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Challenges and Solutions of Acquiring Environmental Teaching and Learning Experiences of OTM Programme in Rivers State Polytechnics

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ABSTRACT*: The study adopted survey research design on challenges and solutions of acquiring environmental teaching and learning experiences of OTM programme in Rivers State Polytechnics.. The population of the study was drawn from CEAPOLY and KENPOLY of NDII, HNDI and HNDII numbered 596 students of OTM programme with a sample of 234 using Krejie and Morgan sampling technique. The research instrument used was "challenges and solutions of acquiring environmental teaching and learning experiences", (CASAETALE) with a five point scale. The instrument was subjected to face and content validation by three experts. To ascertain the reliability and consistency of measurement, a pilot study was carried on 12 students which yielded 0.97 co-efficient. A total of 234 copies of the questionnaire were administered and 132 successfully retrieved. Mean statistics was used to answer the research questions, Standard Deviation used to find out the extent in which scores clustered around the means and t-test used to analyse the hypotheses. The finding showed that there was very high level of challenges of acquiring environmental teaching and learning experiences and very high level of solutions to those challenges of acquiring environmental teaching and learning experiences of OTM programme. Among other things, it was recommended that government and concerned organizations should make appropriate and adequate teaching and learning environment, facilities and equipment for appropriate environmental teaching and learning experiences to take place in the Polytechnics in Rivers State.*

KEYWORDS*:*teaching, learning**,** challenges of teaching and learning, solutions, environmental teaching and learning experiences, OTM programme

INTRODUCTION

Since the inception of world, teaching and learning experiences are fundamental aspects expected to be acquired from teaching and learning environments. Amadioha (2018) posited that teaching is basically the intent to bring about learning that will promote behavioural change in the learner, while learning is acquiring of relatively permanent change in behaviour in a particular learning environment and that every teaching and learning has likely outcome which is observable change in the learner that can be inferred. Akuma (2011) postulated that, learning is "any change in behaviour which is as a result of experience" from the learning environment be it planned or unplanned. This has to be actualized through some techniques, strategies and methods which must be applied by the teacher to achieve desired goals. Teaching and learning environments, and teaching methods no doubts must complement each other for effective learning to actually take place.

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Environmental teaching and learning experiences are those relatively permanent changes that are expected to be acquired by the learners as result of adequate interactions with designed or undersigned environment so as to enable the learner(s) fit into the society. They are also employable, marketable and managerial experiences expected to be acquired by the learners as a result of interaction from the teaching and learning environments that will translate in meaningful business skills. Office Technology and Management (OTM) programme is one of the programme designed for polytechnics with teaching and learning environments. Olukemi and Boluwaji (2014) said Office Technology and Management is a new academic programme in tertiary institutions including polytechnics designed to replace Secretarial Studies programme. The need to prepare competent, skilful and employable graduates in the world of work, which is being driven by technological content which was lacked in the curriculum of erstwhile Secretarial Studies programme in the nation`s tertiary institutions gave birth to Office Technology and Management. Akpotohwo (2014) observed that courses in the OTM curriculum include ICT office applications I and II, Database Management System, Management Information System, Advanced Web Page Design, Advanced Desktop Publishing, and Modern Office Technology etc. posed new challenges in the aspects of human resources, facilities, laboratories and equipment as well as appropriate teaching and learning environments. OTM programme need standard and conducive teaching and learning environment with equipped studios, laboratories, facilities and good human resources for learners to acquire appropriate environmental teaching and learning experiences.

Observably, Office Technology and Management (OTM) Programme seems to be suffering from challenges of environmental teaching and learning experiences that may affect graduates of the programme negatively.

This could be the reason Osunde and Ogiegbaen (2005) noted lack of infrastructure, facilities and equipment that are associated with student's poor achievement and poor physical environment experiences. Also, Ohakamike-Obeka (2016) observed the following environmental deficiencies in Nigerian schools leading to poor environmental teaching and learning experiences; that many schools, especially those in urban areas are located in areas where there is a busy movement and activities of many people causing noise pollution, many schools have dilapidated buildings with leaking roofs and cracked walls. Most of the schools in urban areas are also overcrowded with some classrooms housing as many as 70 to 100 students. There is inadequate electricity, laboratories, studios in majority of the schools, it was also observed that most of the schools do not have adequate staff rooms, convinces and offices and good libraries and where they are available they are not equipped. These are challenges that can cause negative environmental teaching and learning experiences in OTM programme in the polytechnics. Conducive learning environments are necessary for effective environmental teaching and learning experiences to take place. A quiet and serene school environment including adequate gender friendly facilities help the learners to assimilate lessons taught by the teacher. Class size should be manageable for the teacher to have absolute control of the learners. The class should be well ventilated and with necessary facilities and equipment in place.

This is mostly based on environmental design, availability of resources, teachers' experiences and design with focus on the objectives, learners' previous knowledge and age. Teaching and learning experiences are the specific skills, attitudes and behaviours expected to be transferred

to by the teacher and acquired by learners, and this is done in a good learning environment. Environmental teaching and learning experiences are connected to the physical and psychosocial skills, security, attitudes and behaviours, including furniture, equipment, quality of classrooms, classrooms sizes, learning facilities and relationship between students and students, students and teachers, students and management etc. which learners are expected to acquire (Amirul, Ahmad, Yahya, Abdulla, Adnan, and Noh, 2013).

According to BC Campus (2018) teaching and learning environment refer to the diverse physical locations, contexts, and cultures in which students learn. Since students may learn in a wide variety of settings, such as outside-of-school locations and outdoor environments, the term teaching and learning environment is often used as a more accurate or preferred alternative to classroom, which has more limited and traditional connotations in classroom with rows of desks and a chalkboard. The terms also encompasses the culture of a school or class established democratic rules by the students and teachers, it is a presiding philosophy and characteristics, including how individuals interact with and treat one another as well as the ways in which teachers may organize an educational setting to facilitate learning with instructional strategies and technologies. Amirul, Ahmad, Yahya, Abdulla, Adnan and Noh (2013) also postulated that teaching and learning environment referred to the space allocated for classrooms, laboratories, open spaces and offices for acquiring experiences. Teaching and learning environment can also be defined in the social context of psychological and pedagogical which can affect learning, achievement and attitudes of the students. By acquiring these environmental experiences, it will lead to sustainability of the academic environment. (Fraser, 1994; Kilgour, 2006) argued that physical component includes all physical aspects such as classrooms, teaching materials and learning facilities, both inside and outside the classroom, while the psychosocial component is related to the interaction that occurs between students and students, students with teachers and students with the environment. Ukata, Wechie and Nmehielle (2017) posited that teaching is an exchange of ideas between a teacher and a student in a designed or undersigned learning environment. Learning on the other hand is the relatively permanent change in a person's knowledge or behaviours due to experiences acquired. This definition has three components: 1) the duration of the change is long-term rather than short-term; 2) the place of the change is the content and structure of knowledge in memory or the behaviours of the learner; 3) the cause of the change is the learner's experience in the environment rather than fatigue, motivation, drugs, physical condition or physiologic intervention (Malamed, 2016). Doskocil (2016) Noted that no matter how much experience you have, there are always challenges to face in the classroom and school environment. Expectations are high from students, from parents, from Department Heads, Administrators and the society of impacting the needed experience to the learners. It is in the same way, Office Technology and Management programme that is capital intensive, space and technological demanding as part of the academic environment require appropriate attention by creating good teaching and learning environment for better environmental experiences.

REVIEW OF RELATED LITERATURES

Physical Teaching and Learning Environment Experiences

Teaching and learning environment play major role in acquiring experiences. Abdulla, Adnan, and Noh (2013) considered the physical teaching and learning environment as an important

teaching tool for teachers and students. Management need to provide space while teachers need to plan the layout and learning space in order to meet the learning goals and provide a comfortable learning environment for students. Accordingly Abdulla eta el (2013), many bad behaviours resulting from weaknesses in existing teaching and learning environment. Weinstein and Mignano (2003) stated the six basic functions of the physical teaching and learning environment to be security and protection in the social context, as a symbolic identifier, as a tool to do the task, having the function of fun and function as a place for student growth. Meanwhile, Tessmer and Harris (1992) stated that there are three kinds of physical factors of learning environment to develop effective teaching and learning. First, learning facilities including state of the furniture and learning location take place. The location may be a classroom, computer laboratories, keyboarding studio, science laboratories, an office or any place where learning occurs. Important aspects of facilities are in the learning space, a seating area, temperature, sound, lighting and accessibility .Second, instructional materials related to objects used in the environment by teacher and students.

Teaching and learning materials are as attachments, video tapes, computer compact discs and books and thirdly equipment. An attractive teaching and learning environment is associated with the way furniture is arranged, lighting is used, ability of wall to absorb sound and floor properties have been identified to affect student achievement (Tanner, 2000). In addition, the physical environment can also affect learning, ideas, values, attitudes and culture and if properly planned, positive learning environment will affect the learning process (Sanoff, 2000). According Matai and Matai (2007) the design of the physical environment has a significant effect on the behaviours and in turn can form a particular social organization.

Theory of Teaching and Learning Environment

Various theories and models have highlighted the importance of teaching and learning environment in acquiring environmental experiences. Among them is Walberg productivity model, model of conceptual systematic change and model of representation of schematics productivity in education.

The importance of the teaching and learning environment has been highlighted by Walberg (1981).

In his model, Walberg has identified nine elements that affect the productivity of education and those nine elements work together to improve students` achievement in the teaching and learning environment in Figure 1 below:

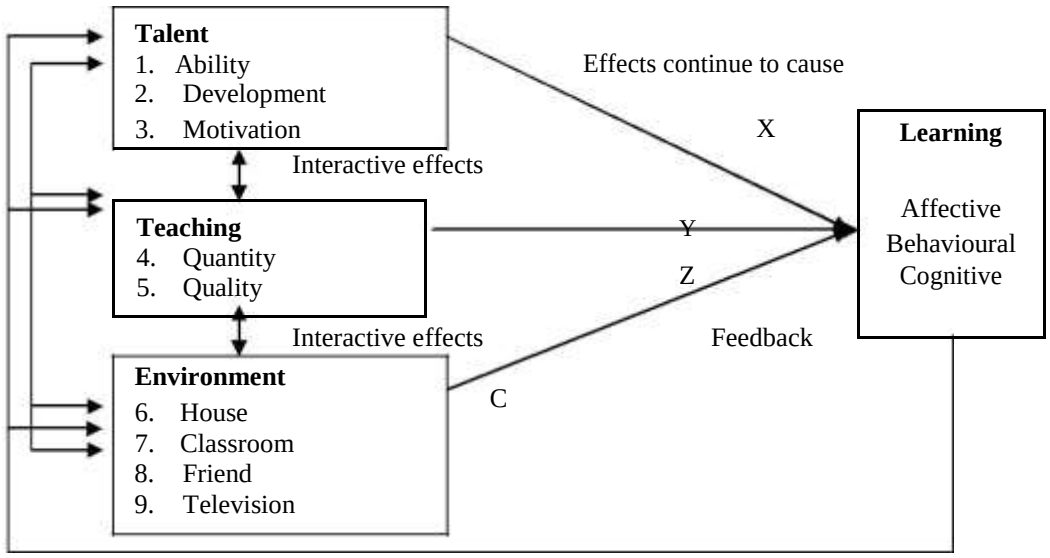

Figure 1: Walberg Educational Productivity Model (Walberg, 1981)

According to Walberg, nine of the elements contained three important factors that influence the production of learning in the areas of talent, teaching methods and environments. These factors are very important and mutually interact and directly impact on the production of learning in terms of affective, cognitive and behavioural aspect of the students.

Model of Conceptual Systematic Change

Gardiner (1989) suggested a model that displays the relationship between the factors that influence students in technology learning environment. In the model, Gardiner showed three overlapping circles in which each of them was described as ecosfera**,** sociosfera and tecnosfera. Ecosfera was associated with the physical environment and the students around it. Sociosfera was associated with the outcome of individual interactions with others in their environment (experience), while tecnosfera was described as a man-made learning environment. According to Gardiner, individuals or students in the middle and are the most complex component in the system. This means that students are influenced by all aspects of the environment, including the physical and psychosocial aspects. See the model below:

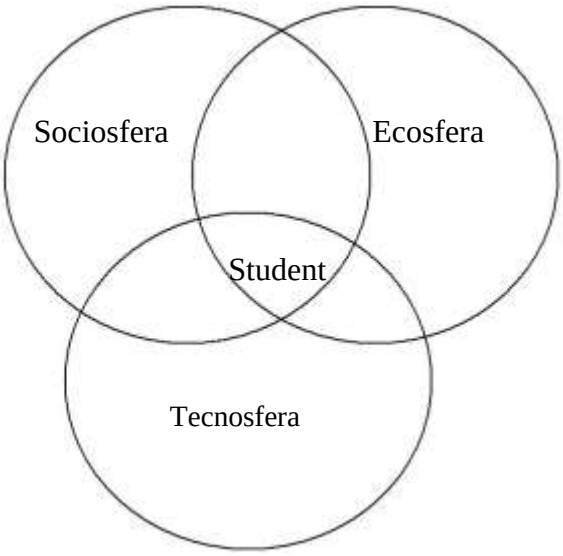

Figure 2: Model of Conceptual Systematic Change (Gardiner, 1989)

Based on the model presented by Gardiner (1989), Zandvliet (1999) developed a model with review of the physical and psychosocial environment in the classroom with technology. According Zandvliet (1999) in educational situations, Gardiner model can be modified with the classroom physical environment as ecosfera, classroom psychosocial environment as sociosfera and implementation of new educational technologies represent tecnosfera component in this model

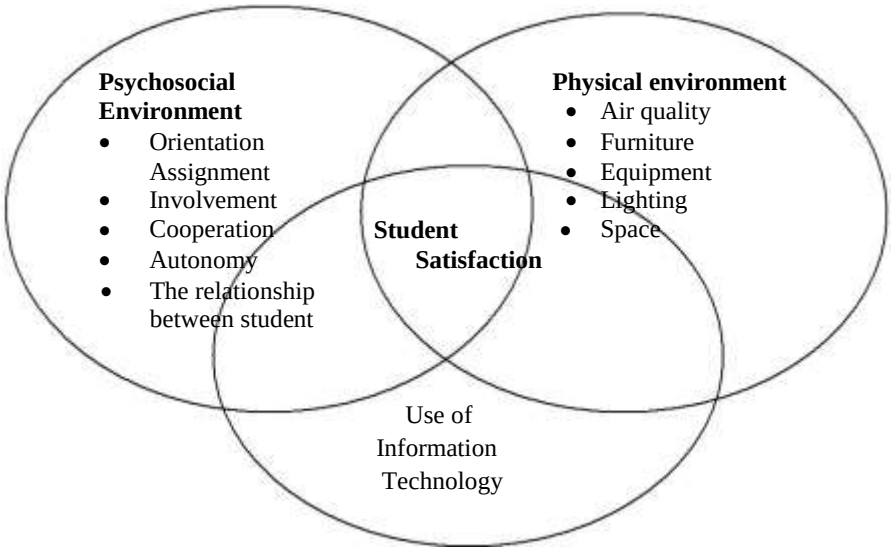

Figure 3:Model Representation Schematics Productivity Education (Zandvliet, 1999)

Zandvliet (1999) also put forward another model as a result of a study conducted on high-tech learning environment. This model showed a correlation between the physical environment and the psychosocial environment and argued that physical factors in the

classroom environment may contribute to student satisfaction (through relationships with psychosocial variables). The model also suggested that by manipulating the physical factors (such as technologies, lighting and workplaces) that influence the overall classroom environment, increase productivity in education for students to acquire experiences expected. See the model below:

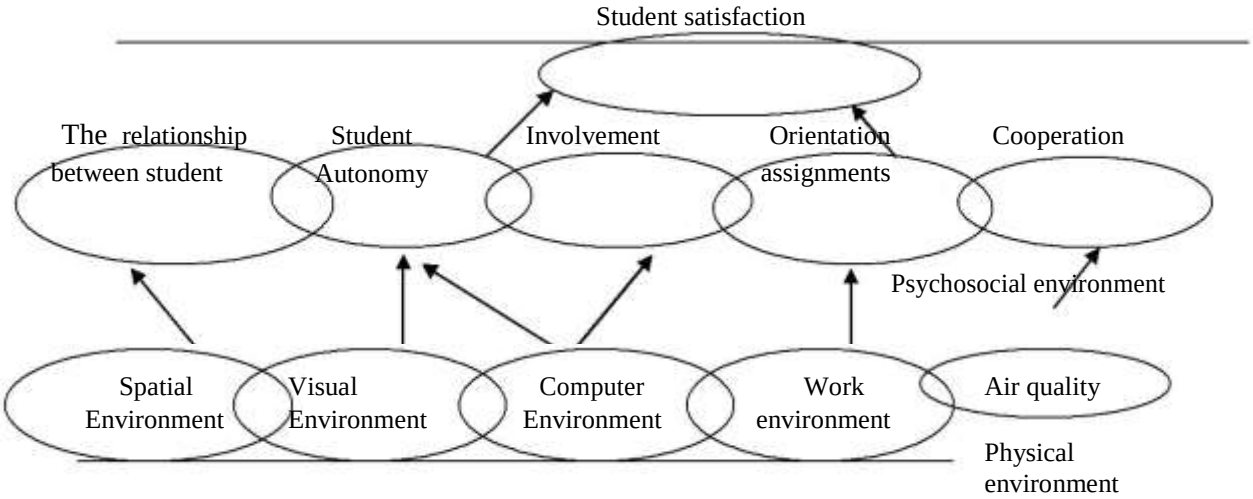

Figure 4: Model of correlation between the physical environment and the psychosocial environment (Zandvliet, 1999)

According to BC Campus (2018) developing a total learning environment for students in a particular course or programme is probably the most creative part of teaching, while there is a tendency to focus on either physical institutional learning environments (such as classrooms, lecture theatres and laboratories), or on technologies used in the learning environments with the following to be taken into absolute consideration.

1. The characteristics of the learners;
2. The goals for teaching and learning;
3. The activities that will best support learning;
4. The assessment strategies that will best measure and drive learning
5. The culture that infuses the learning environment

Psychosocial Teaching and Learning Environment

University of Bergen (2017) posited psychosocial learning environment to cover psychological and social factors that have consequences for satisfaction, health and ability to perform at the place of study. This includes interpersonal cooperation and communication and protection against harassment and mental harm. The social environment, culture and welfare help to promote a good psychosocial learning environment.

What is a Healthy Psycho-Social Environment?

Freshtools for effective school health (2018) postulated that schools` environment can enhance social and emotional well-being, and learning, when:

1. Is warm, friendly and rewards learning
2. Promotes cooperation rather than competition
3. Facilitates supportive, open communications
4. Views the provision of creative opportunities as important

5. Prevents physical punishment, bullying, harassment and violence, by encouraging the development of policies and procedures that do not support physical punishment and that promote non-violent interaction on the playground, in class and among staff and students.
6. Promote the rights of boys and girls through equal opportunities and democratic procedures. A healthy psycho-social teaching and learning environment simultaneously provides support to teachers, students and their families.

It creates awareness among teachers, managers and students about the importance of a healthy psycho-social environment at school; and helps one identify the positive characteristics of your school environment as well as those which could be improved. The Psycho-Social Environment (PSE) profile looks at conditions within the school, on the school grounds, after-school activities and during travel between school and home. It assesses the following seven "quality areas", each representing an important element of a healthy psycho-social environment at school:

1. Providing a friendly, rewarding and supportive atmosphere
2. Supporting cooperation and active learning
3. Forbidding physical punishment and violence
4. Not tolerating bullying, harassment and discrimination
5. Valuing the development of creative activities
6. Connecting school and home life through involving parents
7. Promoting equal opportunities and participation in decision-making.

The below four areas in the model encourages a psychosocial teaching and learning environment. Human Kinetics (2018) said the following are some of the psychosocial characteristics of positive teaching and learning environment

1. Students feel physically and emotionally safe. They see the classroom as a place where they can be themselves and express themselves and their ideas without judgment
2. Students know that they are valued and respected, regardless of other factors such as ability, gender, sexuality, race, ethnicity, or religion
3. Students have ownership and input related to class structure and expectations. This can range from creating spaces specifically for student use to having a class discussion to establish norms and expectations
4. All students are challenged to achieve high expectations, and all students receive the support necessary to meet those expectations
5. Standards of behaviour are established and are consistently and equitably enforced for all students
6. Class structure provides multiple and varied opportunities for students to experience success
7. The teacher gets to know all students and uses that knowledge to create meaningful experiences
8. There is a positive rapport (relationship) between the teacher and students and among students in the class

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Challenges and Solutions of Teaching and Learning Environment

Osunde and Ogiegbaen (2005) noted lack of infrastructure facilities that are associated with student's poor achievement and poor physical environment experiences.

Ohakamike-Obeka (2016) observed the following environmental deficiencies in Nigerian schools leading to poor experiences acquisition

1. Many schools, especially those in urban areas are located in areas where there is a busy movement and activities of many people causing noise pollution.
2. Many schools have dilapidated buildings with leaking roofs and cracked walls.
3. Also, most of the schools, especially those in urban areas are overcrowded with some classrooms housing as many as 70 to 100 students.
4. There is inadequate electricity in majority of the schools.
5. It was also observed that most of the schools do not have adequate staff rooms and offices.
6. Most of the schools have good libraries and where they are available; there were scarcity of current books in the shelves.

Physical aspects of teaching and learning environment should be optimized to enhance the effectiveness of learners' experiences. By ensuring the physical teaching and learning environment is in good condition and meet the needs of teachers and students it lead to acquiring of environmental teaching and learning experiences as well as academic environment sustainability.

Statement of the Problem

The academic environment is an integral part of the society, so is OTM programme is an essential part of the academic environment. However, there seems to be physical and psychosocial environmental challenges facing the acquiring of OTM programme experiences in the academic environment. It is on this foundation that this study is carried out to find out and proffer solutions to the challenges of acquiring environmental teaching and learning experiences of OTM programme to enable sustainability of OTM programme in specific and the society in general.

Purpose of the Study

The Purpose of the Study was to Investigate Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme in Rivers State. The study specifically sought to:

1. Find out the level of challenges of acquiring environmental teaching and learning experiences of OTM programme
2. Find out the level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme

Research Questions

To lead this study, the following research questions are posited

1. What are the level challenges of acquiring environmental teaching and learning experiences of OTM programme?
2. What are the level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme?

Hypotheses

Two null hypotheses were formulated and tested at 0.05 levels of significance

1. There is no significant difference between the mean responses of group A students and group B students on the level of challenges of acquiring environmental teaching and learning experiences of OTM programme
2. There is no significant difference between the mean responses of group Astudents and group B students on the level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme

METHOD

This study adopted a survey research design. This is because it focused on factual information about the variables under investigation and the collection of opinions of the respondents. The population of the study was drawn from Captain Elechi Amadi and Ken-Saro-wiwa Polytechnics of NDII, HNDI and HNDII numbering 596 students of OTM programme. The reason for excluding NDI students was because they may not be able to adequately express their opinions concerning the variables under investigation since the programme is new to them. The population is as displayed below using exploded pie-in-3D:

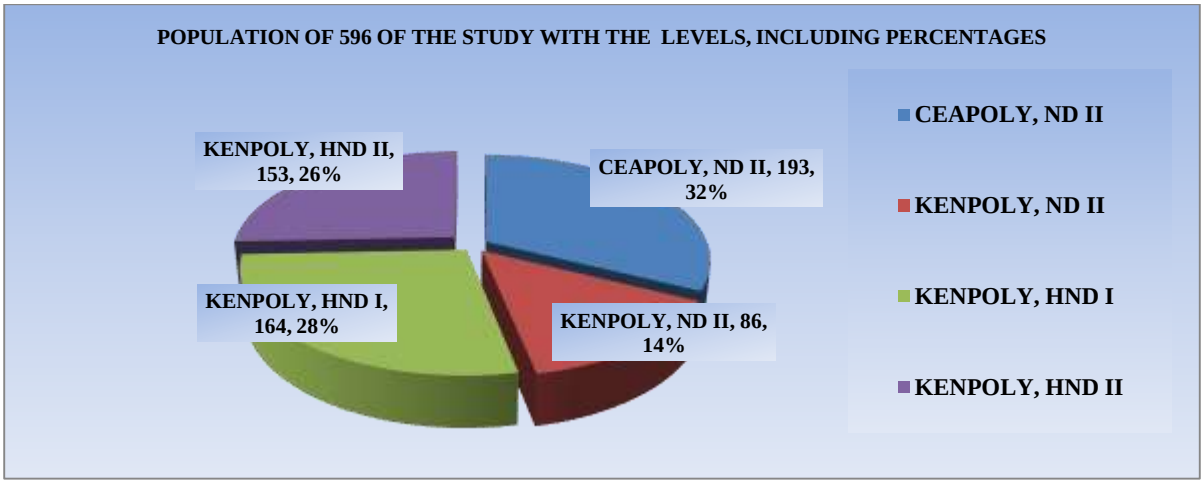

Figure 5: Population of the Study with the Levels, including Percentages

The sample technique used was 234 using Krejcie and Morgan (1970) table of determining the sample size from a known population of 596 (Google.com, 2018). The study also adopted Point Estimation to draw conclusion about the population of the study using the mean of the sample size. The sample of the study is as displayed using exploded pie in 3-D:

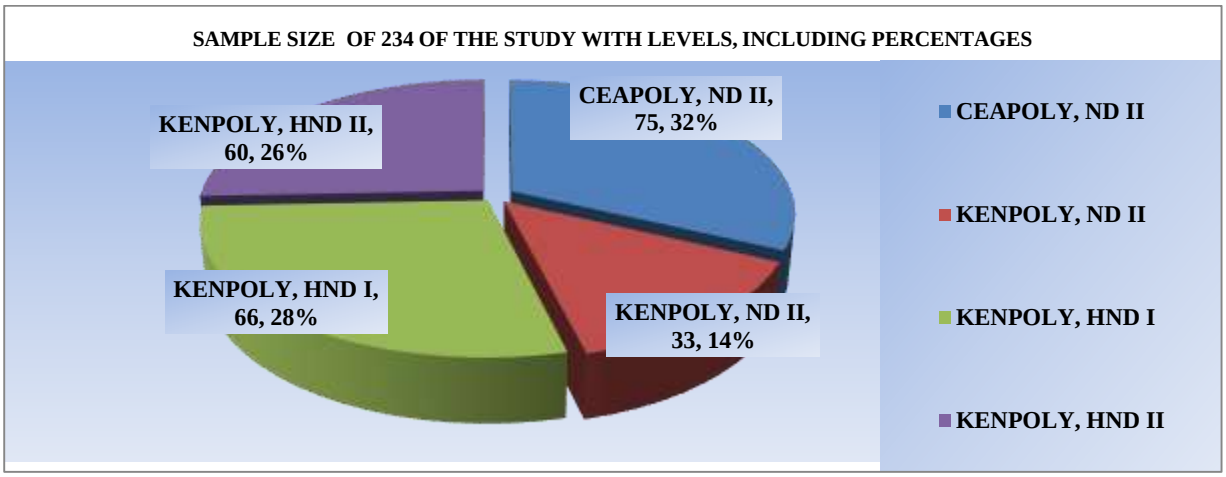

Figure 6: Sample size of the study with levels, including percentages

The research instrument used for gathering data was a structured questionnaire entitled "challenges and solutions of acquiring environmental teaching and learning experiences", (CASAETALE). A five point scale was adopted. Mean scores from 4.50 to 5.00 was seen as Very High Level of Challenges (5 points), 3.50 to 4.49 High Level of Challenges (4 points), 2.50 to 3.49 Moderate Level of Challenges (3 points),1.50 to 2.49 Low Level of Challenges(2 points) and 0.50 to 1.49 Very Low Level of Challenges (1 point).

The instrument was subjected to face and content validation by three experts from department of Office Technology and Management, Captain Elechi Amadi Polytechnic (CEAPOLY). The modifications, corrections and inputs of the experts formed the validity of the instrument for this study. To ascertain the reliability and consistency of measurement, a pilot study was carried on 12 OTM students of Federal Polytechnic, Nekede which yielded a coefficient of 0.85 using Pearson Product Moment Correlation. The confidence level was 95%; Error of Margin was 5% with a population of 596. A total of 234 copies of questionnaire were administered and 132 successfully retrieved. The breakdowns are as tabulated below.

Table 1: Copies of Questionnaire Distributed and Retrieved from the Respondents

SN	Name Of The Polytechnic	ND/HND Level Sampled	No. Distributed	No. Retrieved /%	Total No. Retrieved/ %
1	CEAPOLY	ND II	75	42 = 32%	
2	KENPOLY	ND II	33	19 = 14%	
	KENPOLY	HND I	66	37 = 28%	
	KENPOLY	HND II	60	34 = 26%	
	TOTAL		**234 = 100**	**132 = 100%**	**132 = 100%**

Source: Field Survey (2019)

Mean statistics was used to analyse the research questions and Standard Deviation used to find out the extent in which scores in the distribution clustered around the means. T-test was used to analyse the hypotheses. Point Estimation statistics was also adopted to draw inference about the population of the study.

RESULTS

Research Question 1:

What are the level challenges of acquiring environmental teaching and learning experiences of OTM programme?

Table 2: Computed Mean and Standard Deviation on the Level Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

N = 132

SN	Items Statements	X	SD	SE	Remark
1	Lack of facilities	4.2	0.84	0.1	HLC
2	Dilapidated buildings	4.1	0.82	0.3	HLC
3	Leaking roofs	4.3	0.86	0.3	HLC
4	Overcrowded classrooms	4.2	0.84	0.1	HLC
5	Inadequate electricity	4.2	0.84	0.1	HLC
6	Inadequate staff rooms &offices	4.1	0.82	0.3	HLC
7	Inadequate / irregular lighting	4.3	0.86	0.3	HLC
8	Poor public toilets	4.4	0.88	0.3	HLC
9	Insecurity within and around premises	4.2	0.84	0.1	HLC
10	Noise pollution	4.2	0.84	0.1	HLC
	Grand Mean	**4.2**			HLC

Survey, (2019)

In analysing research question one, the grand mean of items numbered 1-10 on table 2 showed 4.2, representing High Level of Challenges of acquiring environmental teaching and learning experiences of OTM programme in the polytechnics. This is accepted because it is above the benchmark of 3.0 (Moderate Level of Challenges). This means that there was high level of challenges of acquiring environmental teaching and learning experiences in OTM programme. The highest Standard Deviation was 2.0 this indicated closeness in the views of the respondents. The highest Standard Error was 0.3 and the least was 0.1, these are very low, showing a true sample mean of the data used as drawn from the population of the study. Using Point Estimation, the mean of the sample from the population was 23.

This means that every 23 out of 234 sample of the population of 596 of the study, agreed that the items listed on table 2 of this study above are some of the things causing high level of challenges of acquiring of environmental teaching and learning experiences in OTM programme in the polytechnics

Research Question 2:
What is the level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme?

Table 3: Computed Mean and Standard Deviation on the level of Solutions to Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

N = 132					
SN	Items Statements	X	SD	SE	Remark
1	Availability and adequate facilities	4.1	0.82	0.3	HLS
2	Good modern buildings	4.3	0.86	0.3	HLS
3	Air conditioned classrooms And standard school plan	4.4	0.88	0.3	HLS
4	Moderate population in classrooms	4.2	0.84	0.1	HLS
5	Adequate/ regular electricity	4.2	0.84	0.1	HLS
6	Adequate staff rooms and offices	4.2	0.84	0.1	HLS
7	Availability of sports facilities	4.1	0.82	0.3	HLS
8	Availability/good public toilets	4.3	0.86	0.3	HLS
9	Adequate security system	4.2	0.84	0.1	HLS
10	Quiet environment	4.2	0.84	0.1	HLS
	Grand Mean	**4.2**			HLS

Survey, (2019)

In analysing research question two, the grand mean of items numbered 1-10 showed on table 3 showed 4.2, representing High Level of Solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme in the polytechnics. This is accepted because it is above the benchmark of 3.0 (Moderate Level of Solutions). This means that, those items numbered 1 - 10 are high level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme. The highest Standard Deviation was 2.0 which clustered around the mean and indicated closeness in the views of the respondents. The highest Standard Error was 0.3 and the least was 0.1, these are very low, showing also a true sample mean of the data used as drawn from the population of the study. Using Point Estimation, the mean of the sample from the population was 23. This means that 23 out of every 234 respondents of the population of 596 of the study agreed that the items listed on table 3 above are some of the things that are of high level of solutions to challenges

of acquiring of environmental teaching and learning experiences in OTM programme in the polytechnics.

HO₁: There is no significant difference between the mean responses of group A students and group B students on the level of challenges of acquiring environmental teaching and learning experiences of OTM programme

Table 4: Summary of Calculated T-test of Group A and Group B Students on the Level of Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

S/N	SCHOOL	GROUP	MEAN	SD	N	DF	SE	T-CAL.	T-TAB.	DECISION
1	CEAPOLY	A	4.2	0.82	132		0.1			
										ACCEPTED
2	KENPOLY	B	4.1	0.82	132		0.1			
						130		**0.232**	**1.960**	

Survey, (2019)

Decision

From the summary T-test of table 4, for null hypothesis one, the calculated t-test 0.232 was less than the critical table value of 1.960. Because the calculated t-test value of 0.232 was less than the table value of 1.960, the null hypothesis which stated that there was no significant difference between the mean responses of group A students and group B students on the level of challenges of acquiring environmental teaching and learning experiences of OTM programme is accepted. This means that there is no difference between the opinions of groups A (CEAPOLY) students and group B (KENPOLY) students on the level of challenges of acquiring environmental teaching and learning experiences in OTM programme. This means that the students of the two schools are faced with similar environmental teaching and learning challenges of OTM programme in the areas as stated on table 2. It also means that the items on table 2 are some of the things responsible for challenges of acquiring environmental teaching and learning experiences. Please see table 2 for the challenges affecting the acquiring of environmental teaching and learning experiences of OTM programme in the two polytechnics.

HO₂: There is no significant difference between the mean responses of group A students and group B students on the level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme

Table 5: Summary of Calculated T-test Between Group A and Group B Students on the Level of Solutions to Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

S/N	SCHOOL	GROUP	MEAN	SD	N	DF	SE	T-CAL.	T-TAB.	DECSION
1	CEAPOLY	A	4.2	0.84	132		0.1			
										ACCEPTD
2	KENPOLY	B	4.2	0.84	132		0.1			
						130		**0.170**	**1.960**	

Survey, 2019

Decision

From the summary T-test table for null hypothesis two, the calculated t-test of table 4, 0.170 was less than the critical table value of 1.960. Because the calculated t-test value of 0.170 was less than the table value of 1.960, the null hypothesis which stated that there is no significant difference between the mean responses of group A (CEAPOLY) students and group B students (KENPOLY) on the level of solutions to acquiring environmental teaching and learning experiences of OTM programme is accepted. This means that there is no difference

between the opinions of groups A students and group B students on the level of solutions to challenges of acquiring environmental teaching and learning experiences in OTM programme. This means that the students in the two schools agreed that the items listed on table 4 are some of the solutions to the challenges of acquiring environmental teaching and learning experiences of OTM programme in the two polytechnics.

DISCUSSION OF THE RESULT/FINDINGS

Level Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

A thorough observation of table 2 and null hypotheses 1 showed a grand mean of 4.2, representing High Level of Challenges of acquiring environmental teaching and learning experiences, the computed t-test value of 0.232 was less than (<) the critical table value of 1.960 at 0.05 significant levels. This means that there was high level of challenges of acquiring environmental teaching and learning experiences in OTM programme. This also means that the students of the two polytechnics of group A and group B agreed that those items stated on table 2 of this study are the challenges of acquiring environmental teaching and learning experiences of OTM programme in the two polytechnics. Also, because the computed value of t-test was less than the critical table value, the null hypothesis which stated that there is no significant difference in the opinions of group A students and group B students on the challenges of acquiring teaching and learning experiences is accepted.

This actually means that the students in the two polytechnics have the same opinion and agreed that the items on table 2 are challenges affecting the acquiring of environmental teaching and learning experiences of OTM programme in the polytechnics.

The opinion of the respondents was in agreement with Akpotohwo (2014), Osunde and Ogiegbaen (2005) who identified lack of infrastructure, equipment, human resources, laboratories, studios and facilities as associated with student's poor achievement and poor physical environment experiences. Ohakamike-Obeka (2016) also observed the following environmental deficiencies in Nigerian schools leading to poor experiences acquisition:

1. That many schools, especially those in urban areas are located in areas where there is a busy movement and activities of many people causing noise pollution.
2. Many schools have dilapidated buildings with leaking roofs and cracked walls.
3. Also, most of the schools, especially those in urban areas are overcrowded with some classrooms housing as many as 70 to 100 students.
4. There is inadequate electricity in majority of the schools.
5. It was also observed that most of the schools do not have adequate staff rooms and offices.
6. Most of the schools have good libraries and where they are available; there were scarcity of current books in the shelves.

Solutions to Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

A thorough observation of table 3 and null hypotheses 2 showed a grand mean of 4.2, representing High Level of Solutions to challenges of acquiring environmental teaching and learning experiences, the computed t-test value of 0.170 which is less than (<) the critical table value of 1.960 at 0.05 significant levels. This means that there is high level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme. It actually means that those listed items on table 3 are the solutions to challenges of acquiring environmental teaching and learning experiences in the two polytechnics under investigation. Also, because the computed value was of t-test 0.170 less than the critical table value of 1.960, the null hypothesis which stated that there is no significant difference in the opinions of group A students and group B students on the solutions to challenges of acquiring teaching and learning experiences was accepted.

This means that the respondents did not differ in their opinions on the items stated on table three as solutions to challenges of acquiring environmental teaching and learning experiences in the polytechnics. Meaning that, the respondents both agreed that those are the solutions to environmental teaching and learning experiences of OTM programme in the polytechnics.
The view of the respondents were not different from (Fraser, 1994; Kilgour, 2006), (Zandvliet, 1999) and (Gardiner, 1989) who argued that the physical environment component includes all physical aspects such as classrooms, teaching materials and learning facilities, both inside and outside the classroom. While psychosocial component is related to the interaction that occurs between students and students, students with teachers and students with the environment. They further stated that all of these components complement each other in creating and shaping the teaching and learning environment as it affect the learning process that occur in acquiring experiences in the areas of air quality, furniture, equipment, lighting, space, orientation, assignment, involvement, cooperation among students, space, autonomy, relationship between students and use of information technology as some solutions to challenges of environmental teaching and learning experiences of OTM programme the polytechnics.

CONCLUSION

Based on the findings of this study, it is concluded that there was high level of challenges of acquiring environmental teaching and learning experiences in OTM programme. There was also high level of solutions to challenges of acquiring environmental teaching and learning experiences of OTM programme as greed by the respondents from the two polytechnics and supported by the reviewed literatures. Meaning that, the problems identified can actually be solved with those solutions stated in the study to enable learners have a good environmental teaching and learning experiences in the polytechnics in Rivers State.

Recommendations

1. Government and concerned organizations should make appropriate and adequate teaching and learning environment, facilities and equipment for environmental teaching and learning experiences.

2. Management of higher institutions should create a safe and friendly teaching and learning environments to enable learners acquire environmental teaching and learning experiences
3. There should be regular training and retraining of lecturers for them to know their roles in creating a better environmental learning experience

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APPENDICS
Raw Scores from Respondents

Appendice 1

Computed Raw Scores on the Level Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

		N = 132					Total Number of Responses
SN	Items Statements	VHLC (5)	HLC (4)	MLC (3)	LLC (2)	VLLC (1)	
1	Lack of facilities	60	50	20	2	0	564
2	Dilapidated buildings	50	50	30	2	0	542
3	Leaking roofs	70	40	20	2	0	574
4	Overcrowded classrooms	60	50	20	2	0	564
5	Inadequate electricity	60	50	20	2	0	564
6	Inadequate staff rooms & offices	50	50	30	2	0	544
7	Inadequate / irregular lighting	70	40	20	2	0	574
8	Poor public toilets	70	40	20	2	0	574
9	Insecurity within and around premises	60	50	20	2	0	564
10	Noise pollution	60	50	20	2	0	564

Survey, (2019)

Appendice 2

Computed Raw Scores on the level of Solutions to Challenges of Acquiring Environmental Teaching and Learning Experiences of OTM Programme

		N = 132					Total Number of Responses	
SN	Items Statements	VHLS (5)	HLS (4)	MLS (3)	LLS (2)	VLLS (1)		
1	Availability and adequate facilities	50	50	30	2	0	544	
2	Good modern buildings	70	40	20	2	0	574	
3	Air conditioned classrooms And standard school plan	70	40	20	2	0	574	
4	Moderate population in classrooms	60	50	20	2	0	564	
5	Adequate/ regular electricity	60	50	20	2	0	564	
6	Adequate staff rooms and offices	60	50	20	2	0	564	
7	Availability of sports facilities	50	50	30	2	0	542	
8	Availability/good public toilets	70	40	20	2	0	574	
9	Adequate security system	60	50	20	2	0	564	
10	Quiet environment	60	50	20	2	0	564	

Survey, (2019)

Appendice 3
Table for Determining the Sample Size of Known Population

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*