. This paper will provide a fundamental knowledge on the importance of entrepreneurship skills among student with learning disabilities.

## 2. Literature Review

### 2.1 What Is Entrepreneurship and Entrepreneurs?

There are many definitions for entrepreneurship. Studies shows there is no standardized definition for entrepreneurship. Most of the definition based on the researchers' thoughts and their understanding. Entrepreneurs have certain identifiable attribute. Commonly, entrepreneurship defined as a skill to start a new business. Besides, entrepreneur is an individual who creates a new business, bearing most of the risks and enjoying most of the rewards. In other words, the process of setting up a business is known as entrepreneurship.

Additionally, Schumpeter (1911) highlighted entrepreneur as an individual who introduces new products and services, or creates new forms of organisation, or exploits new raw material. Meanwhile, Low and McMillan (1998) define entrepreneurship is a creation of new enterprises. Thus, enterprise and entrepreneurship are interrelated in the effort of developing employability for the graduates (O'Leary, 2015). Though, Shane and Venkataraman (2007) says entrepreneurship does not have to include the creation of new organizations, it can also occur in existing organizations.

Bruyat and Julien (2000), explains entrepreneurship is a process where brought changes, that lead to generating new values and entrepreneur as a business founder. On the other hand, the entrepreneur is commonly seen as an innovator or a source of new ideas. This is supported by Lumpkin and Dess (2001), the research identifies entrepreneurs has the innovative skills to enhance new values to their own business.

In consequence, an innovative entrepreneur plays an important role to upgrade the economic of an individual as well as contributing to the country. Besides, Gelaidan and Abdullateef (2017) entrepreneurs able to produce new ideas, able to transform the ideas into a profitable business, creative innovative processes and producing employment.

Besides, entrepreneurship is a dynamic process of vision, change and creation. It demands the use of energy and passion to create and implement new ideas as well as creative proposals (Kuratko, 2005). Moreover, Kuratko (2005) interprets an entrepreneur as one who manages, administers and bears the risks of a business.

According to Hardy Loh et al., (2015) entrepreneur is a person with a unique instinct to see changes as an opportunity for value creation. Furthermore, entrepreneurs are visionary, able to conceptualise and implement business plans and possess an inspirational mind-set.

On the whole, entrepreneurship is a knowledge and skill to set up a business. Entrepreneurs able to think and produce ideas innovatively in their own business to upgrade economy at the same time producing employment. It encompasses networking skills, idea creation, developing and implementing a business plan, running a business and evaluating the internal and external business environment.

## 2.2 What Is Entrepreneurship Education?

Entrepreneurship education is not something new to the education system. The idea of infusing entrepreneurship into education has spurred much in the last few decades. As a result, entrepreneurship education enhanced economic growth, job creation, individual growth, improved school involvement and improved equality. Although, there is also important question whether entrepreneurship can be encouraged through education (Barba Sanchez & Atienza Sahuquillo, 2018).

According to Ivanov et al., (2012) education is the only platform to play essential role in the evolution of an entrepreneurial society. Entrepreneurial education is a source to provide concepts, skills, knowledge and built their self-esteem to grab job opportunities (Zahari et al., 2018). Nevertheless, many universities and educational institutions providing entrepreneurship training programs to develop entrepreneurship skills among the students (Rosa Maria et al., 2019).

The Ministry of Education Malaysia has included entrepreneurship education in the New Primary School Curriculum and the Integrated Secondary School Curriculum since 1990s (Ministry of Education Malaysia, 2011). Entrepreneurship skills integrated in all the subjects as an element of across the curriculum. While, entrepreneurship skills taught through life skills subjects in lower secondary schools. At the same time, entrepreneurship skills are implemented in elective subjects such as trade and basics of entrepreneurship subjects in upper secondary school.

However, the content of this curriculum emphasis on the knowledge for students about the processes for managing a business directly. Aspects of student development to become human beings who have entrepreneurial characteristics are only touched on indirectly. As a result of such methods, the resulting students were found to still not cultivate the characteristics of entrepreneurship in daily life (Curriculum Development Division, MOE, 2011). Thus, Ministry of Education Malaysia fostering an entrepreneurial culture across the curriculum starting from year one is important to create a curriculum that is relevant to current needs and future challenges in this 21<sup>st</sup> century.

In addition, teaching entrepreneurship education able to form a visionary generation that has a strong foundation in the aspects of knowledge, thinking skills, communication, creativity, innovative thinking, positive enthusiasm and good moral and ethical values in the context of entrepreneurship. Moreover, entrepreneurship education is a formal teaching that insist knowledge, skills and educate potential entrepreneurs. It's a pedagogical intervention that lets students to create knowledge, competencies and experiences to make it possible for students to initiate and participate in entrepreneurial activities.

### **2.3 Students with Learning Disabilities**

Learning disabilities are individual diagnosed with difficulties in reading, writing, speaking, listening, spelling, reasoning or doing math. Students with learning disabilities have problems in receiving information through their senses. Thus, they face difficulties in processing the information accurately. According to Law on Individual with Disabilities Education Act (IDEA), (2004) learning problems occur in one or more problems occur in the basic psychological processes in writing or spoken language.

The definition of learning disabilities in line with IDEA proposed by Sana Ali & Rafi (2016). Learning disability is a retardation, disorder or delayed development in any one or more of the processes of speech, language, reading, spelling, writing, or arithmetic. These problems are due to disorder or deficiency in any one or more of the basic psychological processes involved in understanding or in use of spoken or written language.

According to Learning Disabilities Association of Canada (2017), learning disabilities refer to a number of disorders which may affect the organization, acquisition, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals with disabilities otherwise display at least average abilities essential for thinking and reasoning. Besides, learning disabilities may cause impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to: language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions.

Department of development of people with disabilities, department of social welfare (2011) defines learning disabilities as brain intelligence that is inconsistent with its biological age. Those who fall into this category are students with late global development, down syndrome, and intellectual disabilities. This category also includes conditions that affect an individual's learning ability such as autism, ADHD, specific learning difficulties such as dyslexia, dyscalculia, and dysgraphia and mental retardation.

In short, students with learning disabilities can be categorized either by the type of information processing or by the specific difficulties caused by a processing deficit. Learning disabilities can be categorized within four broad categories such as spoken language, written language, arithmetic and reasoning. Students with learning difficulties can be successful in their life with a proper guidance, recognition and intervention.

## 2.4 Entrepreneurship Skills

The purpose of Entrepreneurship education is to evolve entrepreneurial competencies through educational activities indirectly. Entrepreneurial competencies were interpreted as knowledge, skills and attitudes (Lackeus, 2015). There are three main themes in entrepreneurial competencies that effect the ability to be a successful entrepreneur. Therefore, entrepreneurship skills under the umbrella of entrepreneurial competencies.

According to Farrington et al., (2012) entrepreneurial competencies categorized into cognitive competencies and non-cognitive competencies. Cognitive competencies are very easy to teach and evaluate, whereas non-cognitive competencies require learning by doing and more difficult to evaluate (Moberg, 2014a). However, current educational policies emphasizing large scale assessment and international standardize test has led to give important to cognitive competencies than non-cognitive competencies. The researchers identified the negative impacts occurs due to neglected non-cognitive competencies among entrepreneurs or students (Farrington et al., 2012). Table 1 shows the entrepreneurial competencies and its sub themes accordingly with the interpretation.

*Table 1: Framework outlining some key entrepreneurial competencies and their relation to cognitive and non-cognitive competencies.*

	Main themes	Sub themes	Interpretation
Cognitive competencies	Knowledge	Mental models	Knowledge on how to resolve without resources
		Declarative Knowledge	Knowledge on basic entrepreneurship, value creation, idea generation, marketing risk
		Self-insight	Knowledge on personal on how to be an entrepreneur
	Skills	Marketing skills	Marketing products, persuasion, dealing with customers, communicating for a vision
		Resource skills	Create business plan, financial plan, obtaining financing
		Opportunity skills	Recognizing and looking for business opportunity, Product/service/concept development skills
		Interpersonal skills	Leadership, give motivation to others, managing people, socializing

	Learning skills	Be an active learner, adopt new situations
	Strategic skills	Set a goal and focus on goals, defining a vision,
Attitudes	Entrepreneurial passion	“I want”, Need for achievement
	Self-efficacy	“I can”, Belief in one’s ability to perform given tasks
	Entrepreneurial identity	“I am/I value”, Deep belief, Role identity, Values
	Proactiveness	“I do” Action oriented, proactive
	Uncertainty/ambiguity tolerance	“I dare”. comfortable with uncertainty, adaptable
	Innovativeness	“I create”. Innovativeness, creative
	Perseverance	“I overcome”. Ability to overcome

Source: Adapted from (Lackeus, 2014)

Based on the table 1, there are six sub themes highlighted as entrepreneurship skills. There are marketing skills, resource skills, opportunity skills, interpersonal skills, learning skills and strategic skills. Though, the Ministry of Education emphasizes entrepreneurship skills in the Primary School Standard Curriculum through teaching and learning activities so that it becomes a culture in their daily lives (Curriculum Development Division MOE, 2011). There are five main objectives of the entrepreneurship skills highlighted by Curriculum Development Division as follows:

1. Practice an entrepreneurial attitude
2. Practice a way of thinking towards entrepreneurship in necessary situations
3. Practice simple basic sales management knowledge and skills in relevant activities of daily living
4. Produce knowledge-based products as well as technological and vocational skills
5. Practice good moral and ethical values in the context of entrepreneurship

Besides that, table 2 summarizes the main objectives and focus of entrepreneurship skills in the Primary School Standard Curriculum through teaching and learning activities.

*Table 2: The main objectives and focus of entrepreneurial elements highlighted by Ministry of Education Malaysia.*

Main Objectives	Focus	Interpretation
1. Practice an entrepreneurial attitude	Responsible for decisions	The willingness to take responsibility for the results is closely related to the strength of the student's internal self-control.
	Aware to the opportunities	Aware to their own abilities and take the opportunities available in the surrounding.
	Dare to take estimated risks	Students need to learn to manage risk and ensure that the risks taken are reasonable and commensurate with the rewards received.
	Creativity and innovation	Students who are provided with a creative mind will be able to solve problems logically as well as be able to generate ideas that can be implemented in the form of innovation.

	Flexibility	Students who practice an attitude of flexibility will have the ability to adapt to changes in the environment into creativity and innovative.
	Desire for immediate feedback	Students who have a strong desire to use knowledge to improve their performance. This attitude is closely related to the desire to learn from past mistakes.
	Future oriented	Students who are given exposure to future business patterns will have a desire to get involved in the field.
	Willingness to learn from mistakes	Accepting failure as an impetus to achieve success. Failure is a lesson so that the same mistakes are not repeated.
	Capable of leading	Students has the experience to lead, has knowledge of the technology and the environment.
	Achievement oriented	Students know the objectives and goals to be achieved in a matter. The objectives are an impetus to move students towards achievement.
	Resilient	Students dare to face various challenges and obstacles to succeed in a project. Students need to have high mental, physical and emotional strength while continuing to deal with all problems with perseverance.
	Tolerant of high uncertainty	Students continue to perform assigned tasks despite facing various possible situations as a result of not getting accurate information or unexpected changes. They need to have the patience to tolerate uncertain situations.
	High perseverance	Students need to be able to face various challenges to ensure success in their efforts.
	Can build social networks	Students can use social networks to forge collaborative relationships to obtain information or share resources.
1. Practice a way of thinking towards entrepreneurship in necessary situations	Students need to be critical, creative and innovative.  This will help them identify opportunities in the environment, so that they can continue to succeed or at least survive by their efforts.	The way of thinking towards entrepreneurship in the required situation involves nine main steps, namely:  <ol style="list-style-type: none"> <li>1. The practice of observing the environment intentionally and purposefully</li> <li>2. Analyze observations critically and creatively</li> <li>3. Generate ideas from observations</li> <li>4. Choose the best idea from many ideas</li> <li>5. Improve selected ideas in the form of innovations</li> <li>6. Evaluate ideas critically in context</li> <li>7. Implement ideas in the form of abstract or concrete technological products</li> <li>8. Adapting new ideas to the needs of society and the environment</li> </ol>

		9. Continuing to improve the quality of ideas
2. Practice simple basic sales management knowledge and skills in relevant activities of daily living	<p>Students can master the basic knowledge and skills of simple sales management if they constantly exposed to the matter in teaching and learning activities.</p> <p>Students who have an attitude and way of thinking towards entrepreneurship, students can practice basic business management knowledge and skills in a simple transaction in relevant daily life situations.</p>	<p>Basic knowledge and skills of simple sales management involving the following processes:</p> <ol style="list-style-type: none"> <li>1. Plan a project carefully</li> <li>2. Implement the project according to the steps provided</li> <li>3. Monitor the project</li> <li>4. Evaluate project implementation</li> <li>5. The application of basic knowledge and management skills elements of buying and selling easily involves:</li> </ol> <ol style="list-style-type: none"> <li>(i) Managing money either in daily expenses or savings</li> <li>(ii) Manage easy daily buying and selling transactions</li> <li>(iii) Good consumerism practices</li> </ol>
3. Produce knowledge-based products as well as technological and vocational skills	<p>Students who have learned a technique in their learning can create and produce competitive products based on technological and vocational knowledge according to their creativity.</p>	<p>Technological and vocational knowledge and skills based can be used in:</p> <ol style="list-style-type: none"> <li>1. Producing knowledge-based as well as technological and vocational products</li> <li>2. Produce the same product using different technologies</li> <li>3. Produce products using a variety of sources or recycled sources</li> </ol>
4. Practice good moral and ethical values in the context of entrepreneurship	<p>Practice good moral and ethical values in the context of entrepreneurship.</p> <p>The practice of good moral and ethical values in the context of entrepreneurship encourages students to behave responsibly to society.</p>	<p>There are five principles of good moral and ethical value practice in the context of entrepreneurship:</p> <ol style="list-style-type: none"> <li>1. The principle of social responsibility - business must not cause harm to humans and the environment</li> <li>2. Principle of fairness: practicing fair business</li> <li>3. Human rights principles: the practice of respecting human rights</li> <li>4. Principle of autonomy: businesses cannot deny the right to choose individuals</li> <li>5. Principle of Transparency: Business that is not misleading</li> </ol>

Source: *Handbook of Entrepreneurship Education, Ministry of Education Malaysia (2011)*

At the same time, Curriculum Development Division of Malaysia implemented entrepreneurship education for students with learning disabilities as an element across the curriculum. So that, some key points highlighted in the curriculum to achieve the aims of entrepreneurship education among students with learning disabilities in order to produce young entrepreneurs. There are similarities between aims of entrepreneurship education for primary school and the aims of entrepreneurship education for the students with learning disabilities.

*“The application of entrepreneurial elements aims to shape the characteristics and practices of entrepreneurship to become a culture among students. Entrepreneurial characteristics can be applied through teaching and learning activities that can cultivate attitudes such as diligence, honesty, trust and responsibility as well as develop creative and innovative minds to drive ideas to market”.*

Source: Curriculum Development Division, Ministry of Education Malaysia (2011)

In short, we can conclude that Curriculum Development Division, Ministry of Education Malaysia (2011) planned and designed the curriculum for students with learning disabilities to cultivate their entrepreneurship skills through education system. The curriculum revealed the aim of entrepreneurship skills for the students with special needs to develop their creative ideas in the job market.

## 2.5 Methodology

In this study, library review method used to collect data and results.

## 2.6 Result and Discussion

### 2.6.1 Importance of Entrepreneurship Skills for Students with Learning Disabilities

The entrepreneurship education has become an important agenda in planning educational policies in many countries in this 21<sup>st</sup> century. Policy-makers had developed initiatives to enable and encourage students with learning disabilities to involve in entrepreneurial activities (Wittenburg et al., 2013). Numerous studies show entrepreneurship education is significant in cultivating the spirit of entrepreneurship among students (Hardy Loh et al., 2015). The most common reason for promoting entrepreneurship skills among students with learning disabilities is because entrepreneurship is seen as an engine for economic growth and job creation. Thus, the students with learning disabilities should acquire the entrepreneurship skills to be successful in their daily life.

However, competition and employment opportunities for students with learning disabilities are a matter of debate in an effort to provide careers for this group of people. According to Noraini et al., (2015), issues or problems in obtaining employment for students with learning disabilities should be given serious attention due to the unsecured employment opportunities for them. This is because students with learning disabilities face issues in getting a job, skills, level of ability and physical ability as well as society's perception of this students with special needs (Mat Daros et al., 2012).

Meanwhile, Noraini et al., (2015) stated that the lack of skills in line with the wishes of employers is also a barrier factor for students with special needs to get a job. This opinion is further evidenced by the opinion of Beisland et al., (2016) who stated that the abilities and capabilities of students with learning disabilities are still taken into account by employers. This causes the students with learning disabilities to be unemployed because no jobs are offered. The matter of concern is a total of 1,934 students with special needs who completed their secondary school education in 2012 but did not obtain employment opportunities (Malaysian Education Blueprint (MEB), (2013-2025).

Therefore, the question arises what are the weaknesses in managing career and vocational education for students with special needs in secondary schools due to students do not get employment opportunities. Based on the study of Noraini et al., (2015) there is no evidence to suggest that there is a continuum of education with employment opportunities after graduation for students with learning disabilities. It is proven that there are weaknesses in terms of curriculum with learning disabilities, especially in secondary schools (Mat Daros et al., 2012). Thus, the secondary school curriculum does not focus on vocational skills (Nasri et al., 2010). Accordingly, it can be concluded that students with special needs learning disabilities do not have employability skills (Samian et al., 2013). In addition, existing employability skills through vocational education do not necessarily meet the needs of employers (Yusuf et al., 2013). So that, entrepreneurship skills are crucial for the student with learning disabilities to overcome unemployment issues.

Employer's perception on student with learning disabilities as an unproductive person regardless of their education. According to Beisland et al., (2016) employers resist hiring person with disabilities because they underestimated their working capability. The employers expecting those who are well trained and skilled in entrepreneurial field to face the industrial challenges. Thus, skill-based training and coaching is needed to students with learning disabilities to full fill the employer's needs. Therefore, entrepreneurship skills are compulsory because it's a form of skill-oriented education where the students able to learn the entrepreneurship skills through training and vocational activities.

However, the government has taken the initiative to implement a career transition program for students with special needs in secondary schools through a guideline for the special needs students career transition program (Ministry of Education Malaysia Professional Circular No. 4, 2019). This career transition program is a form of effort to prepare students with special needs to get employment opportunities as well as master vocational skills to qualify them for work. Researchers argue that vocational skills, employability, entrepreneurship skills should be applied through a systematic module from the grassroots again, starting at the primary school level.

Furthermore, the economic sector now expects a knowledgeable and skilled workforce in the field of employment. Entrepreneurship skills can contribute to a field of employment that can support students with special educational needs by living independently without relying on the job market. This can reduce the number of students with needs from being unemployed because there are no job opportunities after school. A study conducted by Anizam et al., (2020) has identified special education teachers integrate four elements that are sub-elements in entrepreneurial skills, namely product production skills, product marketing skills, business skills, and cost calculation skills through teaching and learning activities for the student with learning disabilities.

Although, students with learning disabilities labelled as impairment of ability to perform an activity like a normal person. Hence, they need one skill that can make them self-reliant without depending on others to survive. Thus, entrepreneurship skill is an essential for them to be independent. On the other hand, they also can contribute to the economic growth. Kuratko (2010) supported that vocational and technical oriented education for students with learning disabilities will strengthen their chances of independent living at the same time it will stimulate the entrepreneurial skills embedded by them.

Entrepreneurship skills which are taught during teaching and learning activities will enhance the students with learning disabilities to become self-employment. The self-employment activities conducted by them are collectively known as “necessity entrepreneurship” according to entrepreneurship literature (Williams & Round, 2009). Most of the people with learning disabilities choose for self-employment and start their own business with the skills they have (Rosa Maria et al., 2019). Studies strongly supported the benefits of self-employment among people with learning disabilities in different context. Europe and US data indicated self-employment rates higher than among people with disabilities. The Australian Bureau Statistics (2013) shows that people with learning disabilities are more likely to run their own business than the normal person with the ratio of 11.6 to 8.2 %. In addition, Hwang & Roulstone (2015) found 388,241 out of 915,217 persons with disabilities in South Korea identified as self-employed. Thus, entrepreneurship skills driven the students with learning disabilities to self-employed and contribute for independent living.

Nonetheless, studies indicated that students who are immersed in entrepreneurial activities shows higher level of innovativeness in their work and able to produce ideas in new way. Entrepreneurship skill is not just a skill acquisition whereas it is a skill to creating employment for their self and also for others (Omede et al., 2016). In short, it's a process of development based on creativity and innovative. Therefore, educational institutions such as schools and universities play an effective role on produce students with a greater entrepreneurship skill to acquire entrepreneurial attitudes (Mutluturk & Mardikyan, 2018; Dohse & Walter, 2012; Kusmintarti et al., 2018; Vanevenhoven & Liquori, 2013; Matlay, 2016; Henley et al., 2017).

According to National Policy of Nigeria on Education (2004) highlighted the importance of entrepreneurship skills for students with learning disabilities as follows:

1. Prepare the students with learning disabilities for useful living in the society
2. Provide them with saleable entrepreneurship skills relevant in the 21<sup>st</sup> century and beyond
3. Enable them to compete with their peers in developed world and technology development
4. Make them partners in small scale industries
5. Make them contribute to Nigerian information communication technological needs
6. Provide them with the knowledge, skills and motivation to encourage entrepreneurial success

Besides that, the researchers stated some importance and the prospect of entrepreneurship skills among students with learning disabilities. In view of, Inoegbu & Ezeanochie (2010) students who are acquire the entrepreneurship skills will be benefits on these aspects:

1. Opportunity for work-based experience
2. Opportunity to practice leadership skills
3. Opportunity to develop inter personal skills
4. Chance to planning, financial literacy, and money management skills
5. Improved academic performance
6. Develop problem solving and decision-making abilities
7. Job readiness and social psychological development

These opportunities and trainings will be able to produce productive students with entrepreneurship skills in line with the aim of National Education Philosophy of Malaysia.

Even so, Lackeus (2015) stated entrepreneurship skills is highly potential to produce interest, joy, engagement and creativity among students with learning disabilities. Besides, researchers found that studies show entrepreneurship skills increase the motivation, school engagement, lessen the student's boredom and dropout which is commonly faced by students with learning disabilities (Moberg, 2014a). Hence, Lackeus (2015) explained the relevancy and importance of entrepreneurship skills to an individual level, organizational level and societal level.

Table 3 shows an overview of relevancy and importance of entrepreneurship skills for student with learning disabilities.

	<b>Individual level</b>	<b>Organizational level</b>	<b>Societal level</b>
<b>Job creation</b>	We need the individuals who are capable to create job opportunities for self-employment and for others	Growing organizations create more job opportunities	Entrepreneurship and innovation skills are primary path for job creation
<b>Economic success</b>	Entrepreneurship skills will be able to lead economic success	Organizational renewal is fundamental to every firm's long- term success	Renewal processes are fundamental to the vitality of economics
<b>Globalization, Innovation</b>	People need entrepreneurship skills and capabilities to thrive in an ever-changing world	Entrepreneurial firms play an important role in changing market structures	Entrepreneurial market requires people with higher level general and entrepreneurship skills
<b>Joy, Engagement, Creativity</b>	Creation / value creation / creativity is a main source of joy and pride of people	Employee creativity and joy is essential for the performance of new and existing organizations	Economic wealth of nations correlates with happiness of its citizens
<b>Societal Challenges</b>	People can make a difference to society, and marginalized people can achieve economic success	Corporations can collaborate with small social entrepreneurship initiatives to create social value	Social entrepreneurship addresses problem in society that the market economy has failed to address

Source: Adapted from (Lackeus, 2015)

Therefore, entrepreneurship skills are crucial for the students with learning disabilities to develop their skills in job creation, economic success, globalization, innovation, joy, engagement, creativity and societal challenges. So that, educational activities and programmes for student with learning disabilities should be tailored towards providing them with the needed entrepreneurship skills from primary school. This will ensure the students with learning disabilities to grab employment opportunities and contribute to the nation's economy.

### 3.0 Conclusion

In brief, sustaining entrepreneurship skills among students with learning disabilities is a productive venture in this 21<sup>st</sup> century. As a developing country, Malaysia needs to cultivate entrepreneurship skills among students with learning disabilities to be independent living by start their own business with necessary competencies. Thus, this will enhance the country to produce more job providers than job seekers. As we know before, aim of this study to contributes fundamental knowledge on entrepreneurship skills and the importance for students with learning disabilities. Future researchers, can be able to prepare themselves to explore more on the effectiveness of entrepreneurship skills among students with learning disabilities.

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This paper is an output about the importance of entrepreneurship skills among students with learning disabilities from various researchers and context.

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