



Impact of Teacher's Quality on Academic Performance of Students in Public Senior Secondary Schools in Maiduguri Metropolis, Borno State, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author MA designed the study and performed the statistical analysis. Author MGT wrote the protocol and wrote the first draft of the manuscript. Author BS managed the analyses of the study and the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

This study examined the impact of teacher quality on academic performance among public senior secondary schools, Maiduguri Metropolis, Borno State. Two (2) objectives and Two (2) null hypotheses were used for the study. Correlational design was used. The total population of the study was 1,236 teachers and 10,349 students out of which 371 teachers and 3,105 students were sampled through simple random sampling. SSCE results for five consecutive years (2014-2018) were obtained for the study. Questionnaire and Pro-forma were used for data collection at reliability index of 0.74. Data collected were analyzed using Pearson Product Moment Correlation coefficient at 0.05 level of significance. The study revealed a significant impact of teachers' qualification, teaching experience on students' academic performance. Based on the findings, it was recommended that ministry of education should organize workshops and seminars to re-train teachers in senior secondary schools in Borno State, Teaching Service Board should ensure that qualified and well trained are recruited in the schools in Borno state.

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1. INTRODUCTION

The quality of education depends on the quality of teachers and learning environment. [1], states that secondary education is an instrument for national development, development of individual for further education and development of society and quality of educational opportunity to all Nigerian children, irrespective of any disabilities. The quality of education is reflected through academic achievement which is a function of teacher quality. [2] observed that in the Nigerian school system; teacher quality could be assessed in various ways including teachers' qualification and teachers' competence. Therefore, teacher quality implies that there is a set of inputs that serve as indicators of who will be successful in the classroom.

Teachers at all levels of education play decisive roles in pivoting the growth and the direction of education in the state. It is an acceptable fact that teacher is the most important personnel in the educational sector and that teachers are highly 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 realizations of these programmes also depend greatly on teacher's dedication and commitment to their work.

Darling-Hammond [3] states that the characteristics of teacher quality are: verbal ability, subject matter knowledge, knowledge of teaching and learning and the ability to use a wide range of teaching strategies adapted to student needs. Quality of a teacher is another very influential determinant of the classroom environment. She further explained that variable of teacher quality include preparation and training, the use of a particular instructional approach and experience in teaching. The quality of education hinges on the quality of teaching that goes on in the classroom reinforcing the idea that quality teachers make up for the deficiencies in the curriculum and in educational resources. Teacher quality is widely thought of as an essential determinant of academic performance, yet there is little agreement as to what specific characteristics make an effective teacher [4]. It is deduced from the assertion that teacher quality is an important issue and also as the student performance can be a function of the depreciation rate of student learning, the total

variation of teacher quality (as measured by student performance on standardized tests) and the labor market return to one standard deviation of higher performance. Researchers, policy makers, parents and even teachers themselves agree that teacher quality matters. However, defining, measuring and identifying teacher quality is a far more controversial task.

Subject matter knowledge is another variable that one might think could be related to teacher quality. While there is some support for this assumption, the findings are not as strong and consistent as one might suppose. Studies of teacher's scores on the subject matter tests of the National Teacher Examination (NTE) have found no consistent relationship between this measure of subject matter knowledge and teacher performance as measured by student outcome or supervisory ratings [5]. According to studies carried out by [6] and [7], show small, statistically insignificant relationships between teacher quality and students' academic performance.

In Nigeria, the minimum teaching requirement is Nigeria Certificate in Education (NCE) as stipulated by the [7]. In some secondary schools within the state there were teachers who read mass communication and they are teaching English Language. Some are Bachelor of Art (B. A) or Bachelor of Science (B.Sc.) holders and this does not certify them as teachers. This is because there is shortage of teachers and high rate of unemployment, which has made so many people to go into teaching even when they are aware that they are not qualified to teach. Hence, such teachers lack the necessary professional skills, qualifications, techniques, and experience.

The primary purpose of teaching and learning process is to bring about in the learner desirable change in behaviour through critical thinking. This process however, does not take place in vacuum but in an environment structured to facilitate learning. Learning environment is a physical space that supports multiple and diverse teaching learning programmes including current technologies, one that demonstrates optimal, promotes effective performance and operation over time; one that respects and is in harmony with the environment; and one that encourages social participation, provides a healthy, comfortable, safe, secure and stimulating setting for its occupants. An effective teacher is perhaps

the most common and least precise of all terms. In good teaching, students are responsible for their learning; they are accountable for their understanding [8]. Good teaching is passionate, and it induces an emotional response in students, good teaching starts with inducing habits of mind, but doesn't stop there. Good teaching engages practical thinking and problems-solving skills that can be applied in a variety of settings and good teaching affects students' values, commitments, and identities [8].

Weiner [9] states that performance test is the type of test which throws light on the ability to deal with things rather than symbols. Then, for academic performance of students, it can be regarded as the observable and measurable behaviour of a student in a particular situation. For example, the academic performance of a student in civic education includes observable and measurable behaviour of student at any point in time during a course. In social studies academic performance consists of individual scores at any particular time obtained from either a teacher-made test or a standardized test. This statement is synonymous to the views of [10] who describe academic performance as the observable and measureable behaviour of a person and animal in a particular situation usually experimental situation. Academic performance measures the aspect of behaviour that can be observed at a specific period, this can be obtained with the use of either teacher-made test or standardized achievement test developed for school subjects.

As stated earlier, the definition of teacher quality indicates certain qualities that make a qualitative teacher. There are so many problems that are associated with teacher quality, more especially in our secondary schools in Borno state. Some view the quality problem as a concern about preparation. From this vantage point, teacher who completes university-based programs do not leave with the appropriate knowledge and practices to be effective in contemporary classrooms.

However, the societal expectation of quality outputs from the training institution makes students the primary focus of attention in any instructional programme and the better the learning environment (school), the better it can meet the goals of education and the society in general. Such goals include equipping students

with desirable skills, knowledge and attitudes that will enable them to work and live in the society of knowledge [11]. Teachers are expected to make teaching the learners' centered and create enabling environment for students to interact with learning materials in order to concretize their knowledge and skills so that they can become self-confident and self-reliant, and contribute meaningfully to the socio-economic development of the society.

It has been observed in the recent years that secondary schools in Borno state are not living up to expectation in delivering sound education as a result of inadequacy of well-trained teachers, instructional materials, facilities, substandard learning environment and over population in the system. It was against this background that this study was carried to examine teachers' quality as determinant of students' academic performance in public senior secondary schools in Maiduguri metropolis.

1.1 Objectives of the Study

The main objective of this study is to determine the impact of Teacher Quality on Academic Performance among Public Senior Secondary Schools Students' in Maiduguri Metropolis, Borno State and the specific objectives were:

1. To find out whether teacher qualification determines students' academic performance in Public Senior Secondary Schools in Maiduguri Metropolis, Borno State.
2. To find out whether teacher years of teaching experience determines students' academic performance in Public Senior Secondary Schools in Maiduguri Metropolis, Borno State.

1.2 Hypotheses

The following hypotheses were tested at .05 level of significance; there is no significant relationship between:

- H₀₁:** Teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis, Borno State.
- H₀₂:** Teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis, Borno State.

2. MATERIALS AND METHODS

2.1 Design and Participants

Correlational design was adopted for this study. Correlational design determined relationship between teachers' quality and students' academic performance in public senior secondary schools in Maiduguri Metropolis. [12] maintained that, correlational design is interested in the relationship between two variables or among variables. The population for this study comprised all the 1,236 teachers, and all WAEC results of SS3 students who graduated from 2014-2018 which comprises 10,349 students, in the 16 public senior secondary schools, Maiduguri Metropolis. Simple random sampling was used in drawing sample for the study.

Johnson and Christensen [12] viewed that; researcher should use large sample in order to minimize error deviation from the target population. This means that the larger the sample size, the more representative of the population it accommodates and therefore the more reliable and valid the result will be. A total of 371 teachers and 3105 SS3 students representing 30% of the population were systematically selected for the study. This is in line with the principles of simple random sampling. [13] states that, simple random sampling gives every member of a population an equal chance to be selected for a study.

2.2 Instruments

The instruments used in this study were Teachers Questionnaire (TQ) and pro-forma. Questionnaire: a set of questionnaire was designed by the researcher, which was used to collect the responses on the relationship between teachers' quality. Section A: was on demographic information. Section B: covered the areas raised in the objectives. Pro forma was used to collect information from academic records; pertaining to students' academic performance in the senior secondary schools of the sixteen (16) selected senior secondary schools for a period of five years (2013-2018). The subjects to be measured were Mathematics, English, (Biology, Chemistry and Physics). These subjects were chosen for the study on the ground of being core subjects which are offered in all the senior secondary schools. A pilot study was conducted on TQ using *Cranach's' Alpha* method to determine the reliability of the teachers' questionnaire and a reliability coefficient of .74

was obtained at .05 level of significance. This shows that the instrument was reliable for the purpose of this study.

2.3 Procedure

The researcher obtained an introductory letter from Borno state Ministry of Education to the Chairman Teaching Service Board (TSB)/ Director Education Resource Centre (ERC) and principals of the selected schools for formal introduction and permission to conduct the study. The researcher administered the instruments to the respondents where the study was conducted each TQ was attached with a cover letter from the researcher soliciting for teachers' cooperation to provide the data needed for the study. Pro-forma was used to collect information from academic records at the ERC. The distribution and retrieval of the instruments were done in two days. Pearson Product Moment Correlation coefficient (PPMC) was used to test the hypotheses at $P < 0.05$ level of significance.

3. RESULTS AND DISCUSSION

3.1 Hypothesis 1 (H_{01})

There is no significant Relationship between teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis.

The analysis in Table 1 shows a significant impact between teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis. This is because the probability value ($P = 0.004$) is less than alpha ($\alpha = 0.05$) level of significance at correlation index (0.672), degree of freedom (740) and mean (35.1, 62.4) and standard deviation (2.83, 1.21) respectively. Hence, the null hypothesis which stated that there is no significant relationship between teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis is hereby rejected at 0.05 level of significance. It can be deduced that teachers' qualification is one of the determinants of students' academic performance in senior secondary schools in Maiduguri metropolis.

The first finding revealed a significant relationship between teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis. This

finding agrees with findings of [14] who conducted a study on the relationship between the professional qualification of the teachers' and academic performance of their students at secondary school level in Adamawa State. It was found that the performance of the students taught by trained teachers with professional qualifications like B.Ed. and M.Ed. was better than the students taught by untrained teachers with B.A. / B.Sc. qualifications. Supporting this finding is also a study conducted by [15] on the relationship between teachers' qualification, attitude and students' achievement in Osun state Nigeria. Findings of the study showed that teachers' qualifications were significantly related to students' academic achievement. The study further revealed that the higher the teachers' qualifications, the better the academic achievement of the students.

3.2 Hypothesis 2 (H₀₂)

There is no significant relationship between teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis.

The data in Table 2 shows a significant relationship between teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis. This is because the probability value (P = 0.000) is less than alpha ($\alpha = 0.05$) level of significance at correlation index (0.752), degree of freedom (740), mean (41.7, 62.4) and standard deviation (1.93, 2.83) respectively. Hence, the null hypothesis which stated that there is no significant relationship between

teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis is hereby rejected at 0.05 level of significant. It can be inferred that teachers' years of teaching experience determines students' academic performance in senior secondary schools in Maiduguri metropolis.

The second finding revealed a significant relationship between teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis. This finding aligns with the findings of [16] who conducted a study on comprehensive analysis of teachers' experience and students' academic performance in public senior secondary schools in Ekiti State. The study found a positive correlation between years of teachers' experience and students' academic performance. They also found that an experienced teacher in secondary school has the following: stimulation variation, set induction and closure. According to them, stimulate variation means an experienced teacher used stimulating material and variation, in movement, gestures, interaction techniques and sensory channels in order to alleviate boredom and inattentiveness of students. Set induction means an experienced teacher prepares students for lesson by clarifying its goals, relating to the students' previous knowledge and skills, by using analogies, demonstrations, and making teaching and learning interesting. Closures means an experienced teacher assists students to establish links between new and past knowledge by reviewing and applying materials to familiar and new examples, cases and situations.

Table 1. Pearson product moment correlation coefficient on the relationship between teachers' qualification and students' academic performance in public senior secondary schools in maiduguri metropolis

Variable	N	\bar{x}	SD	DF	r	P-value
Teachers' qualification	371	35.1	1.21	740	0.672	0.004
Performance	371	62.4	2.83			

Source: Field survey, 2020

Table 2. Pearson product moment correlation coefficient on the relationship between teachers' years of teaching experience and students' academic performance

Variable	N	\bar{x}	SD	DF	r	P-value
Teaching Experience	371	41.7	1.93	740	0.752	0.000
Performance	371	62.4	2.83			

Source: Field survey, 2020

The study revealed that, students taught by teachers with more than five years of teaching experience performed better in West African Examination Council senior secondary school certificate (SSCE) and National Examination Council (NECO) in 2001/2002 session. The study suggested that experienced teachers should teach senior secondary school to prepare them for external examination. The study concurs with [17] who maintained that, there is correlation between teachers teaching mathematics with more than five years teaching experience and students' academic performance in senior secondary schools. Teachers with more years of teaching experience were more effective and had good method of reinforcing students in classroom participation [17].

3.3 Summary of Major Findings

The study revealed that;

1. There was a significant relationship between teachers' qualification and students' academic performance in public senior secondary schools in Maiduguri metropolis.
2. There was a significant relationship between teachers' years of teaching experience and students' academic performance in public senior secondary schools in Maiduguri metropolis.

4. CONCLUSION

Based on the findings, the study concluded that Teachers' quality has great impact on students' academic performance; this implied that qualified teachers with good working experience results in better academic performance among public senior secondary schools in Maiduguri. Based on the findings of the study, the following recommendations were made:

1. Teaching Service Board should ensure that trained and qualified teachers are recruited in to schools in Borno state.
2. The ministry of education should organize workshops and seminars to re-train teachers in public senior secondary schools in Borno State.

CONSENT

As per international standard or university standard, consent from the Ministry of education was collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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