Research Proposal

Impact Of Artificial Intelligence On Special Need Students

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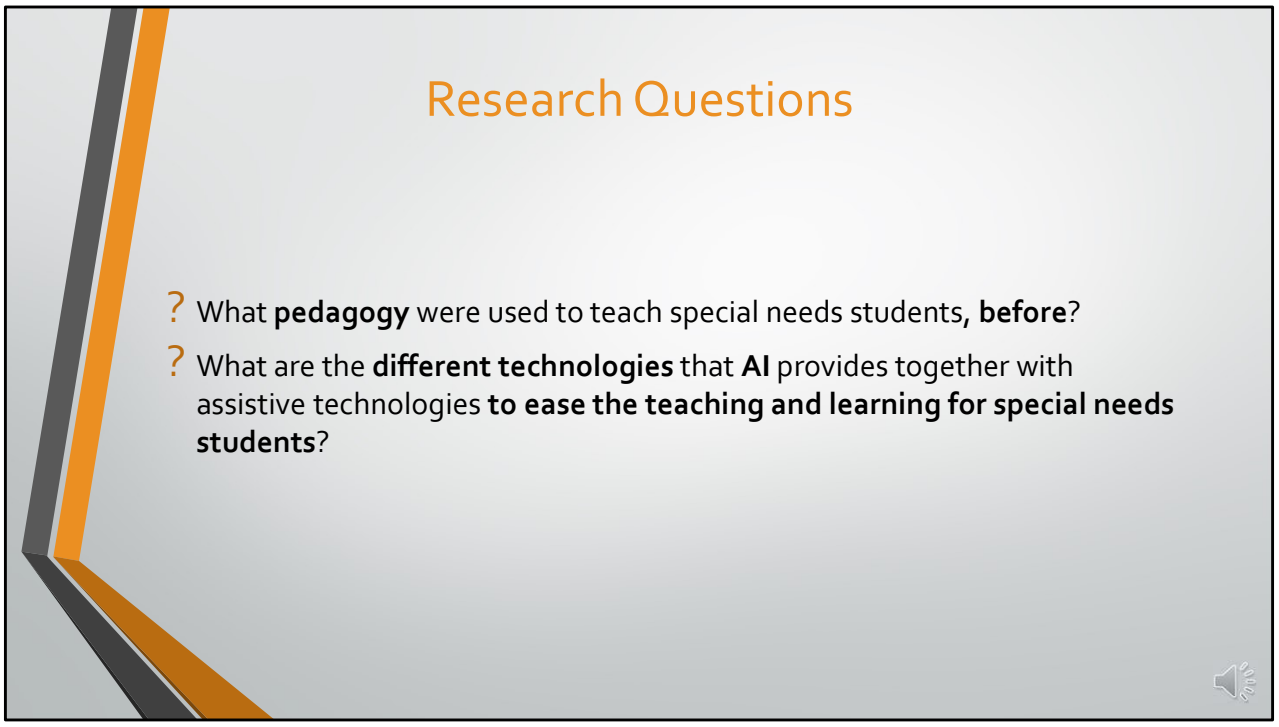
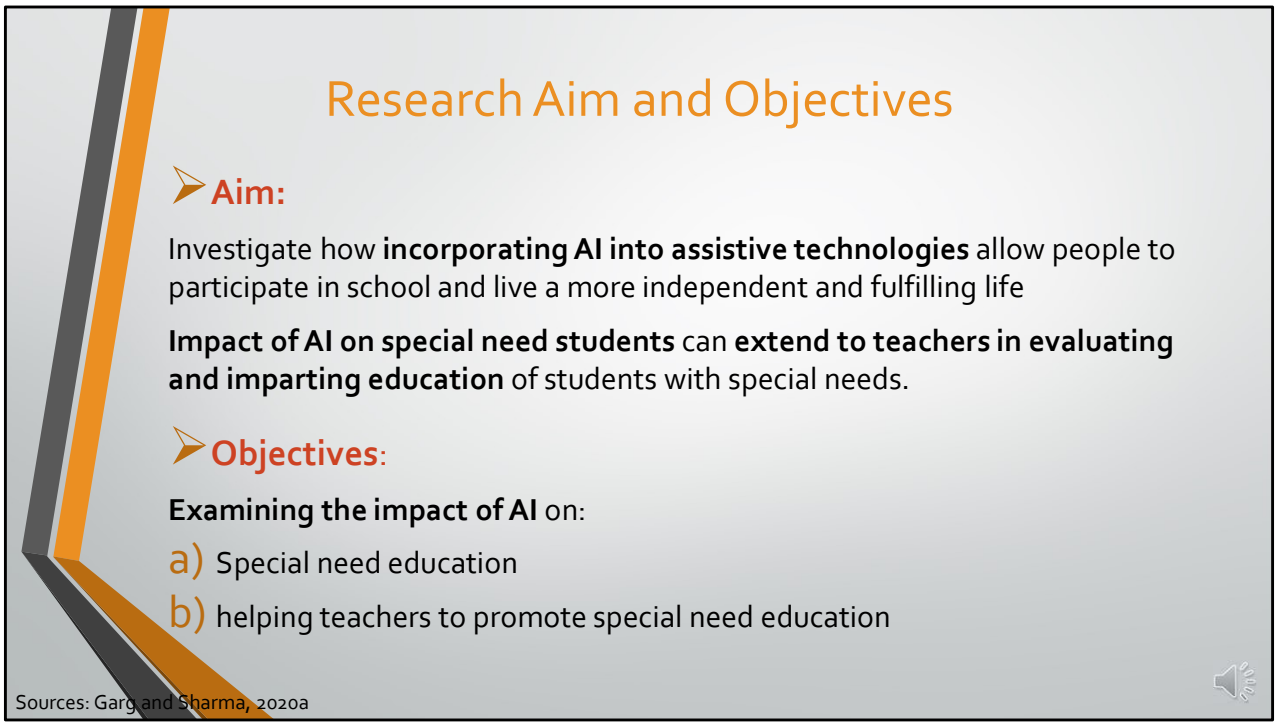
People with disabilities are frequently locked in a horrific cycle of exclusion from society, participation in occupations, and mainstream development initiatives in many developing nations in Asia and the Pacific. According to the World Health Organization and Laabidi World report on disability, over one billion people worldwide suffer from one or more impairments. Such people are excluded of healthcare, education, and employment possibilities. Without suitable assistive equipment, people frequently lack the means to engage in education for living an independent and healthier life. According to WHO estimates, over one billion

individuals might benefit from one or more assistive technologies or goods. Microsoft's Annual Report (2017) has stressed the effect of technology on all aspects of life, work, and society at large. It has highlighted that the world requires a trustworthy technology that can help both people and society. Technology platforms and tools may foster creativity in persons with and without impairments.



- What pedagogy were used to teach special needs students, before?
- What are the different technologies that AI provides together with assistive technologies to ease the teaching and learning for special needs students?

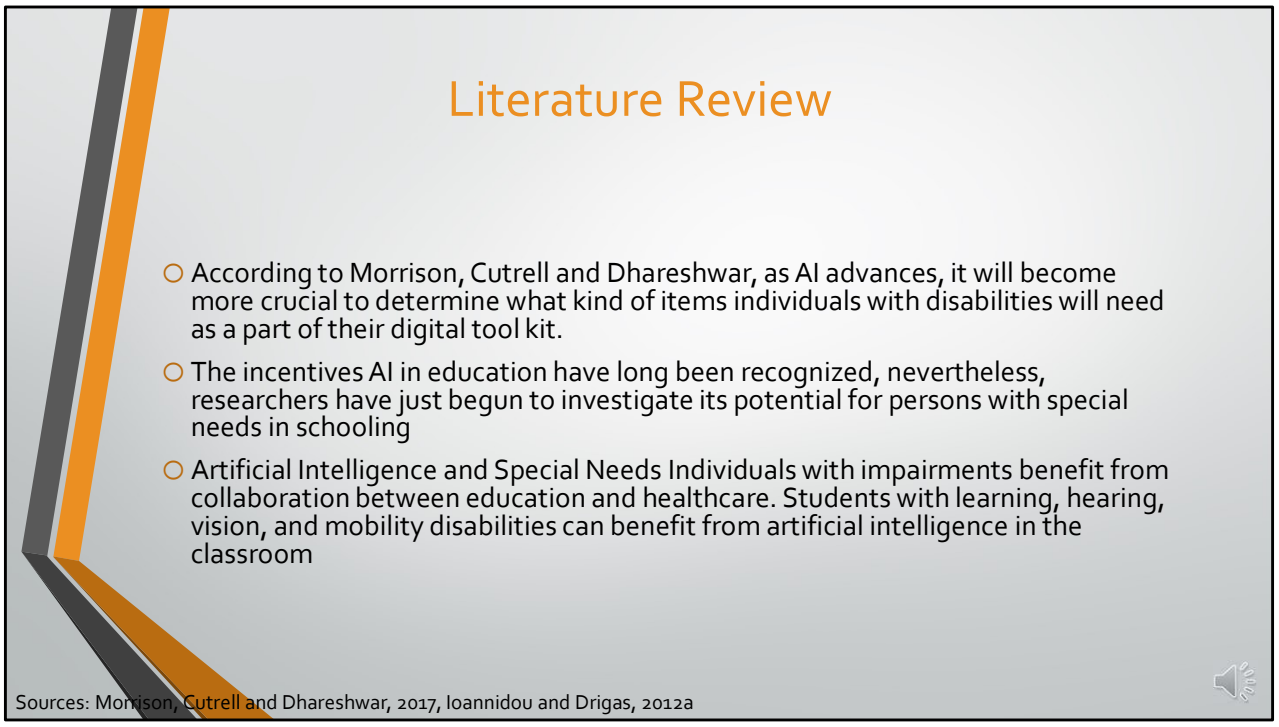


The aim of this research was to investigate how incorporating AI into assistive devices allows people to participate in school and live a more independent and fulfilling life. The impact of AI on special needs kids, as well as the help these technologies may provide instructors in evaluating and delivering instruction tailored to the needs of these pupils, were explored. The objective of this research was to examine the impact of AI on:

a) Special need education

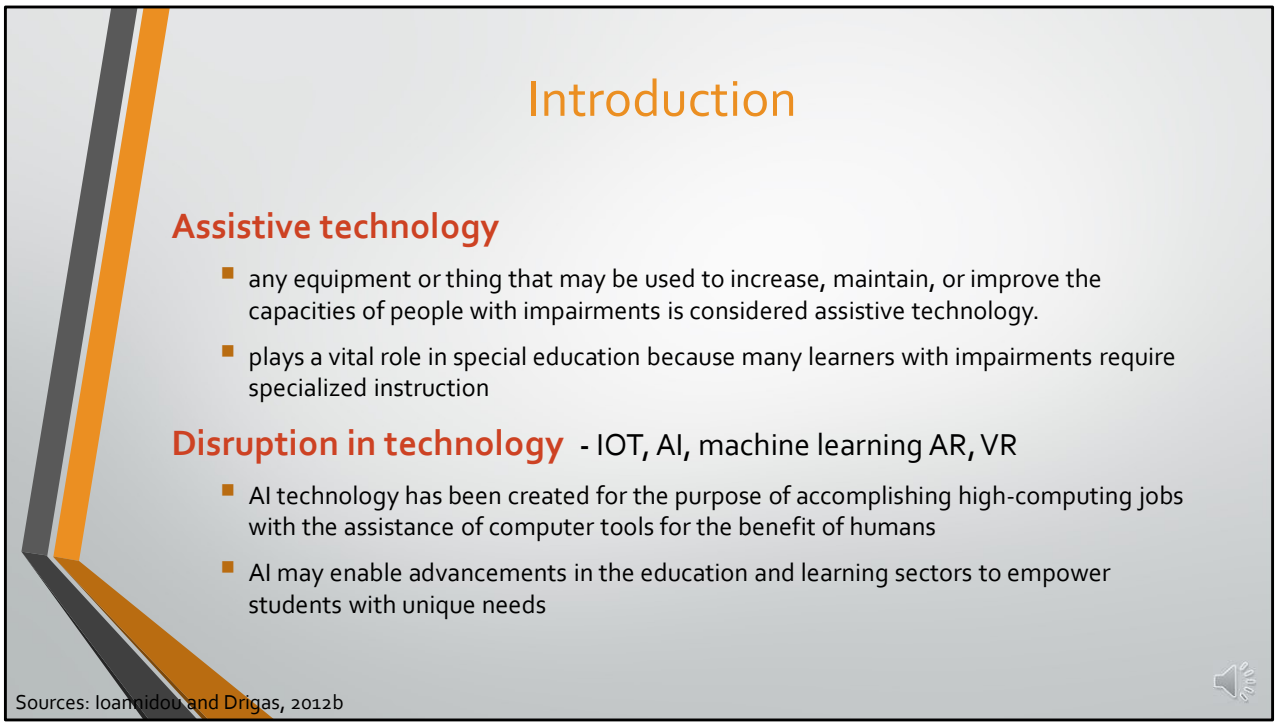
b) AI helping teachers to promote special need

education



Artificial Intelligence has been the subject of several studies. According to Morrison, Cutrell, and Dhareshwar, as AI advances, it will become more crucial to determine what kinds of items individuals with disabilities will need as part of their digital toolkit. The incentives of AI in education have long been recognized, nevertheless, researchers have just begun to investigate its potential for persons with special needs in schooling. Artificial Intelligence and Special Needs Individuals with impairments benefit from collaboration between education and healthcare. Students with learning, hearing, vision, and mobility disabilities can benefit from artificial

intelligence in the classroom.



Any equipment or thing that may be used to increase, maintain, or improve the capacities of people with impairments is considered assistive technology. Because many learners with impairments require specialized instruction, assistive technology plays a vital role in special education. Today, as a result of technological disruption, many new technologies such as work automation, IOT, AI, machine learning, AR, VR, and so on are transforming the workplace, particularly for persons with disabilities, and requiring greater agility in the workforce to embrace faster and create inclusive and accessible organizations. AI technology has been created

for the purpose of accomplishing high-computing jobs with the assistance of computer tools for the benefit of humans. Although machines can never replace humans, they can help people with better work arrangements. Recent advancements in AI may enable advancements in the education and learning sectors to empower students with unique needs.

Research Method (1)

Data collection

- ✓ Qualitative research using **focus interviews**
- ✓ From **eight pupils with impairments** and **three instructors** who taught students with special needs
- ✓ At specialised school - '**Laventure Technical School for Disabled**' (Mauritius).
- ✓ From publications available on ResearchGate

Variables	*Description*	*Frequency*
Student		
Age	Between 10 to 12 years	4
	Between 14 to 17 years	4
Gender	Male	5
	Female	3
Education	Grade 4	1
	Grade 5	-
	Grade 6	2
	Grade 7	-
	Grade 8	2
	Grade 9	1
	Grade 10	-
	Grade 11	2
Impairments	Learning impairment	3
	Visual impairment	3
	Hearing impairment	-
	Physical impairment	2
Teacher		
Age	Below 30 years	1
	Between 31 – 40 years	1
	Above 40 years	11
Gender	Male	1
	Female	2

Table 1 - Sample of focused interview

Sources: Garg and Sharma, 2020b

The data was gathered through qualitative research, which included focus interviews. The responses were from instructors and pupils with impairments at a specialized school in Mauritius called 'Laventure Technical School for Disabled.' Data was also gathered from publications available on ResearchGate.

The sample was chosen to better understand the assistance offered by the institution and the

techniques used by instructors to establish an inclusive learning environment.

The following table illustrates the sample of focused interviews, which included eight pupils with disabilities and three instructors who taught students with special needs.

Research Method (2)

Focus Interview with:

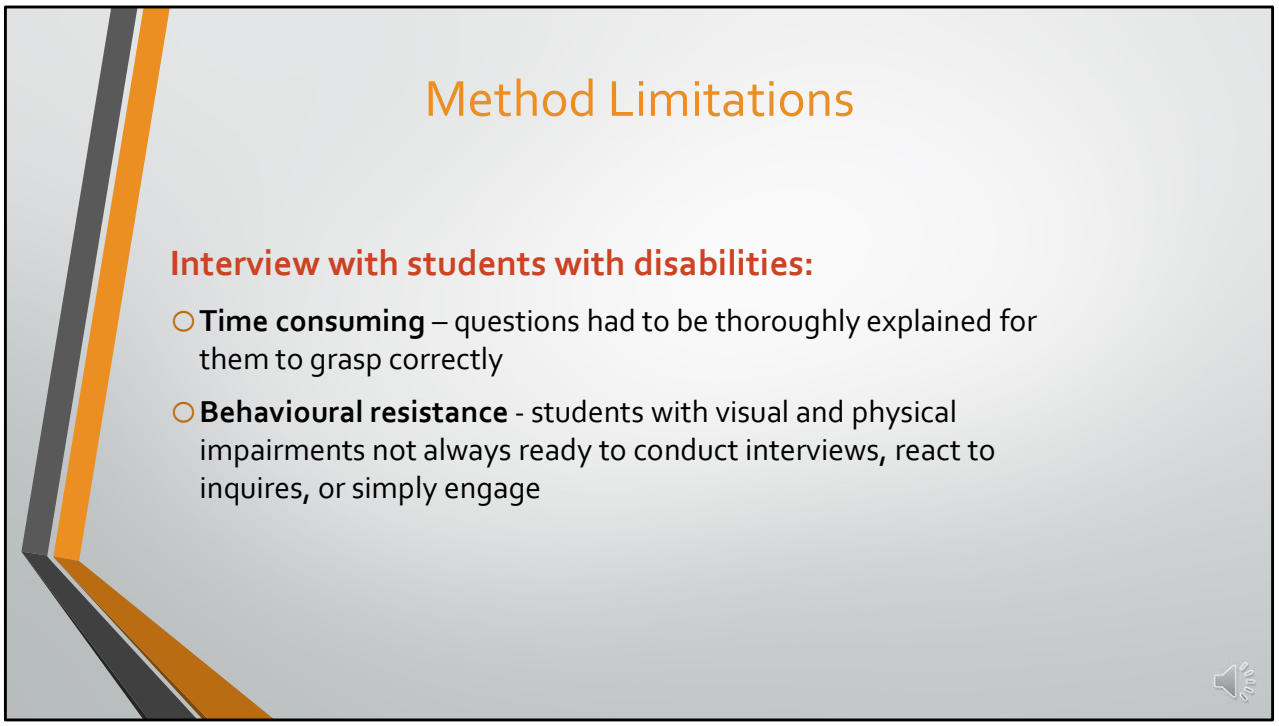
1. **Students with disabilities**
2. **Instructors** educating students with special needs

Questions	
Respondents: Students with disabilities	**Respondents: Teachers**
How do you feel at school?	How do you provide assistance to the students for learning to take place?
Does the teacher look after you properly?	What class management do you use with mixed abilities students, with or without disabilities?
Are you provided with assistive technologies when required in class?	Does the school promote inclusive teaching and learning environment?
Is the class interactive and are you able to participate without advanced assistive technologies?	Do you make use of Artificial Intelligence technologies for teaching?

Table 2 - Questions asked during focused interview to the respondents

Sources: Garg and Sharma, 2020c

The interview was generally divided into two segments: In the first phase, an interview was done with students with disabilities to better understand the issues that children with special needs encounter and whether or not they are handled by the institution or instructor. In the second stage, interviews were held with instructors who educate students with special needs in order to better understand their teaching style and institutional support for inclusive pedagogy. Table 2 shows the questions that were asked of respondents during the focused interview.



Several challenges were experienced when doing the interview with the students, including:

• Time consuming – since the questions had to be thoroughly explained for them to grasp correctly

• Behavioural resistance - students with visual and physical limitations were not always ready to conduct interviews, react to inquiries, or simply engage.

The research was conducted in accordance with the following ethical considerations:

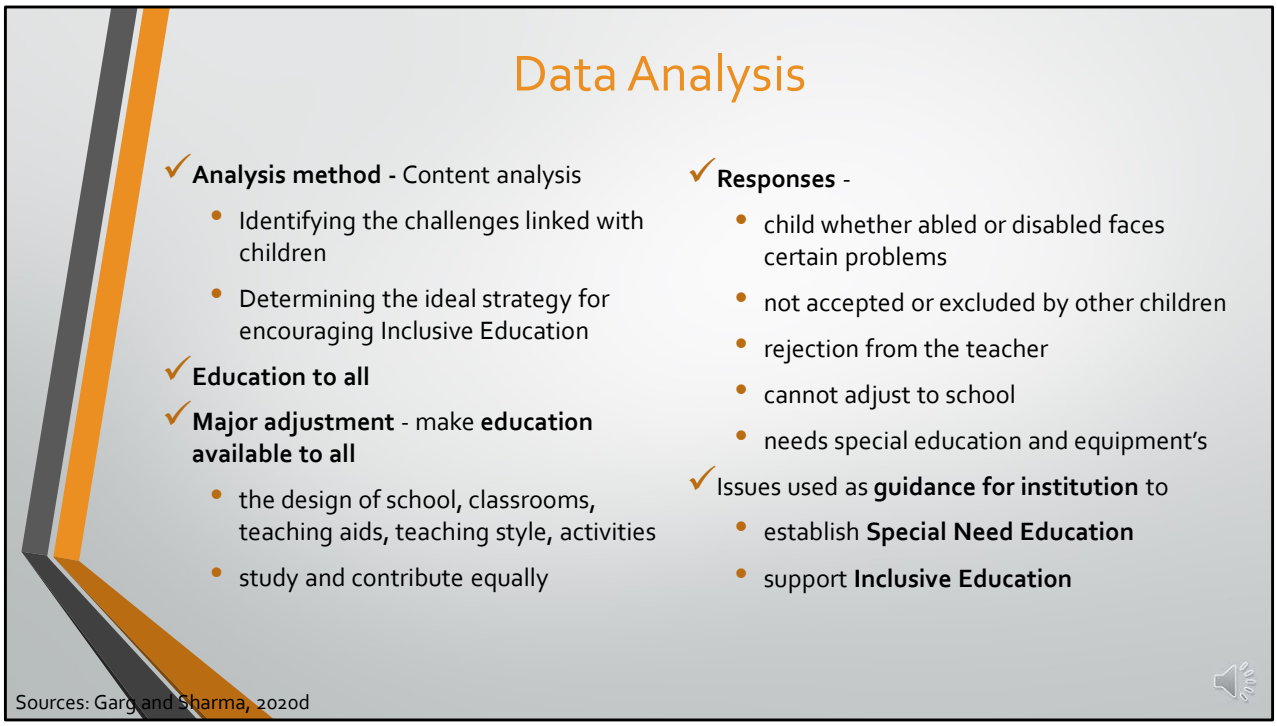
- **Voluntary participation**: Participants were informed that they were free to choose whether or not to engage in the study and that they might withdraw at any moment without penalty.
- **Informed consent**: The following essential information was shared with participants:
    - What the research is about
    - The risks and benefits of taking part
    - The duration of the research
    - Institution's name and contact number

Confidentiality: Prior to the start of the study, everyone

was asked to pledge to keep what was discussed secret and to respect each other's privacy.

The following risk assessments were evaluated in the research:

- **Social risks**: No revelations regarding participants' identities or replies that might have an impact on their community, family, or employment.
- **Health and safety risks**: Supplemental help was requested to avoid any physical or psychological harm to participants when visiting their institutional setting.



- A content analysis was done on the responses acquired from participants, which aided in identifying the challenges linked with children and determining the ideal strategy for encouraging Inclusive Education.
- Education for All is a basic right of every human, whether a kid or an adult; no individual may be denied their right to education because of their skills or limitations.

The major adjustment necessary in the educational

system is to make education available to everybody.

- The inclusive education is the design of school, classrooms, teaching aids, teaching style and activities to accommodate all students so that they may all study and contribute equally.
- According to the targeted interview with teachers, in order to promote inclusive education, schools must first identify the challenges that children face.
- The responses indicated that most of the time, every child, abled or disabled, faces certain problems in school that may be related to their learning abilities, being accepted or excluded by other children, being rejected by the teacher, being unable to adjust to school, requiring special education and equipment, and children facing disabilities.
- These issues must be addressed through curriculum in order to promote Special Needs Education; hence, such curriculums must not just be connected with children with disabilities, but must also accommodate all children, assisting them in dealing with their issues.
- These issues that affect every student can help

institutions establish Special Needs Education and implement pedagogical modifications that support Inclusive Education. The curriculum must be planned with all of the student's needs and special equipment in mind to make the learning experience more easier and fun for all children, not just "Students with Disabilities," so that no child feels rejected by the instructor or other children.

Research Result (1)

- **Pedagogy** defines what needs to be understood and what abilities must be taught.

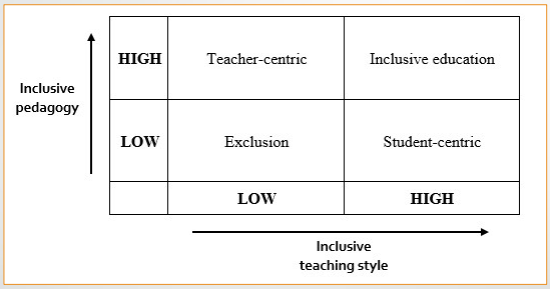


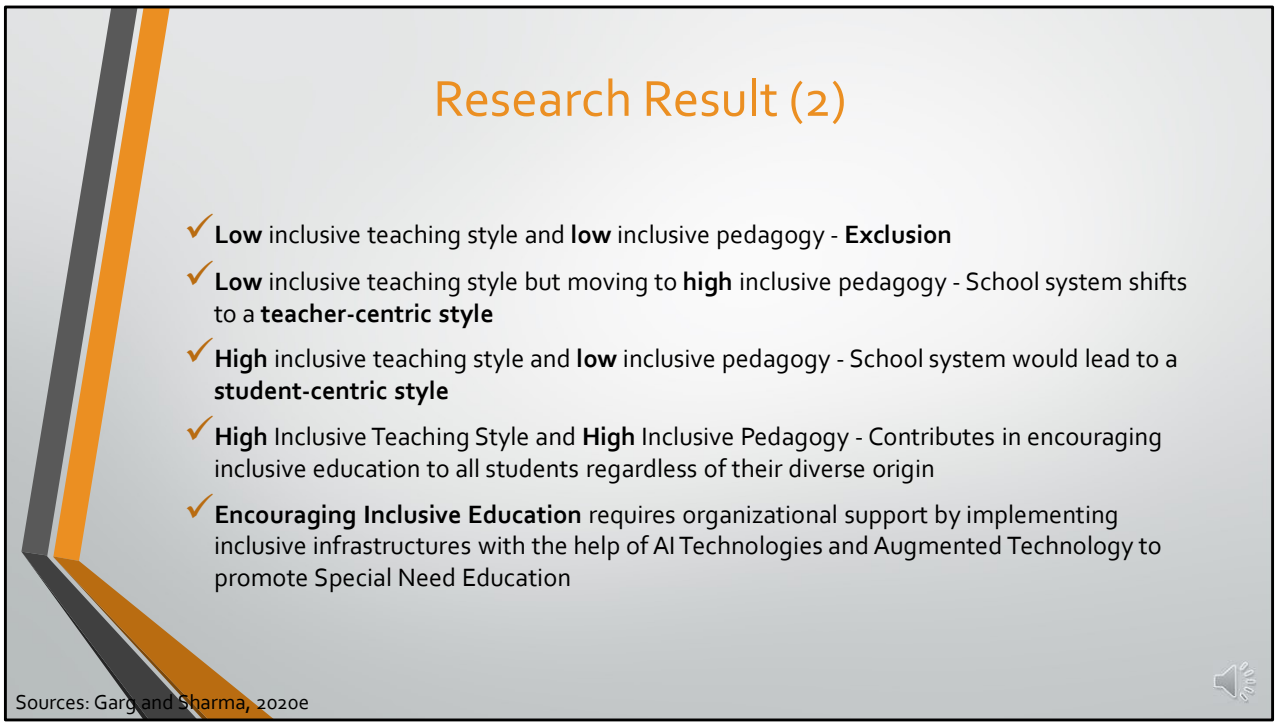
Figure 1: Pedagogical requirements and teaching styles

- The combination of low and high **Inclusive Teaching Style** and **Inclusive Pedagogy** in **four quadrants**
- Constructed **based on the responses** from **focused interview** with **instructors** and **students with disabilities**

Sources: Grimes, 2014

- Pedagogy is defined as "the act of teaching and its concomitant disclosure". It defines what needs to be understood and what abilities must be taught. Figure 1 demonstrates the combination of low and high Inclusive Teaching Style and Inclusive Pedagogy in the four quadrants, each representing a distinct style of Inclusive-Exclusive Education.
- Figure 1 also demonstrates the pedagogical prerequisites and teaching methods for inclusive education, which were constructed based on

responses from focused interviews with instructors and students.



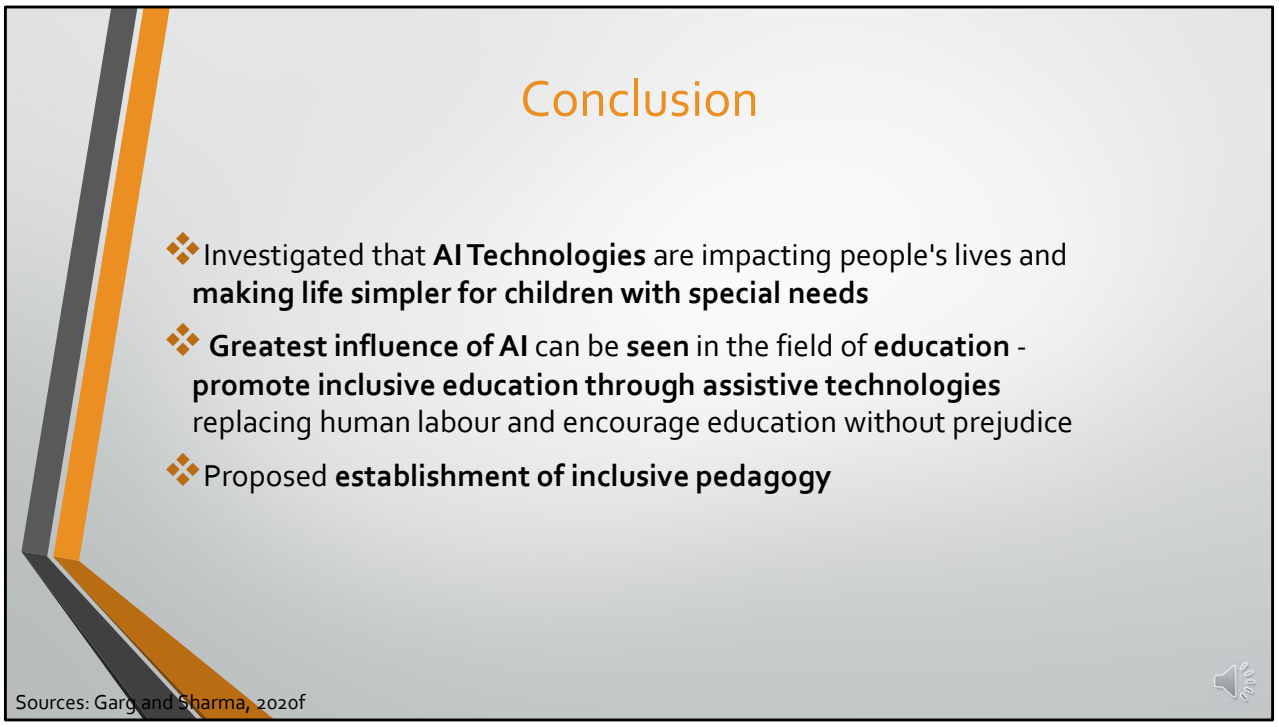
- Previously, the school system was built mostly on a low inclusive teaching style and pedagogy, which resulted in exclusion. This implies that neither the teaching style nor the pedagogy is concerned with equity or special needs education. The instructor may merely arrive to give the class without considering the children's learning requirements. Such teachers may categorize pupils based on their diverse origins and feel that children experiencing difficulties may require specially trained teachers and personnel to

educate them.

- The school system shifts to a teacher-centric manner by retaining the low inclusive teaching style while shifting to high inclusive pedagogy. It is primarily determined by the teacher to whom he or she will pay more attention. When a teacher focuses on a single kid, it may result in isolation from other classes, which does not assist schools foster equal education.
- Despite the fact that teachers are concerned about all of their pupils and may use a variety of pedagogical styles to fit each person, the school system will lead to a student-centric style. This may lead to youngsters being classified as able or disabled.
- As a result, the High Inclusive Teaching Style and High Inclusive Pedagogy contribute in encouraging inclusive education to all students regardless of their diverse origins. This is mostly dependent on adopting changes in teachers' classroom conduct, which refers to how they stand, interact, and provide information. The teacher must create pedagogies that involve all children without discrimination or categorisation. The instructor must create pedagogies that allow students to feel comfortable and free to communicate ideas

and have discussions with one another. The pedagogies are aimed to encourage creativity.

- The findings of this research show that in order to promote Inclusive Education, organizational support is required through developing inclusive infrastructures with the use of AI Technologies and Augmented Technology to promote Special Needs Education.



- The research proposal investigated how AI technologies are impacting people's lives and making life simpler for children with special needs. Its greatest influence may be seen in the field of education, where institutions, teachers, and parents work to promote inclusive education through the use of assistive technologies that can replace human labour and encourage education without prejudice.

The research also recommended developing inclusive teaching, which involves all children without distinction. It also proposed the establishment of pedagogies that

encourage creativity and will aid in the creation of a secure atmosphere for children in which they are free to communicate ideas, engage in dialogues, and appreciate the diversity in each individual

Work Plan

Activities	Week
Research topic selection	
Write initial research proposal	
Begin secondary research, confirm interview, write interview questions	
Conduct interview	
Preliminary analysis of collected data	
Final analysis of collected data, draw conclusion from result	
Refine research proposal	
Submit research proposal	

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