

Research Article

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Factors affecting chemistry students performance in secondary schools in Mbaitolu local Government in Imo state.

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Abstract

This study investigates some of the factors which affect the performance of Chemistry students in Secondary schools in Mbaitolu Local Government Area in Imo State, following the general public outcry on the increasing rate of examinations in the school system. For an effective research work the study sample of 50 teachers and 120 students were randomly selected from five secondary schools in Mbaitolu local government area A15 item questionnaire was designed and administered on them. Four research questions were formed. The factors tested includes; Teachers Academic performance, teachers workload, teachers sex and parents attitude/educational background. The statistical techniques employed were the frequency and the percentage for research questions. Therefore, the findings of this research work are of immense value to the students, teachers, curriculum planners. Examination bodies, Educators, the public and future researchers.

Keywords

Factors Affecting,
Chemistry Students
Performance,
Secondary Schools,
Mbaitolu

Introduction

Science according to the Oxford Advanced Learners English Dictionary is the pursuit of knowledge arranged in an orderly manner, obtained by observation and testing of facts. Science has had a tremendous impact on the life of people in this world; it has successfully influenced every aspect of human life. Many nations of the world have become industrial and grown economically through the effective harnessing of science and technology to produce goods and services that could meet human wants beyond the basic necessities. For a nation such as ours that is still on the threshold of scientific and technological development, the unsatisfactory performance of students in chemistry is highly undesirable. As a matter of fact, educator and other stakeholder are indeed concerned about the need to improve students' academic performance.

Literature is replete with academic performance of students in science, in general and chemistry in particular. For instance, Osokaya, (2003), Eboh (2004) and Ukeje (1990) in their studies found out higher performance, especially in sciences is the foundation of acquisition of technical skills. These ideals have prompted the Nigerian Government to continue to embark on a number of educational programmes aimed at improving the quality of science education and consequently students' academic performance. After independence, successive Government of the Federal Republic of Nigeria has shown a great concern over the curriculum used in the Nigerian Secondary Schools, the concern emanated from an observation of the defects in the contents and pedagogical approaches specified in the curriculum as evidence by a growing gap technological requirement of the society. The

consequences are the various innovations steps taken to make very responsive to the needs of the nation, one of which is indicated in the National Policy of Education as the curriculum emphasis of (NE,2004).Chemistry is a core science and such good pass in it, is required before a students can be admitted in any tertiary institution in Nigeria for most scientific based disciplines (Osokoya 2003),Senior secondary school chemistry curriculum is designed to ensure the acquisition of the following;

- i. Adequate laboratory skills in chemistry.
- ii. Ability to apply scientific knowledge to everyday life in matters of personality and community health and agriculture.

iii. Meaningful and relevant knowledge in chemistry.

iv. Reasonable and functional scientific attitudes. It is worrisome to note that in spite of all the implementative strategic adopted by the curriculum developers and the emphasis placed on educational change and improvement, student's performance at the senior secondary in chemistry is abysmally low. In Imo State, Mbaitolu Local Government in particular, the problem of student's poor performance in chemistry is pathetic, See table below on details of poor performance of students in chemistry in the West African school certificate in the year 2000 to 2004 five secondary school in Mbaitolu Local Government.

Year	Total Number of student that sat for WAEC examine	Percentage of credit passes
2001	493	132 Representing 33.31%
2002	518	147 Representing 28.38%
2003	514	159 credit passes Representing 35.18%
2004	483	59 Representing 32.71%

Some findings suggest factors such as students interest, reasoning ability, self-concept, gender and study habits as being responsible for the poor performance in chemistry (Njoku, 2003).Other persistent problem is student's attitude toward the subjects. Educators and psychologists have shown attitudes is very significant factor in learning and this become concerned with students attitude towards learning different subjects of which chemistry is one. Perhaps there are other factors that combine ton influence students academic performance, however, the research study is an attempt to find out the factors that affect student's academic performance in chemistry in Mbaitolu Local Government Area of Imo state.

Aim of the Study

The purpose of the study is to find out the factors that affect the performance of chemistry students in Mbaitolu Local Government Area in Imo State. In order to determine the extent to which the students have attained the intended curriculum, the study will achieve the following objectives;

1. To find out whether the level of academic qualification of the teacher could -affect the performance of chemistry students in evaluating student's performance.
2. To find out if there is any significant relationship between sex difference and students attitudes towards chemistry.
3. To find out if there is any significant difference between student's socio-economic background and their academic performance in chemistry.
4. To find out if there is any significant relationship between parent's attitude and students and student's academic performance in chemistry.

Materials and Methods

Research Design

The objective of the study is to determine the factors that performance of chemistry students. The research design is descriptive survey in which the problems militating against the students' performance were identified and described. Subjects were required to complete questionnaire which were prepared and administered by the researcher.

Population of the Study

Population for study centers on teachers and students in secondary school in Mbaitolu Local Government Area in Imo State.

Samples and Sampling Technique

Five secondary schools were randomly selected and used for the study was made up of 50 teachers and one hundred and twenty senior secondary three (SS3) students from five (5) randomly selected secondary

schools Imo State in Mbaitolu Local Government Area, which was an average of 10 teachers and 24 SS3 student per school. A representative sample of five out of seven schools in the area was selected for the study. The names of the five schools were written out given serial numbers. The sampled subjects were selected from the sampled schools through random sampling and these constituted the teacher and students respondents. However, since all the teachers in the sampled schools had the least qualification of Nigerian certificate of Education (NCE), a representative sample was randomly selected.

Table 1: Population, Sample and their Schools with School Code.

School codes	School	Population		Samples	
		Teachers	Student	Teachers	Student
1	Ubomimri Girls Secondary School	47	45	10	24
2	Umunoha Girls High School	18	35	10	24
3	Umunoha Secondary School	23	170	10	24
4	Community Secondary-School, Ifakala	35	200	10	24
5	Afara Community High School	38	210	10	24
Total		161	660	50	120

Table 2: Categories of Teachers for the study

Sex	N.C.E	First Degree	Higher degree	Total	No of Students
Male	6	28	-	34	
Female	2	14	-	16	5
Total	8	42	-	50	

Table 3: Showing school, Codes, Male and Female Teachers respondents per school.

School	Code	Male	Female	Total
Ubommiri Girls Secondary School	01	6	4	10
Umunoha Girls High School	02	8	8	10
Umunoha Secondary School	03	9	9	10
Community Secondary school, Ifakala	04	6	6	10
Afara Community High School	05	5/34	5/16	10/50

Table 4: Showing School Code, Male and Female Students Respondents Preschool.

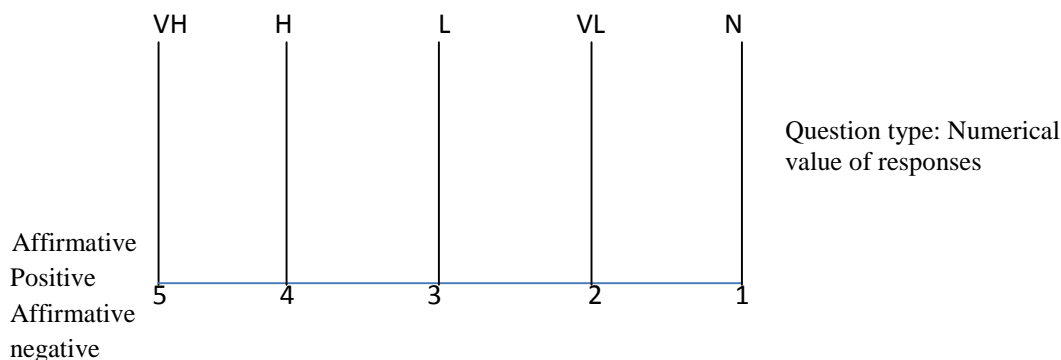
School code	Male	Female	Total
01	13	11	24
02	12	12	24
03	9	15	24
04	9	15	24
05	18	6	14

Research Instrument

The study employed the use of questionnaire as the main instrument of the study for data collection. A 15 item questionnaire was designed to reflect items on level of academic qualification, motivation of teachers, teacher workload and teachers sex. The questionnaire was divided into two section; A and B. Section A was designed to illicit information on the teachers' personal characteristics such as name of school, sex, qualification, experience, workload and area of specialization. The section B was made up

of 15 item questionnaires designed to find out information on the listed variables which are suspected to be affecting the performance of chemistry students in our secondary schools. This questionnaire was designed to investigate whether there was any significant relationship that existed between certain factors supposed to be affecting the performance of secondary students in our schools. Based on whether the items were put affirmatively positive or negative, numerical values were designed in either ascending or descending order but leaving the options unchanged.

Table 5: Scoring Procedure



Reliability of Instrument

The students Academic Performance questionnaire (SAPQ) was developed by the researcher with the aid of an expert and the supervisor. In order to check the reliability of the instrument, a pilot test was carried out. For the pilot test twenty teachers and twenty students were randomly selected. Two weeks later, the same questions were re-administered to the same teachers and students and reveals a reliability coefficient, this implies that the instrument was reliable.

Administration of Instrument

The data used for the study was obtained from 120 students and 50 teachers from the five secondary¹ schools selected. The researcher went round the six schools to collect the data personally. In each school, 10 teacher and 24SS3 students were selected randomly and the questionnaire given to them to complete after giving them assurance that all the answers will be treated with utmost confidence. Positive statement on the questionnaire were scored in order of 5,4,3,2,1 corresponding to VH,H,L,VL and N. For all negative items, the scoring order was reversed. The grand total of each respondent's for all the positive and negative statements gave the respondent score.

Methods of Data Analysis

Frequency and percentage were used to analyze the research questions. For the purpose of testing the hypotheses, the test was outlined factors suspected to be affecting the performance of chemistry students in our secondary school.

Data Presentation and Analysis

The results of the statistical description are summarized in tables. Frequency and percentage distribution were used.

Table 6: Frequency and Percentage of Teachers with Very high, high, Low and Very Low Response towards Teachers Academic Qualification

Item	Frequency	percentage
Very high	20	40
High	10	20
Low	15	30
Very low	5	10
Total	50	100

Percentage of teachers with very high, high, very low, low, no responses towards teachers level of academic qualification.

The table shows that 40 percent and 30 percent gives an overall that indicates that teacher's academic qualification affects student's performance, While 20

percent and 10 percent is of the opinion that teacher's academic qualification is not a factor that affects student academic performance. Therefore, the result is that majority of the respondents are of the view that teachers' level of academic qualification affects the performance of students.

Table 7: Frequency and Percentage of Teachers with Very high, high, Low and Very Low Response towards Teachers Workload.

Item	Frequency	percentage
Very high	15	30
High	20	40
Low	10	20
Very low	5	10
Total	50	100

The table shows that 30 percent and 40 percent are of the opinion that heavy workload on the teachers influence the Academic performance of the students while 20 percent and 10 percent are of the opinion that teachers' workload do not affects chemistry students

performance. Therefore we can conclude that majority of the respondents are of the opinion that heavy workload on the teachers affects chemistry students' performance.

Table 8: Frequency and Percentage of Teachers with Very high, high, Low and Very Low Response towards Teachers Sex.

i Item	Frequency	Percentage
Very high	30	60
High	10	20
Low	5	10
Very low	5	10
Total	50	100

The table shows that 60 percent of the respondents are very high, 20 percent are high, while 10 percent gives an overall that indicates that sex of the teacher do not affects students' performance. Therefore we can

conclude that majority of the respondents are of the view that sex of the teacher affects chemistry students performance.

Table 9: Frequency and Percentage of Teachers with Very high, high, Low and Very Low Response towards Parents Attitude.

Item	Frequency	percentage
Very high	20	40
High	10	20
Low	15	30
Very low	5	10
Total	50	100

The table shows that 40 percent and 20 percent are of the opinion that parents attitude influence students' performance, while 30 percent and 10 percent of the gives an overall responses that parents attitude or Academic Background cannot affects students performance. We can conclude that majority of the respondents are of the view that parents attitude affects students performance.

opinion that when a teacher is heavily loaded academically, student's performance tends to suffer. The results that majority of the teachers and students would like teachers to be less loaded for an effective performance by the students is expected and not surprising. This is because campaigns for women education have exposed serious dangers associated with women not educated. Similarly, Anioke (1979) in Udo (1995) Concludes that "Male teachers are better teachers, as they are more punctual, prepare their lessons and engage in post-teaching activities than their female counterparts.

Discussion

The result shows that 40 and 30 percent give an overall that indicates that teacher academic qualification affects the performance of students while 20 percent and 30 percent gives an overall responses that teacher academic performance cannot affect students performance and therefore do not see it as a factor. The result that a greater percentage of the respondents agree to this factor is expected and not surprising. This is because many of the teachers who are highly qualified academically have been successfully enhancing the performance of students. This is in line with findings of Fansanmi (1990) that the country therefore needs citizens who are fully educated and equipped with necessary skills to enable them participate effectively in the solution of problems of effective evaluation of instructional outcomes in the nations education system. Similarly, Adeyemi (1985) observes in his study that "a teacher cannot give what he does not have; we must insist that those would teach our children must be knowledgeable or qualified.

The result in table 9 shows that 40 percent and 20 percent gives an overall that indicates that parents attitude affects students' performance while 30 percent and 10 percent are of the opinion that parents attitude do not affect students performance. Therefore, greater percentage of the respondents is of the opinion that parents attitude affects students performance. Similarly, Raggai (1979) in Udo (1995) notes that in homes where parents are illiterates or have poor education, there is lack of education motion and guidance. He emphatically states that where parents are not capable of providing the necessary educational leadership, their children will not be regular in school, generally they perform poorly and academic performance becomes low.

Conclusion

The result in table 7 shows that 30 percent and 40 percent of the respondents are of the opinion that teachers workload affects students performance. 20 percent and 10 percent gives an overall which indicates that workload on teachers do not affect students performance. Therefore the result indicates that a greater percentage of the respondents are of the

Consequent upon the findings of this study whose purpose was to find out the factors affecting the performance of chemistry students in Mbaitolu Local Government Area, It is reasonably important to conclude that there is significance influence on some variables on students' performance. Teachers' academic qualification affects the performance of students.

This implies that higher academic qualification is necessary in the use of statistics and computational aspects of students' academic performance as far as the teachers are concerned. Teachers workload affects student's performance. The implication here is that teachers should be less loaded so that they may have enough time to attend to their students.


Teachers sex affects student's performance. It shows that male teachers readily accept the process of enhancing the student's performance. Parents attitude /Educational Background affects student's performance. The implication is that when the parents have a good socio-educated background, it will help to groom their child, and this enhances the performance of such child.

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