

Influence of Teacher Attributes on Academic Performance of Public Secondary School Students in Biology in Ekiti State, Nigeria

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ABSTRACT: *The study examined the influence of teacher attributes on academic performance of public Secondary School Students in Biology in Ekiti State. The research investigated the influence of teachers' mastery of subject matter, attitude, lesson preparation and interest on students' performance in Biology in secondary schools. This study adopted descriptive research design of the survey type. The population for the study consisted of all the Senior Secondary School (S.S.S) two students offering Biology in public Secondary Schools in Ekiti State. The sample consisted of 100 S.S.S. 2 students offering Biology drawn from 5 public secondary schools in Ekiti State, Nigeria. The sample was selected using multistage sampling technique. Teachers' Attributes Questionnaire (TBQ) and an inventory were used to collect relevant data for the study. All the four hypotheses were tested two-way Analysis of variance (ANOVA) where applicable. It can be concluded from the findings of this study that teachers' mastery of subject matter and lesson preparation influenced students' academic performance in Biology while teachers' attitude and interest has no influence on students' performance in Biology. It was recommended among others that Biology teachers should be given adequate orientation through workshops and seminars to update their knowledge.*

Key Words: *Teacher attributes, public secondary schools, academic performance, Biology*

Introduction

The teacher is the most indispensable factor in effective administration of any education system. Also, it has been established that no amount of resources put into the nation education system, without adequately prepared and motivated teachers, nothing tangible can ever be achieved from the system. The role of teachers at all levels of education is emphasized in the National Policy on Education (FRN, 2004) that no educational system may rise above the quality of its teachers. This declaration in the policy document underscores the need for teachers' effectiveness in teaching and learning. It is the teachers' competence, ability, resourcefulness, and ingenuity through effective utilization of appropriate language, methodology, teaching attributes and available instructional materials that could bring out the best from the learners in term of academic performance.

Teachers' attributes can bring about desirable transformation of student's culture of learning and academic performance. This can only happen in learners when the teacher possesses a good mastery of the subject matter, have positive attitude, have a map to follow in terms of well-prepared lesson, grab the students attention through effective class control mechanism and effective utilization of educational resources.

Teacher's mastery of subject matter (competence) may be a strong variable indicating student performance in Biology. Kimberly (2009) stated that teachers must be knowledgeable in their area of study. In truth, if a teacher is not enlightened in his/her subject, then any hope of effectiveness goes right out the window. Hence, effective teaching and students' performance could be measured by the level of a teachers' subject matter competence. Kimberly (2009) regarded this as a prime predictor of students' learning.

It has been established that there is a high correlation between what teachers know and what they teach. Thus, the ability to teach effectively depends on the teachers' knowledge of the subject matter. Adediwura & Bada (2007) stated in their study that nobody could teach what he/she does not know. They went further to state that they (teachers) must thoroughly understand the content of what they teach. A teacher whose understanding of topic is thorough uses clearer language, their discourse is more connected, and they provide better explanations than those whose background is weak.

Teachers' attitude towards Biology plays a crucial role in the teaching and learning processes. Its influence on students' academic performance in Biology cannot be over emphasized. The way Biology is presented in the classroom and perceived by students contributes to a large extent to the development of positive attitude towards the subject. Attitude are developed or formed from learning experiences

encountered by teachers or learners. Regrettably, many teachers hardly realize that how they teach, conduct themselves and interact with students is more vital than what they teach. Teacher's attitude directly impinges on student's attitude.

Lesson preparation is essential to the process of teaching and learning. The development of interesting lessons takes a great deal of time and effort. It is also important to realize that the best prepared lesson is worthless if interesting delivery procedures are not put in place. Nakpodia (2006) asserted that lesson preparation in the modern era centres on the improvement of the teaching-learning situation to the benefits of both the teachers and learners, helps in the identification of areas of strength and weaknesses of teachers which will motivate the teacher to prepare adequately for classroom teaching. The Lesson preparation of teacher starts from the preparation of the teacher towards the teaching of a particular topic; this invariably focus on the availability of lesson note, statement of objective and organisation of content.

However, the researcher observed that some Biology teachers hardly prepare for their lesson before entering the class to deliver the lesson. A teacher who does not prepare for a lesson will hardly deliver the lesson adequately in the classroom. When teachers do not prepare for their lesson, it may be difficult for them to deliver the lesson sequentially as this appears to affect students' academic performance.

Obodo (2002) viewed interest as the attraction which forces or compels a teacher to respond to a particular stimulus. According to Harbor-Peters (2002), interest is a subjective feeling of intentness or curiosity over something. The interest in a particular thing is a feeling manifested in an activity. Interest is the feeling or a desire to give attention to something or a desire to be involved with and to discover more about something.

It's been noted that teachers interest in the teaching of a particular subject usually go along way to improve the performance of their learners. Teachers interest in the teaching of Biology could be describe as their feeling of wanting to teach the subject and learn more about it. No wonder that literature have reveal the fact that teachers interest promote learning outcomes in Biology particularly among the students. It is hope that the result in this study will confirm this fact.

Statement of the Problem

Reports have shown that there has been a downward trend in academic achievement of students in Biology in Ekiti State secondary schools. Parents, teachers, curriculum experts have also expressed considerable concern about this poor achievement.

The problem of teachers' attributes in secondary school today includes poor mastery of subject matter by teachers, poor attitude to teaching Biology, poor level of preparedness on the part of the teacher to adequately pass on instructions, and negative interest among others. All these inadequacies seem to hinder the effectiveness of teachers and the consequence is the poor achievement of students in Biology. The problem of this study therefore is to determine if teachers' attributes influences students' performance in Biology in secondary schools in Ekiti State.

Purpose of the Study

The study investigated influence of teacher attributes on students' performance in Biology in secondary schools in Ekiti State Specifically, the study will examine:

- i. the influence of teachers' mastery of subject matter on students' performance in Biology in secondary schools;
- ii. the influence of attitude on students' performance in Biology in secondary schools;
- iii. the influence of lesson preparation on students' performance in Biology in secondary schools; and
- iv. the influence of teachers' interest on students' performance in Biology in secondary schools.

Research Hypotheses

The following hypotheses were generated to guide this study.

1. Teachers' mastery of subject matter will not significantly influence students' performance in Biology in secondary schools.
2. Teachers' attitude will not significantly influence students' performance in Biology in secondary schools.
3. Teachers' lesson preparation will not significantly influence students' performance in Biology in secondary schools.
4. Teachers' interest will not significantly influence students' performance in Biology in secondary schools.

METHODOLOGY**Research Design**

The descriptive research design of the survey type was adopted in the study. The research design was descriptive because it involved the collection of data that sought the opinions of students on their teachers' attributes as it influence their academic performance in Biology. This research design enabled the researcher to gather information from a sample of a large population in their natural setting without manipulating them.

Population

The population for the study consisted of all the Senior Secondary School (S.S.S) two students offering Biology in public Secondary Schools in Ekiti State.

Sample and Sampling Techniques

The sample consisted of 100 S.S.S. 2 students offering Biology drawn from 5 public secondary schools in Ekiti State, Nigeria. The sample was selected using multistage sampling technique. The first stage involved the selection of five Local Government Areas in Ekiti State through stratified random sampling technique. The second stage involved the selection of one school from each of the five Local Government Areas of Ekiti state through simple random sampling techniques. The third stage involved the selection of 20 S.S.S. 2 students from each of the selected school to assess teachers' attributes.

Research Instruments

Teachers' Attributes Questionnaire (TBQ) and an inventory were used for collecting the data of the study. TBQ will be used to measure teachers' attributes. It consisted of sections A and B, section A sought for the bio-data of the respondents while section B of TBQ consisted of 20 items to measure teachers' mastery of subject matter, attitude, lesson preparation and interest. The inventory requested for the academic performance of the students in Biology.

Validity of the instrument

The Teachers' Attributes Questionnaire (TBQ) was given to experts in Tests and measurement in the Institute of Education in Ekiti State University, Ado – Ekiti. The face and content validity were judged by these experts to assess the wordings and ambiguity of the items as well as their coverage.

Reliability of the instrument

The reliability of TBQ was carried out by administering it on 20 respondents in one of the schools outside the study area using test – retest method. The instrument was administered on 20 respondents. After a period of two weeks, the instrument was re-administered on the same respondents. The data extracted were collated and analyzed using the Pearson Product Moment correlation statistics which yielded reliability co-efficient of 0.84.

Administration of the Instruments

The researcher personally visited each of the school sampled to administer the instruments. This made it possible for the researcher to explain and interpret some items of the questionnaire to the respondents. The researcher's personal contact and visit to the respondents helped in ensuring better understanding of the instruments and also eased retrieval of the instruments.

Data Analysis

The data generated from the instrument were analyzed using inferential statistics. All hypotheses were tested using Two- Way Analysis of Variance (ANOVA). All the hypotheses were tested at 0.05 level of significance.

RESULTS AND DISCUSSION

Hypothesis 1: Teachers' mastery of subject matter will not significantly influence students' performance in Biology in secondary schools.

Table 1: Two-way Analysis of Variance of influence of teachers' mastery of subject matter on students' performance in Biology.

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9289.606 ^a	6	1548.268	208.166	.000
Intercept	213886.569	1	213886.569	28757.176	.000
Mastery of Subject Matter	19.188	2	9.594	1.290	.280
Performance	5348.686	2	2674.343	359.567	.000
Mastery of Subject Matter * Performance	65.190	2	32.595	4.382	.000

Error	751.704	93	7.438		
Total	322187.000	100			
Corrected Total	10041.310	99			

a. R Squared = .931 (Adjusted R Squared = .926)

The result presented in table 1 showed that the P -value of 0.000 is less than 0.05 at 0.05 level of significance. This result led to the rejection of the hypothesis. Hence, teachers’ mastery of subject matter significantly influenced students’ performance in Biology in secondary schools. This implies that teachers’ mastery of subject matter has influence on the performance of students in Biology in secondary schools.

Hypothesis 2:Teachers’ attitude will not significantly influence students’ performance in Biology in secondary schools.

Table 2:Two-way Analysis of Variance of influence of teachers’ attitude on students’ performance in Biology

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9272.800 ^a	5	1854.560	246.050	.000
Intercept	136880.701	1	136880.701	18160.337	.000
Attitude	.532	1	.532	.071	.791
Performance	4786.516	2	2393.258	317.520	.000
Attitude * Performance	3.799	2	1.899	.252	.778
Error	708.510	94	7.537		
Total	322127.000	100			
Corrected Total	9981.310	99			

a. R Squared = .929 (Adjusted R Squared = .925)

The result presented in table 2 showed that P -value (.778)>0.05 at 0.05 level of significance. This result led to the non-rejection of the hypothesis. Hence, teachers’ attitude will not significantly influence students’ performance in Biology in secondary schools. This implies that teachers’ attitude has no influence on the performance of students in Biology in secondary schools.

Hypothesis 3:Teachers’ lesson preparation will not significantly influence students’ performance in Biology in secondary schools.

Table 3:Two-way Analysis of Variance of influence of teachers’ lesson preparation on students’ performance in Biology

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9292.022 ^a	6	1548.670	208.949	.000
Intercept	192195.664	1	192195.664	25931.388	.000
Lesson Preparation	17.430	2	8.715	1.176	.313
Performance	5866.780	2	2933.390	395.778	.000
Lesson Preparation * Performance	72.081	2	36.041	4.862	.000
Error	759.288	93	7.412		
Total	322197.000	100			
Corrected Total	10051.310	99			

a. R Squared = .931 (Adjusted R Squared = .926)

The result presented in table 3 showed that the P -value of 0.000 is less than 0.05 at 0.05 level of significance. This result led to the rejection of the hypothesis. Hence, teachers’ lesson preparation significantly influenced students’ performance in Biology in secondary schools. This implies that teachers’ lesson preparation has influence on the performance of students in Biology in secondary schools.

Hypothesis 4: Teachers’ interest will not significantly influence students’ performance in Biology in secondary schools.

Table 4:Two-way Analysis of Variance of influence of teachers’ interest on students’ performance in Biology

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	9281.222 ^a	7	1325.889	174.238	.000
Intercept	126513.748	1	126513.748	16625.430	.000

Interest	6.301	2	3.151	.414	.662
Performance	2617.611	2	1308.805	171.993	.000
Interest * Performance	7.751	3	2.584	.340	.797
Error	700.088	92	7.610		
Total	322127.000	100			
Corrected Total	9981.310	99			

a. R Squared = .930 (Adjusted R Squared = .925)

The result presented in table 4 showed that $P(.340) > 0.05$ at 0.05 level of significance. This result led to the non-rejection of the hypothesis. Hence, teachers' interest will not significantly influence students' performance in Biology in secondary schools. This implies that teachers' interest has no influence on the performance of students in Biology in secondary schools.

Discussion

The findings revealed that teachers' mastery of subject matter and lesson preparation significantly influenced students' performance in Biology in secondary schools. It implies that teachers' mastery of subject matter and lesson preparation have influence on the performance of students in Biology in secondary schools.

Findings of the study also revealed that teachers' attitude and interest will not significantly influence students' performance in Biology in secondary schools. It implies that teachers' attitude and interest have no influence on the performance of students in Biology in secondary schools.

Conclusion

It can be concluded from the findings of this study that teachers' mastery of subject matter and lesson preparation influenced students' academic performance in Biology while teachers' attitude and interest has no influence on students' performance in Biology.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Biology teachers should be given adequate orientation through workshops and seminars to update their knowledge.
2. Teachers should adequately prepare for their lesson before going to the class.

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