Home and School Environmental Factors as Determinants of Students' Academic Performance in Physics in Senior Secondary Schools in Ekiti State, Nigeria

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Abstract

The study examined the home and School environmental factors as determinants of students' academic performance in Physics in senior secondary schools in Ado local government area of Ekiti State, Nigeria. Two research hypotheses formulated to guided the study. The study adopted the a descriptive survey of the expo-facto research type in which there was no treatment and manipulation of independent variable. It involves the collection of data from records. The targeted population for the study was all senior secondary class two (SS II) Physics students in all the public senior secondary schools in Ado Local Government Area of Ekiti State, Nigeria. A total of one hundred and eighty (180) respondents, which were randomly selected from six (6) public secondary schools in Ado Local Government Area of Ekiti State, Nigeria, formed the sample (i.e 30 Physics students from each school). The sample comprises of one hundred (100) male and eighty (80) female. The instrument that was used for this research work is a well design questionnaire named: Home and School environmental factors as determinants of students' academic performance in senior secondary schools Physics students in Ado Local Government Area of Ekiti State. The instrument was subjected to validity and reliability mechanism. The test-re-test method of reliability was used. The two sets of data were analyzed using Pearson Product Moment Correlation (PPMC). The correlation coefficient of 0.86 as obtained which implies that the instrument is highly reliable for the study. The administration of the questionnaire was done. The data collected was subjected to statistical analysis of Pearson Product Moment Correlation test at 0.05 level of significance. Based on the findings the study, appropriate recommendations were made.

Keywords: Home, School, Environmental, factors, determinants, senior secondary schools.

Introduction

Education is the process through which a society perpetuates itself. It is a basic tool for the development and empowerment of members of the society. Education offers a platform for society to transmit its stock of knowledge, values and skills to future generations. Basically, education aims at promoting understanding and judgment, and enabling action. It equips the individual for decisions that improve the quality of life (Okoye, Okoye, Okoh, Ezeji, Omankhanlen & Onor, 2021); it also promotes literacy and awareness, and confers responsibility to make decisions which guarantee better life for individuals in particular and the economy in general.

The increasing school enrolment and students interests in learning from the best kind of environment has generated much research interest in order to put into use by private individuals mission, communities or government, proprietors an environment that will be stimulating and will enhance academic performance of students. Environment is a place where the child functions. This includes home, the school, the peer group, the classroom, the totality of the child's upbringing including his spiritual life, tissue needs, social needs, psychological needs it is defined not to mean only the place in which the child lives (physical) but also the people with which he comes in contrast with (social) (Odeh, Oguche & Ivagher, 2015).

At the early days of education, the primary goal was to educate the child, no matter the environment (Okoye, et al., 2021). This goal derives from the philosophy that something was better than nothing, which implies that any learning environment was better than no learning environment. As learning cannot take place in vacuum, any available environment was acceptable. However, with the growth in literacy rates across the globe over the years, there has been a paradigm shift by educational administrators to improvement in the quality of education, with great attention attached to the environment of education.

The environment is critical to the development of individuals in the society. In the school system, for instance, environment determines whether a child will be happy and ready to learn or become a deviant. The physical, social and psychological or emotional environments must be such that every aspect of human behaviour is warmly accommodated. Education is an important industry for social, political and economic development and it is affected by the environment within which it is conducted (Adediran, Ojomo & Adeyanju, 2015). The physical environment can determine the comfort of students and thereby their learning ability (Falsario, Muyong & Neuvaespana, 2014) in Okoye, et al. (2021). When students are uncomfortable, they are easily distracted and are not likely to learn faster than their peers whose environments are quite comfortable.

Wagner (2017) posits that students' behaviour towards academic performance can be determine through provision of an environment that balances and controls stimulants to the five human sensory organs: sight (what learners see), hearing (do they hear their teacher or noise from outside?), touch (is the temperature too hot or too cold?), smell (does the scent from deodorant or cleaning liquid support or disrupt learning?), and taste (there should be provision for food and drinks because hunger can disrupt learning). Wagner further alludes to substantial evidence that educational objectives like reading comprehension, multiplication and reading speed can be influenced by the study environment.

According to Olufemi, Adediran & Oyediran (2018), students' academic performance is determine by several factors which include students' learning skills, school environment, home environment, parental background, peer influence, teachers' quality, learning resources and infrastructure, among others. The school environment, for instance, supports the acquisition of academic knowledge. School environment refers to the quality and characteristics of school life, both social and physical aspects of the school, which can positively promote behaviour, school achievement, and the social and emotional development of students. Proximity, accessibility and the peaceful nature of the environment of a school can encourage learning. UNESCO (2001) in Okoye, et al. (2021) posits that the Nigerian child is a product of several environments, all of which contribute to his development and learning process. A child comes from a home, attends a school, lives in a community and belongs to a larger society (such as a town, state, or a country).

Environmental factor is often described as a necessity in considering students' academic performance. According to Imeokparia (2018), school environment means the extent to which school settings promote student safety and health, which may include topics such as the physical plant, the academic environment, available physical and mental health supports and services, and the fairness and adequacy of disciplinary procedures, as supported by relevant research and an assessment of validity. Environmental factors can have impact on the developmental, social, emotional and physical health of students which may in turn determine their academic performances. The main components of environmental variables that determine academic performance include: location of school, school type and facilities. According to Chukwuemeka (2013) in Imeokparia (2018), one of the factors that determine academic performance is school location/site of the school. The location of school plays a crucial role in evaluating the learning outcomes. That is, it has a tendency of influencing the academic performance of students. Some schools are located in urban areas while others are in rural areas. It is sometimes perceived that schools located in urban areas have more access to educational resources compared to those in rural areas; and this have a way of influencing the teaching and learning process.

The school type may also have a role to play in students' academic performance. The term school type in this context is seen as an environmental factor and it is used in describing the nature of the school; whether it is mixed or single sex. The learning environment in a mixed school is not exactly same with what is obtainable in a single sex school. Students may be more motivated in an atmosphere that is competitive; especially the competition that involves opposite sexes. Regardless of the school type, there is still need for students to be taught with appropriate teaching facilities. Facilities have a way of reducing abstract concept into concrete form. That is, with facilities on ground, students may find it easy to assimilate classroom teachings and it has a tendency of enhancing the academic performance of the students. It is based on this orientation that teachers are always encouraged to utilize teaching aids (facilities) in their day to day teachings. Chukwuemeka (2013) in Imeokparia (2018) opines that schools must be equipped with adequate technological facilities such as textbooks, computer, visual and audio-visual aids, photographs and posters. Vikoo (2003) in Imeokparia (2018) sees instructional materials as anything that can be profitably employed to facilitate teaching and learning process. The author further stressed that a class without learning materials can lead to students' poor academic performance.

On other hand home environments also determine students' academic performance. The social upbringing of the child begins from home (family). It is the home that makes the child to identify himself with the society, culture, religion or social class. Thus the home continues to exercises a strong influence over the child's live and academic performance in the school. It has to be noted that homes differ in terms of their significances in the social orders. For instance, some have more prestige, money etc. while some have wider experience and knowledge of how to operate within the society or school environment. Anene, (2005) in Obeta (2014) states that the home is the single most significant environmental factor in enabling children to develop the trust, attitude and skills that will help them to learn and engage positively with the world- a process that starts at birth, if not before. It is the foundation from which babies and young children and youths can grow to achieve their full potential. Good home learning environment provides the love, security, simulation, encouragement and opportunities that help children to flourish. The quality of parent-child relationship is fundamental to children's longer–term development. Warmth, encouragement and an absence of hostility are key element in positive home environment. Obeta (2014) points out that as children grow beyond babyhood, a positive home learning environment provides social interaction, attention and activities which promote the development of positive attitudes to learning, as well as the acquisition of physical, intellectual, language, social and emotional skills. Research has established that parents' socio-economic background, including education and income, has a substantial impact on children's outcomes.

According to Obeta (2014), good education does not happen by chance. It is a product of effective teaching and learning coupled with the effort of the teacher, the school, the students, parents and their various environments.

Most families in our society seem not to give adequate attention to the education of their children. It appears some of the parents have wrong notion about the performance of their children, they do not know and seem to fulfill their role of guidance and encouragement in the child's performance in schools. Some people also have the notion that the mass failure or success in schools could be traced back to the teachers and the school authorities. While other people see socio-economic status of the family as an influence to the child's academic performance. However, some research works have revealed that the performance of the students is a joint effort of both the school authorities and that of the parents in different home and school environment.

Imeokparia (2018) ascertains that the factors that actually account for the academic performance of students seem not to be well articulated or reported in many literatures despite the importance of education in the socioeconomic development of the nation. The researcher is indeed worried as to what environmental factors as a determinant to students academic performance. Could these factors be school location? Could it be teaching facilities or school type? It is on the basis of this that the researcher intends to empirically investigate the extent to which environmental factors as determinants of students' academic performance in senior secondary schools in Ado Local Government Area of Ekiti State.

Research Hypotheses
The following hypotheses were formulated and tested at 0.05 level of significance:

Ho_1: there is no significant relationship between home environmental factors and students' academic performance in Physics in Secondary schools in Ado Local Government Area of Ekiti State.

Ho_2: There is no significant relationship between school environmental factors and students' academic performance in Physics in Secondary schools in Ado Local Government Area of Ekiti State.

Literature Review
Home environmental factors and academic performance of students in Physics
Motivating students to achieve set goals in school is of great concern to teachers, parents and researchers. A child's first educational experiences are centred in the homes; his ideas, attitude and general pattern of behaviour are as a result of his childhood rearing. The variation in the academic attainments of students could be related directly to differences in the home and its influence. For the purpose of this research, socio-economic status and family stability (i.e. Divorce, separation and single parenthood) was considered as 'home environmental factors'. Orlu (2013) in his investigation among four thousand (4000) primary and secondary children from Ibadan in Nigeria found that 88% of children from extended family situation were influenced by grandparents, aunts and uncles in discipline at home, 92% complained of lack of clear standard to follow, 91% complained of being unable to study at home because of their being sent on errands by relatives. The study also found out that 78% justified the need to lie as a means of escaping blames and punishments from all sides and 75% admitted regular stealing. The extended family system, the said appeared to be the less favourable than unclear family for the emotional and academic well being of the child. Some polygamous homes burden children with domestic duties that they had little time left for rest or study. In some cases the children from polygamous home were left to care for their younger ones, which prompted their inability to attend school. Evans as cited in Egwuche (1981) in Orlu (2013) notes that family size to a large extend determines the relative amount of physical attention and time which each child gets from his parents. Too many children in the home entail less amount of attention in terms of time available for each child. It is also possible that family size affects the level of intellectual quantity that the child brings into the classroom. Evidence from several studies suggests that a measure of intellectual quantity varies directly with the size of the family and that correlation cuts across social class line.

Orlu (2013) finds out that the greater the number of children in the family, the lower the measure of intellectual quantity of the subsequent children. The significant relationship between socioeconomic class and success in school has been shown by Fraser (1978) in Orlu (2013) she looks at socio-economic class as one of the major causes of unnatural inequalities in education. In most western countries, all types of public and private schools serve different social class. She further explained that inequality of educational opportunities results when there is dedicated competition to enter an institution and their need to pay high fees. Students from higher socio-economic classes are expected to perform better in schools. Orlu (2013) states that the most important determinants of academic performance in school associated with the family is socio-economic status.

He concluded by saying that his relationship of socio-economic achievement is always consistent, no matter whether our measure of status is occupation of the parents, education or both of them. On the whole, the child's background affects the school success. Also family stability has been found to exert serious effect on the child's education. Divorce, separation and single parenthood affect the children academic performance.

School environmental factors and academic performance of students in Physics
School environmental factors are the internal conditions of the school that determine students' academic performance. These are the school climate, facilities, and resources within the school that influence students' academic performance. Environmental factors largely determine both the physical and psychological potentials of an individual. This has led to the contention that many students fail to develop universally their potentials due to inadequate environmental stimulation.

Odeh et al. (2015) states that environment for the child includes a host of structures such as buildings, furniture's, equipments, instructional materials, the teachers, the peer group and other people involved in the development of a child. Booth & Okely (2005) looked at school environment as the physical environment (e.g. facilities and equipment), school policies (e.g. time allocated for Physical and Health Educational Sport) and school practices regulating PE and Sport, banners to participation and strategies to promote participation).

Onukwo (2004) in his note says that a conducive environment enhances a child's growth and development. Children feel happy in a peaceful and friendly environment where as schools sited in noisy urban streets are associated with deficits in mental concentration leading to student's poor performance. Noise is anything that interferes with teaching/learning process. Noise produces influence on children's information processing strategies, feelings of personal control as well as their level of arousal.

Hezekiah et al. (2020) indicates that staff office, classroom spaces for teaching students, and staff common room represented the major areas that largely determine academic performance of students in public schools with regard to buildings. The researcher further revealed that desks, current books, and use of library assistants constituted the areas of determinant on the academic performance of the students with regard to library services in the public secondary schools.

In addition, Odigwe & Idowu (2013) appraising the state of maintenance and management of available school facilities on students' academic performance, Nigeria found that there exists a correlation between provision, maintenance, and management of school facilities, on students' academic performance. Further, the assumption that insufficient school facilities negatively impact student performance and achievement is supported (Limon, 2016).

Availability of residential facilities in schools and instructional materials has a positive influence in determine the level of students' academic performance (Osei, Kate & Fentim, 2014) On their part, Norsuhaily (2015) in Hezekiah et al. (2020) also found out that students from a school with adequate facilities, good teachers and favorable environment perform well than those from schools with fewer facilities, unqualified teachers and the less enabling environment. Things like lack of infrastructure, dormitories, laboratories, library, staff houses,

and classrooms lead to poor performance in ward or community based secondary schools (Ilomo & Mlavi, 2016).

School facilities have been observed as a potent factor to quantitative education. The importance to teaching and learning of the provision of adequate instructional facilities for education cannot be over-emphasized. The dictum that "teaching is inseparable from learning but learning is not separable from teaching" is that teachers do the teaching to make the students learn, but students can learn without the teachers. According to Akande (1995) in Odeh et al. (2015), learning can occur through one's interaction with one's environment. Environment here refers to facilities that are available to facilitate students learning outcome. It includes books, audio-visual, software and hardware of educational technology; so also, size of classroom, sitting position and arrangement, availability of tables, chairs, chalkboards, shelves on which instruments for practicals are arranged (Odeh et al., 2015).

Methodology

The design was a descriptive survey of the expo-facto research type in which there was no treatment and manipulation of independent variable. It involves the collection of data from records.

The targeted population for the study was all senior secondary class two (SS II) Physics students in all the public senior secondary schools in Ado Local Government Area of Ekiti State, Nigeria.

A total of one hundred and eighty (180) respondents, which were randomly selected from six (6) public secondary schools in Ado Local Government Area of Ekiti State, Nigeria, formed the sample (i.e 30 Physics students from each school). The sample comprises of one hundred (100) male and eighty (80) female. Two null research hypotheses were formulated for the study.

The instrument that was used for this research work is a well design questionnaire named: Home and School environmental factors as determinants of students' academic performance in senior secondary schools Physics students in Ado Local Government Area of Ekiti State. It was designed by researchers along with the variables under investigation to elicit information base on the title of the study. The instrument comprises of two sections: Section A contains the Bio-data of the respondents which include name of school, gender, age, and class. Section B was used to obtain information on the research hypotheses. The questionnaire were in four likert scale which means Strongly Agreed = SA, Agreed = A, Disagreed = D, and Strongly Disagreed = SD.

The face and content validity of the instrument was done by the experts in physics education. The corrections pointed out were effected in the final draft of the questionnaire.

The reliability of the instrument was carried out on 20 respondents which are not part of the sample that was used for the study at two week interval. The test-re-test method of reliability was used. The two sets of data was analyzed using Pearson Product Moment Correlation (PPMC). The correlation coefficient of 0.86 as obtained which implies that the instrument is highly reliable for the study.

The researchers made personal contact with all the selected schools to administer the questionnaire and collected terminal continuous assessment score of SS II physics students to be used as academic performance. Adequate time was given to the respondents to responds to the questionnaire.

The data collected was subjected to statistical analysis of Pearson Product Moment Correlation test at 0.05 level of significance.

Results and Discussion

Hypothesis 1

There is no significant relationship between home environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State.

Table 1: Table of relationship between home environmental factors and students' academic performance in Physics

Variables	N	Mean	SD	r-cal	r-tab
Home environmental factors	180	18.20	1.33	0.596	0.250
student academic performance.	180	49.36	4.27		

P < 0.05, * = significant

Table 1 shows the relationship between home environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State. The result obtained from the analysis shows that the value of r-calculated (0.596) was greater than the value of r-table (0.250) at 0.05 level of significance.

Therefore, the null hypothesis is rejected. This means that there is significant relationship between home environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State.

Hypothesis 2

There is no significant relationship between school environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State.

Table 2: Table of relationship between home environmental factors and students' academic performance in Physics

Variables	N	Mean	SD	r-cal	r-tab
School environmental factors	180	21.75	3.40	0.687	0.250
Student academic performance.	180	49.36	4.27		

P < 0.05, * = significant

Table 2 shows the relationship between school environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State. The result obtained from the analysis shows that the value of r-calculated (0.687) was greater than the value of r-table (0.250) at 0.05 level of significance. Therefore, the null hypothesis is rejected. This means that there is significant relationship between school environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State.

Discussion of the Findings

The test of hypothesis one revealed that home environmental factors are potent for determining students' academic performance in Physics senior secondary schools in Ado Local Government Area of Ekiti State, Nigeria. The findings is in line with Dubey (1972) in Orlu (2013) who states that the most important determinants of academic performance in school associated with the family socio-economic status. He concluded by saying that his relationship of socio-economic achievement is always consistent, no matter whether our measure of status is occupation of the parents, education or both of them. On the whole, the

child's background affects the school success. Also family stability has been found to exert serious effect on the child's education. Divorce, separation and single parenthood affect the children academic performance.

Research hypothesis two sought to find out the significant relationship between school environmental factors and students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State. The finding indicated that the presence of recreational facilities in their school make them more committed to school; well-equipped laboratories will cater for their brilliant performance in practical; good looking classroom arrangement will draws them to class always; neat and satisfactory conveniences in their school will make them comfortable for studies; they always like to study in their school library to enhance their academic performance and adequacy of teaching materials helps in improving their academic performance in their school. The test of hypothesis two also revealed that adequate school facilities as determinant of students' academic performance. The study is in line with Hallak (1990) who agree that facilities form one of the potent factors that contributes to academic performance of students in the school system. They include the school buildings, classroom, accommodation, libraries, laboratories, furniture, recreational equipment, apparatus and other instructional materials. He went further to say that their availability, relevance and adequacy contribute to academic performance of students.

Conclusion

The purpose of this study is to examine home and school environmental factors as determinants of students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State, Nigeria. The study used descriptive survey of expos-fact research design.

The study found that home and school environmental factors are responsible for determinants of students' academic performance in Physics in senior secondary schools in Ado Local Government Area of Ekiti State, Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

Parents should endeavor to encourage and give their children/wards adequate time to read and do their home works at home rather than engaging them with domestic works and watching of non educational movies most of the time.

Parents should make out time to reach out with their children's teachers from time to time to update them with their children's academic progress. This will help identify the student's academic problems so as to handle it promptly before it affects the students.

That education manager, particularly in the public education sector, through the inspectorate unit of the Ministry of Education should ensure that learning supportive school environments are in place. For instance, schools should be located in low noise areas and there should be adequate open spaces for students to operate, classroom temperature should not be disruptive to teaching and learning, paintings should be moderate, and scent from deodorants and or cleaning liquids should not be offensive.

Adequate facilities have been adjudged to enhance or contribute to students academic performance, it is therefore recommended that government should ensure upgrade, renovation and provision of adequate facilities in secondary school so as to reinforce students' commitment to academic performance.

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