
EFFECTS OF LEARNING ENVIRONMENT ON STUDENTS PERFORMANCE IN GEOGRAPHY

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Abstract

The study was basically undertaken in order to find out the effect of learning environment on students performance in geography. The cross-sectional research design and the pre-test post-test experimental design were adopted for this study. Three research questions and one hypothesis were used. The teachers Questionnaires and Students Test Item (STI) 1 and 2 were the instrument used for the collection of data and were subjected to expert judgement. Out of a population 121 SS III Geography students, 20 were selected as the sample of students while all the ten teachers were used for the study. The researcher distributed and collected back the questionnaire after a period of two weeks. The 20 students were tested after two weeks intervention programme. The data created were analysed using simple percentage and students t-test statistics. The analysis indicates that, the interaction of students with the learning environment does not significantly affect their performance in geography. Large class size, insufficient teaching period, insufficient teaching materials and unavailability of laboratory were challenges encountered by teachers in making a conducive classroom. It was recommended that a well-equipped Geography laboratory is to be provided in all schools.

Introduction

Over the years, there has been a consensus amongst psychologists that the environment has tremendous influence on the development of the individual. There is persuasive evidence that the environment controls the expression of 40 – 70% of certain traits (Jenseen, 1998). Therefore, educators have to strive to enrich the learning environment in order to optimize learning for all students.

It is then necessary to develop different instructional alternatives – different approaches to a topic or activity, different organization of content to provide a variety of media and materials, all in the hope of enriching learning environment and helping students learn better. Brain researchers have found that any form of enriching the learning environment has a significant effect on the physiology of the brain and those students who learn in challenging environments show more brain growth than students who go through school without challenges. (Healy 1990 and Diamond 1998).

In Agulanna's (2002) view, students could be challenged through problem solving. Students should therefore be given the opportunity to engage in a variety of approaches to solving problems, and are to be exposed to a variety of learning experiences that will provide opportunities for them to develop their mental capabilities to issues.

The learning environment, according to Idowu (2002), cuts across the home, school, psychological, social, technological and cultural environments. Also, a good learning environment is described by Bulus (2002) to include anything that influences learning after hereditary pattern has been revealed. These could be persons, objects, natural phenomena, places, events, or technology. Bulus went further to group these factors into: Physical Environment, Social Environment, Psychological Environment, Political Environment and Technological Environment.

However, whatever the method of learning, the age old function of the teacher to instruct, guide and to enlighten the student still remains an important pillar of the educational system. His skills and experience remain a major determinant to inspire interest, motivate change and reinforce positive learning attitudes in the students.

Students need to be motivated to learn through involvement in activities that are captivating in nature. Their good acceptable behaviour, either inside or outside the classroom should be reinforced in order to build confidence in them. Motivation according to Ebenebe and Unachukwu (1995) "embodies all those factors which increase and decrease the vigour of an individual's activity – what teachers, often refer to as effort". They further mentioned that, the willingness to put effort into learning is a product of many factors. These factors range from the student's personality and abilities to characteristics of particular learning tasks, incentives for learning and settings.

From the foregoing, it is worthy to note that a well-organised educational programme for any school has to take serious cognizance of the

student, the classroom materials to be used, over all setup of the supervisory authority, the course content, method of teaching, etc. All these have to be provided in their correct proportion in order to produce a conducive environment for optimal learning to take place. A conducive environment reduces the task of the teacher and promotes an atmosphere for optimal learning.

A supportive learning environment also takes care of the problem faced by the teacher regarding individual differences in the students. Teaching resources, teachers' skill, curriculum, physical condition and design of the school facility itself plays a vital role in a student's education. Any attempt to compromise any of these conditions means an attempt to produce an unsuitable place for learning and the implication is a poor performance on the part of the students.

The foregoing suggests that it is necessary to create suitable conditions that will foster learning in the classroom. The classroom when well stocked with sufficient and adequate materials, qualified teachers with a reasonable class size and good physical condition becomes highly conducive for learning. With the ever increasing growth in student population both in terms of number and diversity, classrooms become over-crowded. This implies a continuous diversifying of teaching styles to encompass students' diverse cultural needs (Damar, 2004).

Effectiveness in a geography class requires the use of a conducive classroom, a classroom that is stocked with geographical facilities – both two and three dimensional, and with materials both natural such as rock samples and improvised – such as the globe that represents the earth. This implies that, there is need for a special classroom that is reserved for the teaching/learning of geography for proper maintenance of the facilities.

When the provision of materials are being followed by the use of variety of teaching styles and other required teaching principles as well as having a small class-size (students population) teaching becomes effective and a meaningful learning realized (Damar, 2004).

Based on this paper, learning environment refers to everything in the learners surrounding (the classroom) that is capable of effecting a change in the behaviour of the learner in which ever direction. They could be physical materials such as charts, maps samples etc. or they may be human beings, either teachers or students. These materials are referred to as environmental factors in the environment. The learner is always interacting with them and through that, he/she is able to learn something that is either useful or useless to the society. The interaction between the learner and the learning environment could be in form of manipulation of the materials in the classroom or on the field or it could be in form of presentation by the teacher in the classroom or by the students themselves. This implies that, learners found in the same environment tend to exhibit some traits or behaviours that are almost the same based on what is presented to them in that very environment, although there are exceptions or extreme cases. Therefore, the

environment should be carefully and properly arranged such that learning becomes meaningful and worthwhile.

The Problem

The inadequate provision of learning aids in relation to the very large class size makes their use and application in teaching impossible. This hampers the assimilation of learning by the students and reduces the efficiency of the teacher.

The skills of the teacher in imparting knowledge and adding variety to teaching methods is related to the provision of teaching facilities as it is to the size of his classroom. The larger the size, the larger the number of the various teaching aids he has to employ. Also the larger the class, the harder it is for the teacher to individualise learning as such the students are left at different levels of assimilation at the end of each class.

In addition, even with the advancement and the new developments in science and technology, most schools are still in the old-stone age. Their students are yet to be introduced to the audio-visual materials such as the computers. To some schools, the condition is even as worse as not acquiring the visual materials for teaching.

The teaching and learning of geography is done in the general classroom where non of the materials needed are present. The required materials are not brought into the classroom not even to think of the materials being put into use. Students receive lessons without teaching aids or anything of that, so therefore, learning becomes difficult.

Field-trip is also a serious matter in most schools. Topics that require students taken out for field trips are being taught in the classroom and so students are denied the practice that is involved thereby making such knowledge to be abstract to the students. Such students are denied the benefit achieved in exposure to any practical task.

From the forgoing, what then is the effect of learning environment on senior school students' performance in geography? The effects, whether positive or negative will only be discovered when a research is carried out.

Purpose of the study

The purpose of the study is to find out the effects of learning environments on secondary school students' performance in geography in Plateau State. Specifically, this study aims to achieve the following objectives:

- i. To establish the relationship between students interaction with the learning environment and their performance in geography.
- ii. To find out the number of students offering geography in secondary schools in the study area.
- iii. To find out the challenges involved in making conducive classroom.
- iv. To find out ways to overcome the challenges in IV.

Research Questions

The following research questions were to be answered.

- i. What is the number of students studying geography in SS III in the schools selected?
- ii. What challenges are involved in putting together a conducive learning environment for geography students?
- iii. What could be the possible ways of overcoming the challenges in (II) above?

Hypothesis

- i. Students' interaction with the learning environment does not have a significant effect on their performance.

Methodology

Research design

The designs adopted for this study are the cross-sectional surveys and a pretest – post-test control group design with matching. The cross-sectional survey design enables the researcher to obtain information from the ten sample of teachers while the experimental design was used to obtain data from the sample of students.

Population of the study

The population of the study comprises of all the geography teachers in four selected schools (schools 1,2,3 and 4) and all the SS III geography students from school I. The sample comprised of the ten teachers and twenty students drawn from school I.

The twenty SS III students were shared equally into two groups (Group A is the experimental group while Group B is the control group) through the use of a pretest.

The four schools were purposely selected for convenience for the collection of data by the researcher. While school I was selected from the four schools through the use of simple random sampling technique. The simple random sampling technique was used for the selection of the twenty students while the pre-test was used to share the students into the two groups.

Instrument for data collection

Three instruments were utilized for this research work: -

- i. The questionnaire – It is titled "Teachers Questionnaires. The questionnaire was divided into three sections; section A has an item on class-size, section B has an item on challenges of making a conducive classroom while section C has an item on possible ways of overcoming the challenges.
- ii. The intervention programme (treatment). The intervention is the learning environment. There were two learning environments: the first one (known as learning environment A) is a classroom containing teaching aids such as rock sample representing each

type of rock, pictures showing the rock types hanged on the wall, well-arranged desk and chairs and writing materials (mathematical sets). The second environment (known as learning environment B) was a classroom containing just chalkboard desk and chairs.

- iii. The third instrument is the Students Test Item (STI) 1 and 2. STI 1 contains two test items, testing general knowledge in geography and was used for the pre-test. While STI 2 contains items on the topic used for the two weeks teaching period. This instrument contains two essay questions for the student to respond to for one and half hours (1½ hrs).

Validation of the instrument

The instrument were subjected to expert judgement. Experts from the field read through and make corrections and adjustments.

Procedure for data collection

The Teachers Questionnaires were distributed to the respondents and they were given two weeks to respond to the items before returning them to the researcher. Ten questionnaires were given out and all were returned.

The experimental group received their lessons in learning environment A where the teaching of rocks goes on with the presentation of the teaching aids. Each desk contains all the three types of rock samples while the pictures were passed round for the students. They used the mathematical instrument to write and draw the diagrams of rock formation as demonstrated by the research assistant.

The control group received their lesson in learning environment B where nothing was presented to them apart from their pen and exercise book. The research assistant only explained and draws the diagram of the formation of rock types as demonstrated on the chalkboard.

At the end of two weeks, the two groups were given a test using the STI 2. The result obtained was analysed and conclusion drawn and decision taken.

Instrument for data analysis: The simple percentage was used to analyse the data gathered from the teachers questionnaires. The data was used to answer the research questions. While the students t-test was used to analyse the data gathered from the students Test Item 2. This was used to test the hypotheses raised.

Result Analysis and Discussion

The information on tables 1 and 2 were used to answer research questions 1 and 2 respectively.

Research question 1: What is the number of SS III students studying geography in a school selected?

Table 1 population of SSIII geography students from the four schools

Schools	Population
1	121
2	80
3	95
4	153

Based on table 1, all the schools selected for this study experienced high number of SSIII students offering geography. School 1 has a population of 121, schools 2 has 80 students, school 3 has 95 students while school 4 has 153 students.

Research question 2: What challenges are involved in putting together a conducive classroom?

The challenges are presented on table 2.

Table 2: This table shows responses of teachers on challenges faced in making a conducive classroom?

Challenges	Responses	
	Frequency	Percentage
Large class-size experienced	10	100%
Short period to cover the curriculum	8	80%
Short period to embark on any practical task	8	80%
Insufficient materials – teaching aids	6	60%
No geography lab	10	100%

The information on table 2 indicates the percentage of the responses of teachers concerning the challenges of making a conducive classroom. The responses shows that over fifty percent of the respondents indicated that they experiences the challenges mentioned on table.

Research question 3: What could be the possible ways of overcoming the challenges in (III) above?

The possible ways of overcoming the challenges are:

- i. There has to be a geography laboratory called a geography room with adequate and sufficient materials such that teaching and learning of geography will be convenient
- ii. The curriculum of geography has to be reviewed by curriculum planners such that it will correspond to the three year period and three lessons per week given for the teaching of geography in secondary schools.
- iii. There is need for the establishment of more schools by the government and other private organizations in order to take care of the rate of enrolment in schools.
- iv. Schools are to be given grants at the expected time to enable them to successfully run the schools without any problem.

- v. There should be adequate and sufficient supply of learning materials and facilities to enable both geography teachers and students to use them in teaching and learning of geography respectively.
- vi. Geography students are to be taken out on field trip and allowed to participate in practicals so that learning will be concrete and permanent.

Table 3: Test result from school 1

	Group (X ₁)	Group B (X ₂)
1	64	50
2	53	42
3	77	43
4	57	65
5	68	47
6	63	51
7	58	48
8	48	51
9	67	62
10	78	60
Σ	633	529
X	63	53

Table 4: Summary of analysis of the result in table 3

X _i	X ₂	t-cal	t-tab	df	α	Decision
63	53	0.839	2.101	18	0.05	Accepted

Table three contains the summary of the analysis of the result collected from the experiment. The experimental group (X₁) has an average of 63 while the control group (X₂) has an average of 53. The analysis of the result indicated that t-cal is 0.839 while the t-tab is 2.101 at α 0.05 with 18 as the degree of freedom. Since t-tab is greater than the t-cal, the null hypothesis is accepted. Therefore, there is no significant effect of learning environment on students performance in geography

Discussion

The result obtained from the experiment was questionable because there was no clear demarcation between experimental group and the control group results. Even the analysis of the result proof that there is no significant effect of learning environment on students performance. It was expected that there would be a clear demarcation in the performance of the two groups since they were not all exposed to the intervention programme. But the result came out to be in that form because of some limitation.

The limitations are as follows:

- i. It was difficult to prevent the students from the two groups from interacting with each other. They are both students from the same school most of them happen to be in the same town. They always meet after the school hours – on the field during games and on the playground within the town. As they interact, they may explain to each other about what had happen in their various groups and may even go on to practicalised it.
- ii. The windows of the classrooms were without curtains and so those form the control group may be able to peep through the window and may even see what was happening.
- iii. Only one research assistant was used, therefore, teaching the two groups cannot be done simultaneously. Those in the control group may stay at a corner to watch what was going on when the research assistant is busy with experimental group. But then, other measures have to be taken to have this experiment repeated probably in other schools or other zones to ascertain the authenticity of the conclusion and decision before making inferences on the large population even though there are challenges that an individual may face in doing so just as those faced by the researcher. Some challenges given by the geography teachers that responded to the questionnaire were being highlighted.

Class-size pose a serious challenge to the teachers and school authorities if at all, there will be an attempt to making a conducive classroom. The class-size is such that, provision of adequate learning facility becomes difficult. What is normally made available is a sample that may not be enough for each student to handle. Therefore, teaching is normally done without the use of a teaching aid. It is also difficult to organize for field-trip because the number to be handled by the teacher is too large.

Another challenge is on the period covered for the teaching of geography in secondary school. The reduction of the five year teaching period of geography to three years makes the period to be too short to cover its unreviewed curriculum. Geography is offered only in senior secondary school and only occupies three periods per-week on the lecture time-table of which when strictly followed, the syllables may not be covered. Therefore teaching is sometimes half hazardly done especially when it comes to topics such as map enlargement or reduction which requires practicals. Teachers end up explaining to students and practicalising on the chalk board for the students while the students are only given assignments and not having the practical done during the lesson.

In addition, provision of teaching aids is a challenge to teachers. Some teachers do teach without providing teaching aid for students due to un-availability or in-sufficiency of the materials. In situations where teachers may think of improvising some, they have been discouraged by the number

of students they handled. They lack fun to provide the required number of materials.

By and large, there has been no consideration for geography when it comes to provision of laboratories. Geography is being taught in normal classroom where it is not convenient for both teachers and the students. It suppose to be done in a laboratory where materials are available and sitting arrangement is convenient for the students.

In order to overcome these challenges:

- i. There has to be a geography laboratory called a geography room with adequate and sufficient materials such that teaching and learning of geography will be convenient
- ii. The curriculum of geography has to be reviewed by curriculum planners such that it will correspond to the three year period and three lessons per week given for the teaching of geography in secondary schools.
- iii. There is need for the establishment of more schools by the government and other private organizations in order to take care of the rate of enrolment in schools. This will help in reducing the number that is being admitted in the schools and number that is being handle by the geography teacher.
- iv. Schools are to be given grants at the expected time to enable them to successfully run the schools without any problem.
- v. There should be adequate and sufficient supply of learning materials and facilities to enable both geography teachers and students to used them in teaching and learning of geography respectively.
- vi. Geography students are to be taken out on field trip and allowed to participate in practicals so that learning will be concrete and permanent.

Putting all these to consideration means making the learning environment to be conducive for the geography teacher and student. This is further demonstrated in the experiment carried in the study area.

Summary of findings

- i. The learning environment does not significantly affect the performance of students in geography
- ii. Geography teachers experience large class-size of students offering geography in SSIII.
- iii. Geography teachers in the study area confess that class-size, provision of teaching materials, the teaching period for the course and inadequate or unavailability of geography laboratory are challenges faced by them in teaching geography.

Suggestions for further studies

- i. To embark on a research like this, two schools are to be used, one school to be experimental group while the other school is to

- be control group. This will help in preventing the two groups from interacting.
- ii. The treatment to be used in a research like this should include taken students out for field trips and allowing the students to do some practicals on the field.

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