Chapter I

INTRODUCTION

Academic achievement of students depends on the teachers' methods, approaches and strategies; and school climate such as: psychological and physiological aspects that are vital in promoting academic achievement of students and in teaching and learning process to take place. Favorable physical learning environment means a greater positive impact on students' achievement. Included on the research article of Odeh, Oguche, Angelinsa and Ivagher (2015), Alliade (2008) stated that learning environment should have a good infrastructural development, trained teachers, good leadership and adequate instructional materials and others impacts positively on the students' academic achievements.

Indeed, the physical learning environment contributes to the acquisition and accommodation of students' learning. Additionally, physical learning environment also has an impact on the students' academic achievement. In the same vein, the Iowa Association of School Boards (IASB, 2012) noted that a school building is an important tool to support learning and school facilities should be designed to provide the best possible education for all students.

Due to the rapidly changing world, the assessment to be made in the relationship of academic achievement on physical learning environment could identify the learning environment that would give good impact on students' achievement particularly on the application of ICT Materials, validity and adequacy of furniture and fixtures, and lighting and ventilation; management of learning area in the subject of Entrepreneurship.

In addition, effective physical learning environment requires the introduction of 21st century learning environment with the utilization of technology in the teaching and learning process. In congruence with the aforementioned, Schwartz (2013) stated that the design features of the new school facility with updated technology and equipment has helped teachers to be more effective. After all, the students' achievement reflects on the teachers' efficacy and an effective learning environment. Taking the probabilities that there are influences on the relationship of academic achievement and 21st century learning environment, the study focuses on the students' academic achievement on physical learning environment.

Background of the study

In the past decades, researchers have concluded that physical learning environment has its influence in students' academic achievement. They have also suggested that academic achievement of students will increase if they are given a well- furnished classroom (Kekare, 2015; Urtil, 2016; Suleman and Hussian, 2014).

On the personal note of the researcher, Siniloan Integrated National High School was considered as one of the best performing school with an excellent and competitive students in various disciplines around the province of Laguna. The school provided infrastructures and equipment that plays a vital role in promoting good quality of education for the learners such as demonstration farm that provides the learner to enable their skills in the field of crop and animal production.

Various facilities such as food laboratory that provides extensive learning experiences in the field of food process and preparation; Computer laboratory which enable

the learners to experience the hands- on learning experiences with the integration of technology in the learning process; Science laboratory which gives the learners the opportunity to explore and discover learning with different apparatuses used in experimental purpose; Library that offers references to support students' learning. Also classrooms that traditionally provides the students for the learning process to occur.

However, the maintenance and management of these physical learning environment had been disregarded due to the lack of budget and awareness as well. Thus, the researcher decided to conduct a study with concern to the physical learning environment on academic achievement of students in entrepreneurship. Furthermore, the methods about the physical learning environment on academic achievement in Entrepreneurship are not yet examined and studied thoroughly. Therefore, the investigation on method of the researcher would find out if there is a significant relationship between the physical learning environment and academic achievement of the respondents; also the study could ameliorate promoting a good quality learning environment to increase the academic achievement of the learners as it will be the center of the study.

Objectives

This research aimed to find out the relationship of physical learning environment to the academic achievement in Entrepreneurship among Grade 10 students at Siniloan Integrated National High School, school year 2017-2018.

Specifically, the study sought to achieve the following objectives.

1. Determine the physical learning environment of the respondents in terms of:

1.1. ICT Material

1.2. Furniture and Fixture

1.3. Lighting and Ventilation

1.4. Learning Area

2. Assess the students' academic achievement in entrepreneurship.

3. Find out if there is a significant relationship between the physical learning environment and respondents' academic achievement in Entrepreneurship.

4. Develop a primer based on the implications from the findings as a result of the study.

Significance of the study

The researcher viewed the following benefits that can be derived from this study. As this study attempted to know the relationship of academic achievement of students and physical learning environment, the study would be beneficial to the following:

Students. An effective physical learning environment reflects on students' academic achievements. As they are the focus of the study, the implications towards effective learning environment may also be helpful to them to have a meaningful learning and to acquire skills and learning for them to reach high academic achievement. Ultimately, being responsive to the needs of students will increase the rate of their academic achievement.

Teacher. Good teaching practices reflects to high academic achievement. With this things, the implications on effective learning environment would enhance the teaching

practice by providing teachers healthy learning environment for the students' learning to be meaningful and lifelong. Moreover the teachers could adopt awareness on the enhancement of students' academic achievement on physical learning environment.

Administrator. Since it was viewed in the study that physical learning environment has a vital role in promoting students' academic achievement, the implications of the study could ameliorate their supervision in managing the suitability and maintenance of the learning environment not just for the betterment of the teaching and learning process but also the academic achievement of the learners.

Future Researchers. The implications as the findings of the study could be their reference for future researches in the same field. The study could also be their guide in producing valuable researches.

Scope and Limitations

The study focuses on the academic achievement of students under physical learning environment. Which was limited to its influences and relationships, physical learning environment such as: ICT material, furniture and fixtures, lighting and ventilation, and learning area that was obtained from the modified checklist questionnaire that was adopted from the developed instrument to assess the physical aspect of classroom environment (Ahmad, Yahaya, Abdullah, Noh and Adnan, 2015). The selected Grade 10 student was the respondents and assessed the effects of physical learning environment on their academic achievement. The study was limited only in Siniloan Integrated National High School.

The time frame of the study was from September 2017 to February 2018.

Definition of Terms

For the clarity of study to guide and enlighten the readers, the following terminologies are hereby defined conceptually and operationally.

21st Century Classroom – As defined by the characteristics of a 21 Century Classroom (2008), 21st century classroom is composed of productive classroom environments in which student can develop the skills that that the learner will need in the real-world. Operationally, this refers to the conducive learning with the use of different 21st century classroom features.

Academic Achievement- According to Steinmayr, Weidinger, Wirthwein and Meibner (2017), Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments e.g. school. Operationally, it is the term used for students learning attained after their performance.

Furniture and Fixtures – Suleman & Hussian (2014) conclude that furniture plays a vital role in classroom functioning, it is arranged with the intention that students may feel comfortable and may be adjusted to the primary sources or different sources of information. Operationally, these refers to the movable and not movable things such as arm chairs and white board present in the classroom.

ICT Material- According to TechTerms (2010) it refers to technologies that provide access to information through telecommunications. This includes the internet, wireless networks, cellphones, and other communication mediums. Operationally, these refers to the computer and LCD projectors available in the classroom.

Learning Area- According to Simon Far Eastern University (2017), classroom space covers light, temperature, air quality and furniture arrangement which has an impact on students' learning. Enrique (2017), facilities refers to all the physical properties of a school, consisting of the grounds, buildings, and various facilities within the school grounds and inside the school buildings. Operationally, this refers to the display board, learning space, arrangement of furniture and number of students in the classroom.

Lighting and Ventilation- According to Samani and Samani (2012), lighting is a fundamental feature of the designing building environment. Good lighting should be comfortable for all building users. However, CWCT (2012) defined that ventilation is simply the removal of stale indoor air from a building and its replacement with fresh outside air. Operationally, this refers to the lighting, air-circulation and temperature in the classroom.

Physical Learning environment – It is cited upon the study of Candelaria (2016), Middle teacher (2010) emphasizes that physical learning environment of the classroom concerns everything about the classroom including, it doesn't limited to classroom size, arrangement of desks, bulletin boards, temperature, and number of students in the classroom is very important to student success. Operationally, this refers to the features present to a classroom.

Chapter II

Related Literature and Studies

The chapter focused on what scholars and authorities have said or written in respect of the different aspects of the study at hand. The studies and literature stress facts on the relationship of academic achievement and physical learning environment features including furniture, facilities, space, lighting, and air quality. In addition, this chapter provides the conceptual framework, research paradigm, and the hypothesis of the study.

Physical Learning Environment

It is cited in the study of Candelaria (2016), Middle teacher (2010) emphasizes that physical learning environment of the classroom concerns everything about the classroom including, it doesn't limited to classroom size, arrangement of desks, bulletin boards, temperature, and number of students in the classroom is very important to student success. In contrast, Calisin (2016) stated that there is no significant relationship in learning preference of the students as to environmental aspects and their academic performance. She conclude that learners' preference to study in bright light, informal seating, sound— either with or without music, and cool or warm temperature though identified contributory to a good academic standing do not really defines the academic performance of the learner in the classroom. Furthermore, she suggested that there will be a negative effect on learners' achievements on higher grades if dim light implies.

According to Kekare (2015), there is a significant relationship between classroom physical environment and academic achievement. According to him, the learning performance of the students will increase if the students are given a well- furnished classroom with a various facilities. In congruence, Urtil (2016) conclude that one of the essential factors on the students' academic achievement is the classroom environment. He includes that a better classroom environment might lead to a better academic performance of every learner. Furthermore, the study conducted by Suleman & Hussian (2014) the results of their study is that there is significant relationship between the effects of classroom physical environment on the academic achievement of secondary students. According to them, a significant positive effect on the academic achievement of secondary school students if they are given a well-equipped classroom with physical facilities. In the same vein, The International Journal of Indian Psychology (2015), there is a significant difference between classroom physical learning environment and academic achievement of the subject. If the students were given a well – furnished classroom with various facilities, the learning performance will increase.

As cited by Candelaria (2016), Reyes (2004), physical learning environment must be put into a careful discussion. In addition, well organized room is not only very impressive but could give ease, comfort and also effectiveness in everyday classroom task.

Classroom environment has a positive effect on students' academic achievement. Learners will take much interest and get high marks if they are given all physical facilities like furniture, well- painted walls, drinking water, electric supply, charts, model, overhead projector and others. Whether the students are intelligent and poor, classroom has a deep effect on their academic achievement Furthermore, the authors recommended that an

effective, well- managed, vibrant and favorable classroom, environment should be ensued so that teaching learning process may take place successfully and effectively. The authors also suggested that classroom with basic advance facilities to stimulate the teaching learning process (Kausar, Kiyani and Suleman, 2017).

Suleman (2014) concluded that classroom favorable environment has a significant positive effect on the academic achievement scores of students. Therefore the author recommended that classroom physical environment should be well- organized, equipped and facilitated.

21st Century Classroom Environment

Schwartz (2013) concluded that there is a significant relationship in the design construction and maintenance of school facilities. He also added that administrators updated technology, environmental conditions, and learning pods affect teachers and students in the learning environment when planning for new facilities for preparing a 21st –century workforce, communities must have 21st –century- design school facilities to facilitate instruction and equip students to excel in various discipline.

According to the conclusion upon the study of Cofino (2012), the 21st century learner wants to learn not only in the four corners of the classroom but also outside in which they will experience the knowledge at first hand. They always connect socially and interact to others. They also have customized experiences in which they are technology based learner. As the world had change totally, the classroom must also change as the learner and the world dictate. The design of the classroom in the 21st century learning is the classroom must have the curriculum in which derives by technology, used the project-based learning

and the active inquiry process, must have the authentic assessment through the uses technology successfully in the classroom. The classroom must have the complete technology tool. In the classroom management, it should be student- centered, and flexible, interactive and media.

Entrepreneurial Learning Environment

In support to the aforementioned, Sagar (2015) conclude that Entrepreneurial education is best described by a closer look at the learning environment, which includes a physical room and a mental room. Teacher's perceptions and attitudes towards entrepreneurship play a salient role in this. Research shows that the teacher's professionally related perceptions and attitudes have a strong impact on how the students' learning environment. They influence, for example, which physical rooms the teacher chooses to include in the learning environment and what the teacher chooses to include in the mental room.

ICT Materials

Based on the study of Aguado (2015) he concluded that students are highly skilled with regards to the different educational technology application. He also include that some of the educational technology applications are significantly correlated to the students' achievement. He recommended that suggestions on the correlation between educational technology application and students achievements may acquire from professional education instructors by conducting interviews.

Furniture and Fixtures

In summary from the study of Ivory (2011), the data from the study indicates that no one type of furniture provides the same effect for all students, but rather that personal characteristics may dictate the best match for focus, work completion, and neatness.

According to Jaggi, Bakhshi and Sandhu (2013) classroom environment has an impact on the students' performance. They also conclude that it can be observed that the classroom environment was fairly good as far as architectural features and interior enrichment is concerned. But the responses of the students in regards to the suitability of furniture revealed that it was not suited to all the learners and their needs.

In contrary, Jaggi et al, (2013) included that students believed that classroom furniture was not ergonomic and user friendly, thus its continuous use for long duration may affect health, well-being and academic performance of students. However they recommend that urgent development and maintenance is a need for better ergonomically design classroom furniture that would provide a rich learning environment for the students. They also recommend the design of classroom involves a multi-dimensional problem.

Learning Area

Cheryan et al. (2014) according to their results, scientific evidences suggests that the classroom environment must be of minimum structural quality that contain cues signaling that all students are valued learners for students to learn to their full potential. Indeed the redesign of classroom of classroom must be considered within the context of a set of larger factors that promote educational attainment including curriculum development

and teacher training. Furthermore, an abundance of scientific evidences insinuate that student learning achievement is deeply affected by the environment in which this is learning occurs. Attending to both the structural and symbolic features in the classroom will improve student learning, achievement and motivation.

The findings upon the study of Owoeye & Yara (2011) clearly include that there is no significant relationship between the availability of facilities in all secondary school locations and they do not differ significantly in terms of availability of library facilities, textbooks and laboratory facilities. The findings also indicated that instructional facilities are very indispensable to students' academic achievement in many disciplines, students can still perform well without adequate sophisticated materials. In conclusion, the most potent determinant of academic achievement were the school facilities. Facilities in terms of laboratory, library, school buildings, chairs/tables, administrative blocks, chalk-board, school maps and the likes are very crucial to high educational attainment.

Owoeye & Yara (2011) therefore recommend that government should provide adequate material resources to all school locations to enhance the teaching and learning processes Parent Teacher Association (PTA), philanthropist and other charitable organizations are also implored to complement the effort of the government to boost performance of the learners. Furthermore, there are some facilities that could be developed by the teachers and students in order to facilitate teaching and learning hence such facilities should be provided by the teachers and students respectively.

According to Mc Gowen (2007), the analysis of the research data led to limited statistical significant findings. However, research question no.1 which indicates the extent do school facilities impact student achievement resulted to multiple regression of models

for students did not yield any analysis of significance. Therefore, the relationship between school facilities and student achievement may very well be explored by similar studies focused on larger samples or on more specific, individual student data. He recommends the developed several conclusions based upon the data collection and analysis of this study will hopefully guide other investigations as data is gathered and analyzed on this very important topic.

Based on the findings of Duruji, Azuh and Oviasogie (2014), it was concluded in the study that private secondary schools has significant relationship with academic performance of secondary school students. However, the study recommends provision of facilities like modern laboratories, functional libraries, and comfortable classrooms for better academic performance. In connection, for effective maintenance or renovation of old buildings, chairs, desks, recreational equipment among others should be part and parcel of the schools system. Moreover, the relationship between school facilities and student achievement may very well be explored by similar studies focused on larger samples or on more specific, individual student data.

Parshekofti (2014) and Karanja (2015) concluded that physical space of learning environment and academic achievement has a significant relationship. According to Karanja (2015), this implies a huge deficit of learning material as a result of the classroom size which ultimately affects the learners.

Cunningham & Miller, (2011) concluded that overcrowded facilities, too many students in certain classes, and lack of teachers' assistants are three major issues cited as potentially creating problems due to increased stress levels of students and increased teacher-reported incidences of behavioral problems this increased stress levels and

behavior problems found in larger classrooms are frequently accompanied by lower levels of academic achievement.

Lighting and Ventilation

Samani & Samani (2012) concluded that, lighting has a very powerful and essential role on students' learning performance on learning places. According to the authorities' findings and evidence, lighting and the way of applying that in learning places depend on the subject of the study. Moreover, lighting control to avoid discomfort and glare in all different types of lighting is very important and also, students feel and act well in a place with a good lighting quality.

According to the MyTechdecisions (2016), the study showed that high color temperature fluorescent lighting helps students see clearer and allows them to read faster. It also reduces the visual fatigue and glare that are typically experienced with standard color temperature fluorescent lighting. Therefore, high quality classroom lighting improves students' visual acuity, giving them the sight they need to perform well in school.

Based on the interpretation of EPA's Indoor Air Quality (IAQ) Health and Academic Performance (2010), first, managing the school environment can improve Academic performance, the cornerstone of academic performance and IAQ is a structured maintenance program with tight operating budgets, school boards and administrators often consider the maintenance budget as soft money, an expense that they can cut without affecting core academic program needs. Second, providing adequate outdoor ventilation can improve student health and performance, improving outdoor air ventilation rates can improve student and teacher performance; increase test scores, reduce air borne

transmission infection. In support, based from the findings of Salleh, Kamaruzzaman Sulaiman and Mahbob, (2011), majority of the schools in schools are exposed to the inadequate IAQ due to insufficient ventilation and maintenance activities temperature, and ventilation rates. The conditions will lead to the SBS symptoms .and affecting the learners' performance as they are sensitive to any changes surrounding them. They conclude that the state of knowledge regarding Indoor Air Quality (IAQ) in schools is limited. They recommend that programs should be put in place to ensure that all schools provide necessary ventilation.

According to Chanberlin (2015) in the University of Tulsa's Indoor Air Program, students perform significantly better in well ventilated classrooms. The study suggest that increasing classroom ventilation rates toward recommended guidelines translates into improved academic achievement. Reaching the recommended guidelines and pursuing better understanding of the underlying relationships would support sustainable and productive school environments for students and personnel

According to Berkeley Lab (2017), higher classroom ventilation rates have also been linked to a reduction in student absence, which, in turn, may improve student learning. In addition, the opportunities to increase student performance by increasing ventilation rates may be substantial.

According to Lewinski (2015), temperature and humidity have less dramatic consequences in the learning environment, but if temperature is not maintained at a comfortable level, students' performance may negatively be affected.

Conceptual Framework

With regards to the gathered related literature and studies, the researcher conceptualized that physical learning environment has its perceived impact on students' acquisition and accommodation of learning, thus, academic achievement is also considered.

As what Kekare (2015) and Urtil (2016) concluded, there is a significant relationship between classroom physical environment and academic achievement. According to the author, the learning performance of the students will increase if the students are given a well- furnished classroom with a various facilities. In congruence, Suleman and Hussian (2014) concluded that significant positive effect on the academic achievement of secondary school students if they are given a well-equipped classroom with physical facilities.

Research Paradigm

Figure 1 on the succeeding page shows the paradigm's of the relationship between the physical learning environment and learners' academic achievements.

The independent variable is the Physical learning Environment features including furniture, facilities, space, lighting, indoor air quality, and color that may have its perceived impact on learners' academic achievement which is considered to be the dependent variable. From the results of the study are the implications on the design of physical learning environment that may be applied in the classroom design of Siniloan Integrated National High School in the Entrepreneurship subject.

Independent Variable   **Dependent Variable**

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┌─────────────────────────────┐              ┌───────────────────────┐
│ Physical Learning Environment│              │                       │
│ Features                     │              │                       │
│                              │              │ Academic achievement of│
│     • ICT Materials          │─────────────▶│    Grade 10 learners  │
│     • Furniture and Fixtures │              │                       │
│     • Learning Area          │              │                       │
│     • Lighting and Ventilation│             │                       │
│                              │              │                       │
└─────────────────────────────┘              └───────────────────────┘
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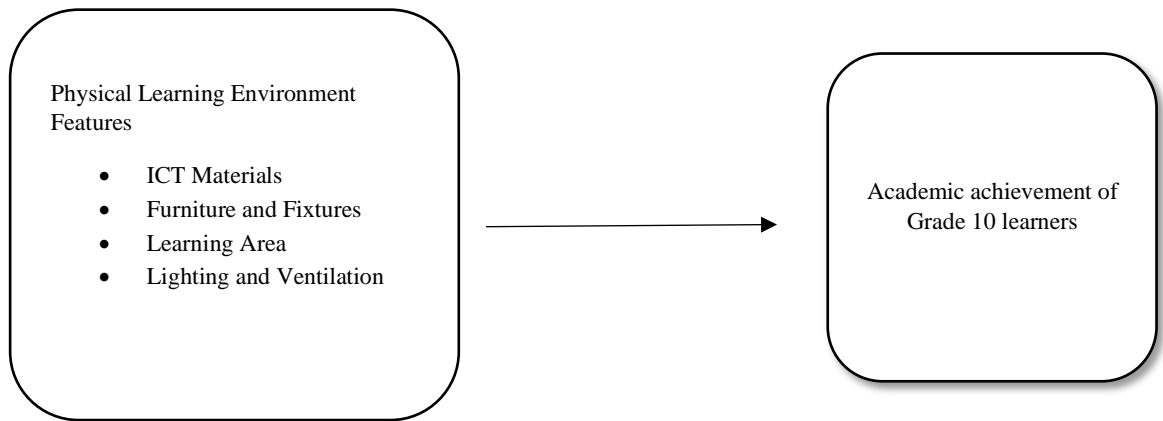
Hypothesis

There is no significant relationship between students' academic achievement and physical learning environment including ICT material, furniture and fixtures, lighting and ventilation and learning area.

Chapter III

METHODOLOGY

This section leads the readers to a comprehensive understanding of the research locale, research design, respondents, sampling, instrumentation, data gathering procedures, and statistical treatment.

Research Locale

The study was conducted at Siniloan Integrated National High School in Siniloan, Laguna. The researcher opted to conduct this study in this school because it was observed that maintenance and management of school's physical learning environment had been disregarded. Hence, these may affect the academic achievement of students in Entrepreneurship.

Research Design

This study employed the descriptive research design. This research design had been chosen by the researcher since descriptive design focuses at the present condition, its purpose is to find new truth (Calmorin & Calmorin, 2007). The method was used to gather information about the present existing condition of the study. The method also apportioned with the process of assessing, finding out the significant relationship of academic achievement and physical learning environment of grade 10 students in Entrepreneurship.

Respondents

The respondents of this study are the grade 10 students of Siniloan Integrated National High School from various sections with one hundred fifty (150) from the five hundred- twenty- seven (527) students as the total of the population. The respondents are chosen for they are experiencing the physical learning environments that may significantly influence their academic achievement.

Sampling Techniques

The researcher utilized the cluster sampling which is under probability sampling. The clusters was chosen according to the fishbowl technique since the study is primarily concentrated on the grade 10 students that are taking Entrepreneurship under the Technology and Livelihood Education. The researcher used the fishbowl technique since it is used to manage group discussion, rather than a large group a smaller group is isolated to discuss (BetterEvaluation, 2015).

Instrumentation

The researcher used a modified questionnaire of Ahmad, Yahata, Abdullah, Noh and Adnan (2015) to determine the physical learning environment of the respondents. To find out the academic achievement of the respondents, their previous grade in Entrepreneurship from first to third grading period will be the basis of the data.

The researcher consulted to his adviser to evaluate the instrument as to layout and statement structure. After the evaluation of the instruments, the researcher improved and revised the questionnaire and ask for the final approval of his adviser. Upon approval, it was subjected to validation process by consulting the questionnaire to three (3) master teachers in the field, and then administered it to Grade 10 students in Entrepreneurship. After the retrieval of the questionnaire, it was consulted to the statistician.

Data Gathering Procedures

The researcher wrote a letter of request to conduct the study and addressed to the secondary teacher of Siniloan Integrated national High School. Upon receiving the consent, the distribution of the questionnaire was immediately done, collected, and tallied.

The responses of the respondents to the questionnaires was tabulated and ranked based on the relationship of physical learning environment and academic performance of students using the frequency distribution. Questionnaire was used to gather informations and to validate the answers.

Statistical Treatment

The researcher used the following statistical measures and tools in summarizing, presenting and analyzing the data gathered.

1. To assess the physical learning environment and academic achievement of students in Entrepreneurship, the following formula was used:

$$WM = \frac{4f + 3f + 2f + 1f}{n}$$

Where:

WM - Weighted Mean

f – Frequency

n – Total number of the respondents

Results was interpreted using the following:

Scale	Range	Descriptive Rating
4	3.25 – 4.00	Very Satisfied
3	2.50 – 3.24	Satisfied
2	1.75 – 2.49	Fairly Satisfied
1	1.00 – 1.74	Not Satisfied

2. To find out the significant relationship between the physical learning environment and academic achievement in Entrepreneurship of the respondents the Pearson's r was used.

$$rxy = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2}}$$

Where

n = number of pairs scores

Σxy = sum of the products of paired scores

Σx = sum of x scores

Σy = sum of y scores

Σx^2 = sum of squared x scores

Σy^2 = sum of squared y scores

Size of Correlation	Interpretation
0.90 to 1.0	Very high positive correlation
0.70 to <0.90	High positive correlation
0.50 to <0.70	Moderate positive correlation
0.30 to <0.50	Low positive correlation
0.00 to <0.30	Negligible correlation

Chapter IV

RESULTS AND DISCUSSION

The purpose of the study was to find out the significant relationship of academic achievement and physical learning environment in Entrepreneurship. This chapter presents the descriptive analysis and interpretation of the gathered data. All the data are based on the responses of Grade 10 students of Siniloan Integrated National High School.

The developed questionnaire that was administered focused specifically on the physical learning environment including, ICT material, furniture and fixture, lighting and ventilation, and learning area.

Table 1.1 Frequencies and Weighted Mean Distribution of the Responses as to ICT Materials.

No.	Statements	AWM	DR
	A. Computers in my classroom		
1.	can be used in hands-on activities (typing etc.).	2.68	Satisfied
2.	can be used to develop skills in computer literacy.	2.59	Satisfied
3.	are functioning and updated.	2.52	Satisfied
4.	are enough to accommodate the number of students.	2.35	Fairly Satisfied
	B. LCD Projectors in my classroom		
1.	can be used in discussing lessons.	2.49	Fairly Satisfied
2.	enhance the learning interaction of teacher and students.	2.61	Satisfied
3.	are functioning and updated.	2.49	Fairly Satisfied
	AVERAGE WEIGHTED MEAN	2.53	Satisfied

Table 1.1 shows the weighted mean distribution of ICT Materials present in Siniloan Integrated National High School. The computers present in the classroom can be used in hands- on activities (typing etc.) has the highest weighted mean of 2.69 (Satisfied). This shows that the students are satisfied with the ICT Materials in the classroom. This may be because of the computers and LCD projectors are provided by the school in the learning environment. However, the computers in the classroom are enough to accommodate the number of students which has the lowest weighted mean of 2.35 (Fairly Satisfied). This shows that the computers provided by the school is not enough to the number of students. It may be because the budgets for purchasing computers are not enough.

In congruence, the LCD Projectors enhance the learning interaction of teacher and students has the highest weighted mean of 2.61 (Satisfied). This may be because of students gave most of their attention in the discussion when the teacher use LCD projectors in teaching. Nevertheless, the LCD Projector can be used in discussing the lesson and functioning and updated has the lowest weighted mea of 2.49 (Fairly Satisfied). This may be because the LCD Projectors provided by the school are not updated and some are not functioning so the projectors are cannot be used in the discussion.

In summary, the overall average weighted mean of 2.53 (Satisfied) means that the Grade 10 students are satisfied to the ICT Materials offered by the school. It may be because there are ICT materials present in the learning environment of the students.

Table 1.2 Frequencies and Weighted Mean Distribution of the Responses as to Furniture and Fixture.

No.	Statements	AWM	DR
	C. Armchairs in my classroom		
1.	can be used to perform learning tasks (writing, drawing)	3.37	Very Satisfied
2.	can be used to hold equipment (books, stationery).	3.29	Very Satisfied
3.	are durable and safe to use (sturdy, not easily broken).	3.01	Satisfied
4.	can be combined to form groups.	3.04	Satisfied
5.	are able to accommodate various body types.	2.90	Satisfied
6.	are comfortable to be used for long periods of time.	3.09	Satisfied
	D. White board in my classroom		
1.	is of the appropriate size to suit the needs of teaching and learning.	2.99	Satisfied
2.	is suitably placed	2.99	Satisfied
3.	is clearly visible (example: writing).	2.97	Satisfied
4.	is easy to clean	3.00	Satisfied
	AVERAGE WEIGHTED MEAN	2.77	Satisfied

Table 1.2 shows the weighted mean distribution of furniture and fixtures in Siniloan Integrated National High School. The arm chairs can be used to perform learning tasks (writing and drawing) has the highest weighted mean distribution of 3.37 (Very Satisfied). This shows that the armchairs used by the learners are well equipped to perform various learning activities. This may be because the school observe the importance of arm chairs in the students learning environment. However the armchairs are able to accommodate various body types has the lowest weighted mean distribution of 2.90 (Satisfied). This shows that the school failed to consider various body types in providing arm chairs. This may be because of the budget provided by the government in purchasing classrooms.

On the other hand, the white board in the classroom is easy to clean have the highest weighted mean distribution of 3.00 (Satisfied). This shows that the whiteboard present in the classroom satisfies the students. It may be because the classroom gave much budget in

purchasing a whiteboard in the learning environment. Nonetheless, the whiteboard in the classroom is clearly visible has the lowest weighted mean distribution of 2.97 (Satisfied). This shows that the whiteboard is not suitably placed. This may be because of the light projection and the size of the classroom.

Therefore, the overall average weighted mean of 2.77 (Satisfied) which means that the grade 10 students are satisfied in the furniture and fixtures present in their classroom. It may be because the school gave much attention on giving students a good classroom.

Table 1.3 Frequencies and Weighted Mean Distribution of the Responses as to Lighting and ventilation.

No.	Statements	AWM	DR
	E. The lighting in my classroom … …		
1.	is white which makes the room bright.	3.22	Satisfied
2.	is appropriate due to an adequate number of lights.	3.18	Satisfied
3.	is appropriate due to well- functioning lights.	3.07	Satisfied
4.	is appropriate since no equipment blocks the light from reaching students.	3.10	Satisfied
5.	illuminates the entire room evenly .	2.91	Satisfied
6.	meets the needs of learning and teaching activities (Presentation).	3.11	Satisfied
	F. The air circulation in my classroom is appropriate … …		
1.	to the number of fans corresponds with the size of the classroom.	2.82	Satisfied
2.	due to large windows on both sides of the classroom.	3.07	Satisfied
3.	because of well- functioning fans.	2.80	Satisfied
4.	with good ventilation.	2.87	Satisfied
5.	with unobstructed ventilation.	2.69	Satisfied
	G. The temperature in my classroom … …		
1.	is comfortable for the teaching and learning process.	2.83	Satisfied
2.	can be controlled by the students	2.67	Satisfied
3.	is adjustable according to teaching and learning activities.	2.79	Satisfied
4.	is not too hot.	2.62	Satisfied
5.	is not too cold.	2.71	Satisfied
6.	enables me to concentrate on teaching and learning.	2.80	Satisfied
7.	enables me to remain active.	2.86	Satisfied
	AVERAGE WEIGHTED MEAN	2.90	Satisfied

Table 1.3 shows the weighted mean distribution of lighting and ventilation provided in Siniloan Integrated National High School. The lighting in the classroom is white which makes the room bright has the highest weighted mean distribution of 3.22 (Satisfied). This shows that the white light makes the room bright so the students are satisfied. It may be because the school observe the importance of bright lights in the students learning.

However, the lighting in the classroom illuminates the entire room evenly has the lowest weighted mean distribution of 2.91 (Satisfied). This shows that the lights doesn't cover the whole classroom, it maybe because of the shortage in budget given.

On the other hand, the air circulation in the classroom is appropriate due to large windows on both sides of the classroom has the highest weighted mean distribution of 3.07(Satisfied). This shows that the size of windows as constructed in the classroom are appropriate to satisfy the students. It may be because the teachers observe the proper and appropriate window. However, the air circulation in the classroom is appropriate with unobstructed ventilation has the lowest weighted mean distribution of 2.69 (Satisfied). Tis shows that there are things that might hinder the window for the air to enter. This may be because of the size of the classroom and its arrangement.

Furthermore, the temperature in the classroom enables the students to remain active has the highest weighted mean distribution of 2.86 (Satisfied). This shows that the temperature inside the classroom is pleasing so the learners remain active to learn. This may be because of the windows and fans present are appropriate to the classrooms. However, the temperature in the classroom is not too hot has the lowest weighted mean distribution of 2.62 (Satisfied). This shows that the temperature in the classroom is not appropriate. It may be because of the type of classroom construction and the availability of fans are not sufficient.

With regards to the data gathered, the overall average weighted mean distribution of 2.90 (Satisfied) which means that the Grade 10 students are satisfied to the lighting and ventilation provided in the classroom. It may be because the school always consider a good and pleasant learning environment.

Table 1.4 Frequencies and Weighted Mean Distribution of the Responses as to Learning Area.

No.	Statements	AWM	DR
	H. Display board in my classroom		
1.	is suitably placed.	3.07	Satisfied
2.	is of appropriate size to contain important information (example: time tables, duty roster).	2.99	Satisfied
3.	is functioning.	3.02	Satisfied
4.	provides space for information of every subject taught.	3.00	Satisfied
5.	has a sufficient number to display learning information.	2.95	Satisfied
6.	is strong (sturdy, steady).	3.03	Satisfied
	I. Learning space in my classroom		
1.	has appropriate size in accordance with the number of students.	3.10	Satisfied
2.	facilitates student movements during learning activities.	3.09	Satisfied
3.	facilitates teacher movements during learning activities.	3.23	Satisfied
4.	allows group learning activities.	3.21	Satisfied
5.	allows individual learning activities	3.22	Satisfied
	J. The arrangement of furniture in my classroom		
1.	is movable to suit group activities (discussion).	3.09	Satisfied
2.	is movable to suit individual activities (tests, revisions).	3.13	Satisfied
3.	is movable to suit teaching and learning activities (drama, acting, role playing, facilitation).	3.06	Satisfied
4.	encourages interaction among students during learning process.	2.93	Satisfied
5.	encourages interaction between teachers and students.	3.09	Satisfied
6.	arranged in accordance to the needs of teaching and learning	3.05	Satisfied
	K. The number of students in my classroom		
1.	suits the size of classroom.	3.29	Very Satisfied
2.	does not make classroom crowded.	3.01	Satisfied
3.	allows me to move about freely during teaching and learning activities.	3.05	Satisfied
4.	makes it easy for teachers to effectively monitor students	3.13	Satisfied
5.	facilitates learning and teaching activities which can be carried out comfortably	3.05	Satisfied
	AVERAGE WEIGHTED MEAN	3.08	Satisfied

Table 1.3 shows the weighted mean distribution of the learning area provided in Siniloan Integrated National High School. The display board in the classroom is suitably placed has the highest weighted mean distribution of 3.07 (Satisfied). This shows that the display board are placed in its respective place. This may be because the teachers observed the proper ways on placing display boards. While the display board in my classroom has sufficient number to display learning information is the lowest weighted mean distribution of 2.95 (Satisfied). This shows that the display board doesn't contain most of the information needed by the students. This may be because of the space provided in the display board are not sufficient.

In addition, the learning space in the classroom facilitates the teacher movements during learning activities has the highest weighted mean distribution of 3.23 (Satisfied). This shows that the space for the teachers' activity is well observed. It may be because of the proper management of classroom implemented in the school. While the learning space in the classroom facilitates student movements during learning activities has the lowest weighted mean distribution of 3.09 (Satisfied). This shows that the space for students' activity is not proper accordingly to the size of the classroom. It may be because of the space of the classroom are not sufficient to accommodate students' activities.

The arrangement of furniture in the classroom is movable to suit individual activities (tests, revisions) has the highest weighted mean distribution of 3.13 (Satisfied). This shows that the classroom can accommodate the individual activity of the students. It may be because the teachers are very much particular in arranging the furniture accordingly to the individual activities. The arrangement of furniture in the classroom encourages interaction among students during learning process has the lowest weighted mean

distribution of 2.93 (Satisfied). This shows that the furniture are not arranged accordingly to the interaction of the students, it may be because the teachers give much attention in encouraging a student and teacher interaction.

The number of students in my classroom suits the size of classroom has the highest weighted mean distribution of 3.29 (Very Satisfied). This shows that the number of students are properly followed. It may be because of the availability of the classroom that can accommodate the learners. While the number of students in my classroom allows to move about freely during teaching and learning activities also facilitates learning and teaching activities which can be carried out comfortably have the lowest weighted mean distribution of 3.05 (Satisfied). This shows that the space are not sufficient for the student and teacher activity. It may be because the size of the classroom construction doesn't match accordingly to the number of students.

However, the overall average weighted mean distribution of 3.08 (Satisfied) which means that the Grade 10 students are satisfied in the learning area provided in the classroom. It may be because the learning area present in the school planned the classroom construction accordingly to the student needs.

Table 2.1 Ranked frequency, percentage and the weighted mean of Students' Academic Achievements

	f	Percentage	x	Ranking
98-100	5	3.3	89.63	**6**
95-97	28	18.7	89.63	**2**
92-94	20	13.3	89.63	**5**
89-91	36	24.0	89.63	**1**
86-88	24	16.0	89.63	**3**
83-85	23	15.3	89.63	**4**
80-82	5	3.4	89.63	**5**
77-79	2	1.4	89.63	**8**
74-76	4	2.7	89.63	**7**
TOTAL	**147**	**98.0**	**89.63**	

Table 2.1 shows the ranked frequencies, percentage and weighted mean of the Grade 10 Students of Siniloan Integrated National High School in Entrepreneurship. The first rank are the students with grades between 89-91 has the highest frequency distribution of thirty-six (36) percentage of 24.0%. However, the eighth rank are the students with grade between 77-79 has the lowest frequency distribution of two (2) with a percentage of 1.4. In addition, the weighted mean computed from all the grades collected in Grade 10 students of Siniloan Integrated National High School is 89.63 which is considered as Very Satisfactory according to the Department of Education (DepEd).

Table 2.2 The Correlation table of ICT Materials and Furniture and Fixtures to the students' Academic Achievements.

Grade	ICT Materials	Analysis	Furniture and Fixtures	Analysis
Pearson's r	-.206*	Low correlation	-.128	Negligible Correlation
Sig (2 – tailed)	.013	Significant	.137	Not Significant

$$\alpha = 0.05$$

Table 2.2 shows the correlation table of ICT Materials and Furniture and Fixtures to the students' Academic Achievements. The ICT Materials has a person's r correlation of -.206* (Low Correlation) and a Sig (2-tailed) of .013 (Significant) these shows that ICT Materials has a significant relationship to the students' academic achievements. It may be because they adopt the 21st century learning practices applied in Entrepreneurship subject. Therefore, the hypothesis that there is no significant relationship between the academic achievement in entrepreneurship and ICT material was rejected because it was viewed that there is a significant relationship. In congruence to the aforementioned, Cofino (2012) conclude that the design of the classroom in the 21st century learning is the classroom must have the curriculum in which derives by technology, used the project-based learning and the active inquiry process, must have the authentic assessment through the uses technology successfully in the classroom. It was also concluded by Aguado (2015), students are highly skilled with regards to the different educational technology applications are significantly correlated to the students' academic achievement.

However, the Furniture and Fixtures has a person's r correlation of -.128 (Negligible Correlation) and a sig (2-tailed) of .137 (Not Significant), these shows that Furniture and Fixture are not significant to the academic achievement of Grade 10 Students in Entrepreneurship because there may be more factors that affects significantly to their academic achievements. Therefore the hypothesis that there is no significant relationship between the academic achievement in Entrepreneurship and furniture and fixtures was accepted since the results viewed that there are no significant relationship. With regards, the study of Ivory (2011) stated that no one type of furniture provides the same effect for all students, but rather that personal characteristics may dictate the best match for focus, work completion, and neatness.

Table 2.3 the correlation table of Learning area and Lighting and Ventilation to the students' Academic achievements.

Grade	Learning Area	Analysis	Lighting and Ventilation	Analysis
Pearson's r	**.070**	**Negligible Correlation**	**.017**	**Negligible Correlation**
Sig (2 – tailed)	**.432**	**Not Significant**	**.847**	**Not Significant**

$\alpha = 0.05$

Table 2.3 shows the correlation table of Learning area and Lighting and Ventilation to the students' Academic Achievement. The Learning area has a person's r correlation of .070 (Negligible Correlation) and a sig (2-tailed) of .432 (Not Significant)

these shows that the learning are provided in the classroom is not significant to the students' academic achievements in Entrepreneurship maybe because the students will learn without regard of the learning area. Therefore, the hypothesis that there is no significant relationship between the academic achievement in Entrepreneurship and learning area was accepted since the results shows that there is no significant relationship. With this regards, the findings upon the study of Owoeye & Yara (2011) clearly include that there is no significant relationship between the availability of facilities in all secondary school locations and they do not differ significantly in terms of availability of library facilities, textbooks and laboratory facilities. The findings also indicated that instructional facilities are very indispensable to students' academic achievement in many disciplines, students can still perform well without adequate sophisticated materials. In conclusion, the most potent determinant of academic achievement were the school facilities. Facilities in terms of laboratory, library, school buildings, chairs/tables, administrative blocks, chalk-board, school maps and the likes are very crucial to high educational attainment.

On the other hand, the lighting and ventilation has a person's r correlation of 0.17 (Negligible Correlation) and a sig (2-tailed) of .847 (Not Significant) these shows that there n is no significant relationship between lighting and ventilation and students' academic achievements these may be because of the students' learning preferences, some students are more comfortable to study in bright lighting or otherwise. Therefore, the hypothesis that there is no significant relationship between the academic achievements in Entrepreneurship and lighting and ventilation since it was viewed that there is no significant relationship. In contrary, Samani & Samani (2012) concluded that, lighting has a very powerful and essential role on students' learning performance on learning places.

Moreover, lighting control to avoid discomfort and glare in all different types of lighting is very important and also, students feel and act well in a place with a good lighting quality. In addition, according to Chanberlin (2015) in the University of Tulsa's Indoor Air Program, students perform significantly better in well ventilated classrooms. The study suggest that increasing classroom ventilation rates toward recommended guidelines translates into improved academic achievement. Reaching the recommended guidelines and pursuing better understanding of the underlying relationships would support sustainable and productive school environments for students and personnel.

Chapter V

SUMMARY, FINDINGS, CONCLUSION AND RECOMENDATION

Presented in this chapter are the summary of the conducted research, findings derived from analysis and interpretation of the results. Moreover, this imparts conclusion framed and recommendation thereafter.

Summary

This research aimed to find out the relationship of physical learning environment to the academic achievement in Entrepreneurship among Grade 10 students at Siniloan Integrated National High School, school year 2017-2018.

Specifically, the study sought to achieve the following objectives.

1. Determine the physical learning environment of the respondents in terms of:

    1.1. ICT Material

    1.2. Furniture and Fixture

    1.3. Lighting and Ventilation

    1.4. Learning Area

2. Assess the students' academic achievement in Entrepreneurship.

3. Find out if there is a significant relationship between the physical learning environment and respondents' academic achievement in entrepreneurship.

4. Develop a primer based on the implications from the findings as a result of the study.

This descriptive study utilized a quantitative approach

Findings

Based on the analysis of the data, the following findings were revealed:

1. In terms of the responses of the grade 10 students' to their physical learning environment, the ICT Materials has an average weighted mean of 2.53 (Satisfied). However, the Furniture and Fixtures has an average weighted mean of 2.77 (Satisfied). In addition, the Lighting and Ventilation has an average weighted mean of 2.90 (Satisfied). Lastly, the Learning Area has an average weighted mean of 3.08 (Satisfied).

2. The academic achievement of students in Entrepreneurship has a mean of 89.63 and a standard deviation 5.30.

3. The ICT Materials has a Person's r coefficient of -.206* (Low Correlation) and a Sig (2-tailed) of .013 (Significant) these shows that ICT Materials has a significant relationship to the students' academic achievements. However, the Furniture and Fixtures has a Person's r coefficient of -.128 (Negligible Correlation) and a sig (2-tailed) of .137 (Not Significant), these shows that Furniture and Fixture are not significant to the academic achievement of Grade 10 Students. On the other hand, the lighting and ventilation has a Person's r coefficient of 0.17 (Negligible Correlation) and a sig (2-tailed) of .847 (Not Significant) these shows that there is no significant relationship between lighting and ventilation and students' academic achievements. In addition, the Learning area has a person's r correlation of .070 (Negligible Correlation) and a sig (2-tailed) of .432 (Not Significant) these shows

that the Learning area provided in the classroom is not significant to the students' academic achievements.

Conclusion

Based on the findings, the following conclusions were drawn:

1. The response of Grade 10 students on their physical learning environment in Siniloan Integrated National High School was 2.82 (Satisfied) in terms of ICT materials, furniture and fixtures, lighting and ventilation, and learning area.

2. The assessment of Grade 10 students' academic achievement in Entrepreneurship resulted to the mean of 89.63 and a standard deviation of 5.30.

3. With regards to the significance of the variables, ICT materials has a significant relationship to the students' academic achievements. In addition, furniture and fixture are not significant to the academic achievement of Grade 10 Students. However, learning area provided in the classroom is not significant to the students' academic achievements. In congruence to the aforementioned, no significant relationship between lighting and ventilation and students' academic achievements.

Recommendation

Based on the findings and conclusions the following are recommended:

1. Since it was viewed that ICT Materials are significant in students' Academic Achievement in Entepreneurship, classrooms maybe designed in such a way that various technologies might be used effectively. In addition, schools may provide

updated and functioning computers and LCD projectors in the learning environment in the field of Entrepreneurship.

2. As the study aimed to develop a primer as the output of the study, it is suggested by the researcher to test the acceptability and validity of the developed primer.

3. Special budgets to provide schools for purchasing classroom accessories may be considered, since providing favorable learning environment means academic achievement of students (Kekare, 2015; Urtil, 2016; Suleman and Hussian, 2014).

4. It is also suggested that this type of study may be conducted in elementary, secondary and tertiary levels.

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