Impact of Teacher Characteristics on Students' Academic Performance in Public Secondary Schools

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Abstract:-The study examined the impact of teacher characteristics on students' academic performance in public secondary schools in Enugu North Local Government Area of Enugu State, Nigeria. The study adopted a descriptive survey design and a sample size of four hundred was selected from a population of nine hundred and sixty-eight using the Taro Yamane sample size formula. Two research questions and two hypotheses were proposed for the study in line with the study objectives. The Average Mean Score was used to analyze responses for the research questions while Multiple Regression Analysis was used to test the five hypotheses proposed for the study to ascertain the relationship that exist between academic performance and teachers' characteristics. The findings of the study show that the independent variables (teachers' knowledge of subject matter and teaching method) all correlated significantly and positively with the dependent variable (students' academic performance). Among other recommendations, the paper recommends that government should embark on time to time monitoring and evaluation of teachers to ensure that teachers carry out their duties effectively in line with the guidelines of the teaching profession and that Teachers' Registration Council of Nigeria (TRCN) should introduce tests and examination for teachers at regular intervals based on the subject they teach and general teaching practice. Furthermore, geography teachers should incorporate field trips and excursions as integral part of their teaching method, since geography is more of a field experience than classroom subject.

I. INTRODUCTION

Education and its benefits can never be overemphasized as the root of economic, industrial, political, scientific and technological and even religious development. All aspects of development are centered on education. Every educational system at any level depends heavily on teachers for the execution of its programmes. Teachers therefore are highly essential for successful operation of the educational system and important tools for educational development.

It is an acceptable fact that the teacher is the most important factor in the educational process and that teachers are instrumental to the success of any educational programme embarked upon by any government. This is because, apart from being at the implementation level of any educational policy, the realization of these programmes also depend greatly on teachers' dedication and commitment to work (Adeniji 1999).

Adeogun (2001) opined that the quality of any educational system depends on the quality of its teaching staff and that

without quality teachers; a school may not be able to achieve its goals and objectives. The National Policy on Education further stated that, "no educational system can rise above the quality of teachers in the system" (FGN, 2006).

In view of the above statement on the pre-eminent role of the teacher in boasting the quality of education of a nation, the Federal Government of Nigeria has made several attempts and enacted laws concerning the development of education. Among such attempts is the law concerning the training and recruitment of teachers which was done in order to achieve qualitative educational outcomes. The National Policy on Education emphasizes that only qualified and skilled teachers should be recruited into the educational system of Nigeria (NPE, 2004).

Geography as an essential field in every human endeavors consists of knowledge of the world around us. It goes from studying the physical environment we live in to studying interactions that goes on within this environment. Geography as a vast field of study should therefore be taught by a highly qualified and skilled teacher. The study of the distinctive characteristics of geography contributes to the balanced development of an individual. Harm (1999) opines that education that does not include geography will have a lot of social cost among which includes; deprivation of young students of early awareness of spatial relationships, denial of young students of their early exposure to maps and their uses and it engenders a geographic illiteracy that will last till adulthood among others. The knowledge of geography and the ability to think geographically aids the individual in understanding and interpreting the realities of the world.

The increasing importance of geography in the society notwithstanding the trend of poor performance both in internal and external examinations has been partly attributed to the low level of geography teachers' competence in teaching. WAEC (2004 and 2005) chief examiners reports observed that different categories of teachers with varying academic qualifications, areas of specialization and teaching experience teach geography in secondary schools. The report further indicates that students could perform better if they are well taught and guided by qualified teachers.

It is therefore to this end, that this study investigates the impact of teachers' knowledge of subject matter and teaching methods on students' academic performance in geography in selected public secondary schools in Enugu Urban, Nigeria.

Statement of the problem

The falling standard of education in the nation is becoming so high, especially in our secondary schools. The performance of Nigerian secondary school students in external exams showed 98% failure rate in the 2009 November/December Senior School Certificate Examinations conducted by the National Examination Council (NECO); out of the total number of 230,682 candidates who sat for the examination, only 4.223 obtained credit level passes and above in five subjects including English, Mathematics and Geography (Bello, Osagie and Olugbornila 2009).

The results from the West African Examination Council (WAEC), shows a trend in the failure rate of students in geography. The result showed a failure rate of 44.07% in 2000, 43.02% in 2001, 42.6% in 2002, 33.0% in 2003 and in 2014 only 29.27% pass was recorded, indicating a 70.73% failure rate. The WAEC result of 2015 showed that less than 42.6% of the students who registered and sat for the examination passed geography (WAEC, 2015).

The success of any teaching and learning process which invariably influences students' academic performance depends on the effectiveness and quality of the teacher which is often expressed in the teacher's knowledge of the subject matter and teaching methods. Duyilemi and Duyilen (2002) reiterated that students in any country cannot perform beyond the quality of their teachers. In his study, Bangbade (2004) found out that teachers' attributes have significant relationship with students'' academic performance. According to him, such attributes include; teachers' knowledge of subject matter, communication skill, emotional stability, good human behavior and interest in the job, etc. He concluded that students whose teachers lack these qualities do not perform well. This study seeks to investigate how the teachers influence the academic performance of students in Geography.

Research Objectives

The specific objectives of this study are: To investigate the

1. Relationship between teachers' knowledge of subject matter and students' academic performance.
2. Relationship between teachers' teaching method and students' academic performance

Research Questions

1. What is the relationship between teachers' knowledge of subject matter and students' academic performance?
2. What is the relationship between teachers' teaching method and students' academic performance?

Research Hypotheses

Based on the above research objectives and questions, the following corresponding hypotheses state in null form where proposed to guide this work:

Ho: There is no significant relationship between teachers' knowledge of subject matter and students' academic performance.

Ho: There is no significant relationship between teachers' teaching method and students' academic performance

II. LITERATURE REVIEW

Teachers' knowledge of Subject Matter and Student's Academic Performance

Knowledge of the subject matter has been identified by many researchers as a variable that influences teachers' quality and also affects students' performance. Majason (1995) opined that the mastery of relevant knowledge is one of the most important attributes of the teacher. The teacher must have a good grasp of the subject matter if he is to command the respect of his learners. When a geography teacher has mastery of the subject of geography, such a teacher will be able to simplify lessons for his students, thereby making the teaching /earning process interesting and fulfilling.Hill, Rowan and Ball (2005) investigated how teachers' knowledge of mathematicsinfluences students' mathematics achievement. The study findings showed that teachers' knowledge was significantly related to students' achievement gains in both first and third grades; and provided of mathematics improved students' mathematics achievement.The work done by Baumert et al. (2010) which investigated teachers' subject matter knowledge, cognitive activation in the classroom, and student progress also found a correlation between these variables.Teachers with a higher PCK score was found to create better lessons, which had positive effects on the students' content knowledge and test results.

A similar study carried out by Adediwura and Bada (2007) which looked at the relationship between perception of teachers' knowledge, attitude and teaching skills as predictors of academic performance in Nigerian secondary schools found that students' perception of teachers' knowledge of subject matter, attitude to work and teaching skills were significantly correlated to students' academic performance.

Teaching Methods and Student's Academic Performance

On the "Impact of Teachers' Teaching Methods on the Academic Performance of Primary School Pupils in Ijebu-Ode Local cut Area of Ogun State,"Adunola, O. (2011), remarked that the method of teaching is as important as the subject been taught. Whether a student will understand what is been taught or not is a function of the method employed by the teacher in the delivery of such lesson. He went further to outlined six conventional methods of teaching. According to him, a teacher can apply any of these methods depending in the target learners/audience and the nature of the lesson. These teaching methods include lecture method, discussion method demonstration method, discovery method, project method and field trips methods, project method and field trips methods.

Each of these methods has their advantages and disadvantages depending on their usage.

A study carried out by Adeoti and Olufunke (2016), on teachers' characteristics as determinants of academic performance of Junior Secondary School students in Osun State, Nigeria among other findings reported that there was a significant relationship between teachers teaching style and student's academic performance. The study also found a significant relationship between teachers' qualification, experience and students' academic performance.

Akinfe, Olofimiyi, and Fashiky (2012) further studied teacher characteristics as predictor of academic performance of students in Osun State. The study used a survey design in investigating the perception of SS3 students on teacher characteristics in relation to students' academic performance. Findings reveal that students' academic performance correlate positively and significantly depending on teachers' attitude to teaching and learning in the classroom; knowledge of subject matter and teaching skills.

However, the study conducted by Mwangi (1983) which focused on identifying some of the factors which influence learning and achievement in secondary mathematics in Kenya. Among the teacher characteristics investigated by this study, only three were found to be related to achievements in KCE mathematics where two were positively related and one was negatively related. The variables that showed positive relationship were sex of the teachers. Students taught by male teachers tended to score higher to KCE than those taught by female teacher. It would appear that the sex of the teachers of economics has some bearing in the performance of students in economics. Negative teachers' attitude towards mathematics teaching was correlated with low achievement in KCE mathematics. The remaining teacher characteristics such as time spent on lesson preparation, team teaching, group work, professional qualification, in service training, teaching experience, frequency of supervision and the use of teaching aids showed no relationship to achievement in mathematics.

III. METHODS

The study adopted descriptive survey which is appropriate in gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984).

3.1 Area of the study

The study was carried out in Enugu North Local Government Area which is one of the local government areas that make up Enugu. This area is known for its relatively high concentration of public secondary schools.

3.2 Population of the Study

Stratified sampling method was used to divide the public secondary schools in the area into Boys' school, Girls' school and mixed school. One school each was randomly selected from each of the strata, making it a total of three schools. The population of the students offering geography together with the geographer teachers constituted the population of this study. The total population of students offering Geography in the three selected schools is nine hundred and fifty-nine (959) and the number of geography teachers is nine (9), given a total of nine hundred and sixty-eight (968).

A sample size of four hundred was selected from the study population using the Taro Yamane Formula. Four hundred copies of questionnaire was distributed to each of the three schools based on their percentage contribution to the study population.

Four hundred copies of questionnaire were distributed to the nine selected schools. The four hundred copies of questionnaire were distributed to these selected schools based on their percentage contribution to the study population.

3.3 Instrument for Data collection

The study adopted a four-point structured Likert scale questionnaire of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

3.4 Method of Data Analysis

The demographic data generated was analyzed using descriptive statistics such as tables and percentages. Mean rating (X) was used to analyze the responses gotten from the research questions. The result was accepted when $X \geq 2.5$ and rejected when it's less. The study hypotheses for the study were tested using Multiple Regression Analytical Technique at a $p<0.005$. The null hypothesis was rejected when $p<0.005$ and the alternate hypothesis accepted.

IV. RESULTS

Research Question 1: What is the relationship between teacher's knowledge of the subject matter and students' academic performance?

Table 4.1: Mean rating of the relationship between teacher's knowledge of the subject matter and students' academic performance

S/N	ITEMS	SA	A	D	SD	MEAN X	DECISION
1.	Teaching for long without reading directly from textbooks or notebook shows mastery of the subject matter by the teacher and it increases students understanding	207	112	65	16	3.6	Accept
2.	Discussing many aspects of a topic at once shows that the teacher has mastery of the subject	220	102	40	38	3.4	Accept
3.	Teachers who teach using terms and terminologies of their subject has mastery of their subject and help students	112	100	91	97	2.7	Accept

S/N		SA	A	D	SD	MEAN X	DECISION
	understand the subject better						
4.	Answering questions from students concerning what is been taught is a sign that a teacher has mastery of the subject	186	149	46	19	3.6	Accept
5.	Teachers who can draw maps, rocks and other physical features has mastery of geography and inspire students to like and enjoy geography	126	143	107	24	2.9	Accept

Source: Field study, 2017

From table 2, items 1, 2, 3. 4 and 5 with the mean score rating of 3.6, 3.4, 2.7, 3.6 above the criterion mean of 2.5 shows a relationship between teachers' knowledge of subject matter and students' academic performance

Research Question 2: What is the relationship between teaching method and students' academic performance?

Table 4.2: Mean rating of the relationship between teaching method and students' academic performance

S/N	ITEMS	SA	A	D	SD	MEAN X	DECISION
1.	Teachers who use audio-visual aids help students understand their subject better	101	116	98	85	2.7	Accept
2.	Teachers who provide varied activities like story-telling, questioning and stimulus variation help students understand geography better	89	164	80	67	3.0	Accept
3.	Geography teachers who frequently take students on field trips help students understand geography better than those who don't	200	124	60	16	3.6	Accept
4.	Teachers who employ discussion and illustration teaching methods communicate better than those who use the lecture method	112	100	91	97	2.7	Accept
5.	Students understand Geography better when the teacher uses three dimensional aids like models, mockups than two dimensional aid like charts, graph, poster, etc.	120	116	88	76	2.9	Accept

Source: Field study, 2017

From table 3, items 1, 2, 3, 4 and 5 have mean rating of 2.7, 3.0, 3.6, 2.7 and 2.9. This been above the criterion mean of 2.5 shows a relationship between teachers' teaching method and students' academic performance

HYPOTHESIS ONE: There is no significant relationship between teacher's knowledge of the subject matter and student's academic performance.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.760[a]	.577	.559	5.69097

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4196.483	4	1049.121	32.393	0.000[b]
	Residual	3076.778	95	32.387		
	Total	7273.261	99			

The table shows that the Multiple Correlation Coefficient R has a value of 0.760 indicating a good level of prediction. The R Square value of 0.577 indicates that the independent variable explains 57.7% of the variability of the dependent variable. The F-ratio in the ANOVA table shows that the independent variables statistically predict the dependent variable.

$F_{(4,95)} = 32.393$, $p < 0.005$.

From the "Sig" column of the coefficient table, all the proxies of the independent variable are statically significant when

tested against the dependent variable. (0.000; 0.001; 0.000; 0.000; 0.000).

HYPOTHESIS TWO: There is no significance between teacher's teaching method and student's academic performance.

Table 4.4: Regression analysis of the relationship between teachers' teaching method and students' academic performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.739[a]	.553	.546	11.02166

ANOVA[a]

	Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	52835.76	8	6604.47	47.48	0.000[b]
1	Residual	98.760.76	710	139.10		
	Total	51596.52	718			

Table 4.4 shows the regression analysis showing the relationship between the independent variable (teacher's teaching method) and the dependent variable (student's academic performance).

The model summary table shows that the independent variable correlated positively with the dependent variable. The table shows a Multiple Correlation Coefficient (R) of 0.739 and a multiple adjusted R Square of 0.546. This means that 54.6% of the variance in the student's academic performance in geography termly exams is accounted for by the independent or predictor variable, that is, teacher's teaching method. With an F-statistics of 47.48 and a p-value of <0.005, the result shows a statistical significance between the independent and dependent variable.

V. CONCLUSION

The finding from the test of the two hypotheses and research questions that a significant relationship exist between the independent variables (teachers' knowledge of subject matter and teaching method) and the dependent variable (students' academic performance). This finding agrees with the observation of Majason (1995) in which he maintained that the mastery of relevant knowledge of subject matter is one of the most important attribute of the teacher which enhances students' performance. The finding is also supported by a similar finding in a study carried out by Abubakar (2014) on perception of the relationship between teacher quality and students'' academic performance in senior secondary schools in Kano metropolis. Abubakar (2014) maintained that teachers' knowledge of subject matter has strong relationship with students' academic performance.

The result further showed that teachers who frequently take students on field trips help students understand geography better than those who limit students to classroom experience. This finding is in tandem with the observation of Ekperi (2009) that Geography is more of a field experience than a classroom subject. Adeotiand Olafunke (2016) further validated this claim in their study which established a significant relationship between teachers' teaching style and students' academic performance.

From the above findings, students' academic performance depends largely upon the quality of the teacher, especially as it concerns knowledge of the subject matter and teaching method. Based on this, the study recommends that:

1. Government should embark on time to time and proper monitoring and evaluation of teachers to ensure that the teachers carry out their duties effectively in line with the guidelines for the teaching profession.
2. Teachers should be encouraged to adopt different teaching methods during teaching
3. Teachers should be encouraged to attend seminars, trainings and workshops both local and international so as to keep abreast of new and more effective teaching methods.
4. Teachers' Registration Council of Nigeria should introduce tests and examinations for teachers at regular intervals
5. Government should find possible means to retain veterans and experienced teachers who are still willing to serve so that they can contribute their wealth of experience to improving the system.
6. Teachers should be encouraged to frequently take students on field trips and funds should be made available by the school for this exercise.

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