
LEARNING ENVIRONMENT AS CORRELATE OF STUDENTS' ACADEMIC ACHIEVEMENT IN JUNIOR SECONDARY SCHOOL INTEGRATED SCIENCE

Dr. Iweka, Fidelis

Department of Educational Psychology, Guidance and Counselling, University Of Port Harcourt

ABSTRACT: *Environment plays an important role in the learning of integrated science. Environment means all the classroom conditions that facilitate teaching student's perception in their classroom and their academic achievement in integrated science. Both human and material resources as well as interaction and attitudinal behaviors in the classroom setting make up the classroom learning environment. In order to carry out this study, two research questions were posed and a null hypothesis was formulated. The design of the study is a correlation survey. The population comprised the entire JS2 integrated science students from five secondary schools drawn randomly from the entire schools in Ogba-Egbema Ndoni Local Government Area of Rivers State. Mean, standard deviation, Pearson's product moment correlation and t-test statistical techniques were used in analyzing the data. The result revealed that there is low mean perception of students of integrated science on their classroom environment. There is also positive significant relationship between their mean perception and their academic achievement. Based on the findings, some recommendations were made which include that integrated science teachers should be made to be aware of the influence of their environment on the achievement of students through seminars and workshops.*

KEYWORDS: Learning Environment, Correlate of Students', Academic Achievement, Junior Secondary School, Integrated Science

INTRODUCTION

The essence of Integrated Science as stated in the National Curriculum for Junior Secondary Schools, is to enable the child among others,

- (a) gain the concept of the fundamental unity of science,
- (b) gain the commonality of approach to problem of a scientific nature and
- (c) gain an understanding of the role and function of science in everyday life, and the world in which he/she lives.

To show the usefulness, need and applicability of science, this subject, integrated science, was made compulsory at the Junior Secondary School by making it one of the core subjects. Even at the Senior Secondary School level where Integrated Science was separated into specific subjects, it was still made compulsory by including them as core subjects of which a student must select at least one of them. The importance of classroom in the study of Integrated Science cannot be over emphasized. What one learns is influenced by the environment.

Ngwoke (2005) described the physical environment of learning to include space, time, classroom, chairs setting arrangement, play ground, school plant etc. A scientific environment is a powerful factor in Integrated Science development. Both nature and nurture have great influence on personality traits like intelligence. An Integrated Science rich environment is a warm literate environment which stimulates interaction.

No wonder Basching and Lundeteen (2003) observed that the teaching, learning and understanding of sciences flourish in settings where children are exposed to mature scientific models. Classrooms and laboratories should provide a variety of supplementary materials and students should have access to materials that stimulate scientific explorations.

Furthermore, the physical environment encourages scientific development and class room arrangement should give students easy access to the resources in the class. Apart from the physical environment, there is the psychological environment, which involves interaction, behavior patterns and other intra-classroom activities both tangible and intangible. To this, Sorigan and Awuwoloye (2005) observed that environmental concern remains one of the major focuses of contemporary scholarship. They believe that there are some environmental settings and factors which help in categorizing environmental settings. These factors according to them include location, gender, home and classroom setting and that all, affect in no small measure, the academic achievement of Integrated Science students. It has been observed that children of the same age group do not always possess the same ability in the study and understanding of Integrated Science. Some of the children brought up in the rural areas may lack the ability to study and understand integrated science than their counterparts in the urban areas because of the things ground them in their environment. It is a fact that influential attributes like intelligence, personality, learning style, etc are mostly inherited but they can be improved upon through nurture which is the environment. By implication, any child with a high intelligence quotient may be negatively affected intellectually and scientifically if placed in a poor environmental setting.

School environment consist of the entire interaction settings like classroom, field, teacher-pupil relationships within the school. The community in which the school exists has a lot of influence on the school environment. The junior secondary school curriculum is structured to include Integrated Science as a core subject. The system of evaluation that is adopted in assessing learning in Integrated Science is continuous assessment which is formative in nature as well as the end of the term examinations, which is summative. The achievement of students in these examinations have not been encouraging especially for the external examinations (Junior WAEC Chief Examiners Report 2013, 2014 and 2015).

Studies on school environment, mostly assert that there is difference in achievement based on where the school is located (urban or rural), while others say no difference. In Ghana, More (2000) observed significant difference ($P < 0.05$) in Mathematics achievement due to difference in school environment.

On another research carried out in Nigeria, Obe (2005), observed a tremendous effect of school environment on achievement on aptitude test. The school children from urban schools performed significantly better than their rural counterparts on both verbal and numerical aptitude tests. This also agrees with that of Soriyana and Awuloye (2003) but clearly varies with results of Axtell and

Browns (2006). The observations of Obioma and Ohuche (2010) showed no significant differences in achievement in mathematics due to school environment. The effect of school environment on academic achievement still remains unresolved. But this could be influenced by some other factors such as socio-cultural setting and socio-economic status (Rose and Rose, 2000, Barrick, 2008).

Therefore, the problem of this study is whether there is any relationship between classroom environment and students' achievement in Integrated Science in Ogba-Egbema, Ndoni Local Government Area of Rivers State in Nigeria.

The purpose of the study is to find out the perception of students on their classroom environment and as well determine the relationship between the student's perception of their classroom environment and their academic achievement.

Research Questions

1. What is the mean perception of students on their Integrated Science classroom environment?
2. What is the relationship between the student's perception on their Integrated Science classroom environment and their academic achievement?

Hypothesis

There is no significant relationship between mean perception of students on their classroom environment and their academic achievement in Integrated Science ($P < 0.05$).

METHODOLOGY

The design of this study is correlational. It involves eliciting the opinion of respondents on their perception which is the criterion score which obtaining their end of term result scores in Integrated Science form the predictive score. The study was carried out in Ogba-Egbema-Ndoni Local Government Area of Rivers State in Nigeria while the population comprised all the junior secondary two Integrated Science students in the secondary school in the area of study.

Simple random sampling technique was adopted in selecting four schools out of the secondary schools in the Ogba-Egbema-Ndoni Local Government Area.

The entire J.S.2 Integrated Science students in the four schools numbering 2,000, formed the sample size. The instrument for data collection is a modified four point likert-type questionnaire, which was validated by Measurement and Evaluation experts. The questionnaire contains 28 items which is scaled as Strongly Agree(SA) - 4, Agree (A) — 3, Disagree (D) — 2 and Strongly Disagree (SD) — 1, for positively cued items and vice versa for negatively cued items. There are seven subscales in the questionnaire. The items are arranged in cyclic order so that first, second, third and fourth items respectively in each block assesses personalization, cohesiveness, task orientation and innovation. These are major tasks in assessment of classroom environment. Items whose numbers are undefined are scored 1,2,3 and 4 (negatively) respectively while others are scored 4,3,2 and 1 (positively) respectively. The student's end of the year scores in Integrated Science was also used as predictive variable. The research questions were answered using means, standard deviation and Pearson's product moment correlation coefficient while t-test was used to test the hypothesis.

RESULTS**Research Question One:**

What is the mean perception of students on their classroom Environments?

Table 1: Means and standard deviation of students' perception on their classroom Environment.

Items	X	SD
1. The instructor considers students feelings.	3.055	0.539
2. The class is made up of individuals who don't know each other well.	3.0 15	0.429
3. Students know exactly what has to be done in our class.	1.46	0.804
4. New ideas are seldom tried out in this class	2.905	0.5 40
Grand	2.6	0.767
5. The instructor talks individually with the Students.	1.975	0.670
6. Each student knows the other members of the class by their first names.	2.87	0.50
7. Getting a certain amount of work done is important in this class.	3.91	0.389
8. New and different ways of teaching are seldom used in this class.	1.3 15	0.375
Grand	2.52	0.975
9. The instructor goes out of his/her way to help students.	1.74	
10. Friendships are made among students in this class.	1.315	
11. The group often gets side tracked instead of sticking to the point	1.85	0.65
12. The instructor thinks up innovation activities for students to do	2.36	0.74
Grand	2.275	0.556
13. The instructor helps each student who is having trouble with the work.	1.93	0.427
14. Students don't have much chance to get to know each other in the class	2.06	0.58
15. This is a disorganized class	3.52	0.797
16. Teaching approaches in this class are characterized by innovation and variety	1.31	0.716
Grand	2.205	0.81
17. The instructor seldom moves around the class to talk with students	2.215	0.799
18. It takes a long time to get to know everybody by his/her first name in this class	3.09	0.63
19. Class assignment are clear so everyone know What to do	2.01	0,685

20. The setting in this class is arranged in the same way each week.	1.06	0.25
Grand	2.07	0.83
21. The instructor isn't interested in students problems	2.17	0.539
22. Students in this class get to know each other Well.	3.545	0.835
23. Things seldom starts on time	3.085	0.669
24. The instructor often think of unusual class Activities.	1.97	0.42
Grand	2.69	0.647
25. The instructor is unfriendly and inconsiderate towards students.	3.03	0.468
26. Student in this class aren't very interested in getting to known other students.	3.15	0.686
27. Activities in this class are carefully and clearly Planned	2.87	0.808
28. Student seem to do the same type of activities every class	3.545	0.726
Grand	3.01	0.114

Overall Mean**2.50**

Data in the table shows a mean of 2.50 as students' mean perception on their classroom environment. The subscales have means of 2.60, 2.52, 2.205, 2.07, 2.69 and 3.01 with standard deviation of 0.76, 0.97, 0.55, 0.81, 0.64 and 0.11 respectively. The means hover about an average level of classroom environment while the standard deviations indicate close affinity of responses, as they are not wide spread.

Research Question 2:

What is the relationship between the students' perception on their integrated classroom environment and their academic achievement in integrated science? After correlating students' mean perception and their academic achievement in integrated science using pearson's products moment correlation technique, a correlation coefficient of 0.55 was obtained. The coefficient of 0.55 was obtained. This coefficient is positive and moderately high.

Hypothesis 1:

There is no significant relationship between the mean perception of students on their classroom environment and their academic achievement in integrated science ($P < .05$).

Table 2: t-test of relationship between the mean perception of students and their Achievement in integrated science.

No of Cases (N)	Corr Coef(r)	DF	t-cal	T-crit	Decision	Coef.
200	0.55	198	7.13	1.96	5	0.3025

Data in the above table reveals that t-cal 7.13 is higher than the t-critical (1.96), therefore, the null hypothesis stands rejected at 0.05 probability level.

DISCUSSION

The discussion was based result shows that the mean perception of students on their integrated science classroom environment is fair. This shows that their classroom environment is just fairly conducive for academic work. A closer observation of the items show that out of the seven clusters, only three have mean perceptions that are clearly above the benchmark of 2.5. items like number I, on instructors considering students feelings had mean perception of 3.055 which is quite high. On the contrary, the seating arrangement has mean of 1.06 which indicates high monotony. The result also shows that there is positive and fairly high correlation between student's classroom environment and their academic achievements. This implied that fairly conducive integrated science classroom was likely to be responsible for fair performance in integrated science.

Consequent on the fact that the perception is moderate and correlation coefficient moderately high, it means that if the classroom environment is very highly conducive, the achievement in integrated science will also be very high. This finding corroborates an earlier finding by Fraser (2000) who argued that learning environment has a substantially greater effect on attainment than on intelligence. Furthermore, Okeke and Idika (2001) and Ndukwe (2000) agreed that integrated science flourishes in setting where children are exposed to model science classrooms which helps to stimulate exploration.

Based on the findings some recommendations are made which include that:

- Integrated science teachers should be made to be aware of the influence of the classroom setting on the achievement of students through seminars and workshop.
- Teachers should ensure that lessons in integrated science take place in good classroom setting.
- Text writers in integrated science should be encouraged to utilize the principles of interactive learning in text writing.
- Teachers should vary their method of teaching by introducing innovative techniques like games in teaching among others.
- Teachers should maintain good relationship with the students.
- Teachers should improve to make the classroom environment conducive for learning.

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