

INFLUENCE OF ADEQUATE UTILIZATION OF TEACHING FACILITIES AND TEACHER SUBJECT MASTERY ON PUBLIC SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENTS IN MAIDUGURI METROPOLIS, BORNO STATE.

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Abstract

This study examined the Influence of Adequate Utilization of teaching Facilities and Teacher Subject Mastery on Public Secondary School Students Academic Achievements in Maiduguri Metropolis, Borno State. Two objectives and two research questions were formulated to guide the study. Correlational research design was used to conduct the study. The population of the study comprised 3,986 teachers in Maiduguri Metropolis and the sample was 353. This is in line with the Research Advisor's (2006) Sample size table. The study used questionnaire as instrument the questionnaire has 10 items adopted and modified by the researchers was used for data collection. A pilot study of the instrument was conducted. Pearson's Product Moment Correlation Coefficient (PPMC) was used to test the hypotheses at 0.05 level of significance. Findings of the study revealed that there is strong positive relationship between teachers' knowledge of subject content and utilization of teaching and learning facilities and there is strong positive relationship between teachers' methodologies and utilization of teaching and learning facilities. The study concludes that teachers who possess strong knowledge of subject matter and effective teaching methodologies are more likely to utilize teaching and learning facilities effectively, which can enhance student learning outcomes. Based on the findings, it was recommended that National Commission for Colleges of Education and Management of the Colleges should ensure thorough grounding of pre-service teachers with skills and technological competencies so as to abreast with the challenges of our contemporary societies.

Keywords: Teachers subject mastery, teaching facilities, academic achievements.

Introduction

The quality of education is a critical factor in determining the academic achievement of students. Teaching subject mastery, teacher effectiveness and availability of teaching facilities are essential components of quality education. However, many schools, particularly in developing countries, face challenges in providing adequate teaching facilities and ensuring teacher subject mastery, which can negatively influence students' academic achievement (Isa, 2022).

In Nigeria, the government has implemented various policies aimed at improving the quality of education, including teachers training programme and provision of teaching facilities. Despite these efforts, many schools continue to struggle with inadequate teaching facilities, poorly trained teachers and low students' academic achievement (Bashir, 2022). The quality of teaching and learning in secondary schools is influenced by various factors, including teachers' knowledge of subject matter and their utilization of teaching and learning facilities. Teacher's knowledge of subject content is critical in delivering effective instruction, while teaching and learning facilities can enhance students' engagement and understanding of the relationship between these two factors can have a significant influence on student learning outcomes. According to Bashir (2022) teachers characteristics and subject mastery play a crucial role in

determining student academic performance. Effective teachers with strong subject knowledge can create a positive learning environment, leading to improved student outcome. Teachers' skills are done systematically by professionals who have acquired some skills and knowledge either by training or experience or both. To make desirable impact, teaching must aim at the total development of the individual and enhancing the intellectual and cognitive, developmental, foster Psycho-social skills, and draw out neuro-physical aptitude of the learners (Akinmusire, 2012).

According to Adeniyi (2020) found that there is significant positive relationship between level of teacher's knowledge of subject content for teaching in Secondary Schools. Similarly, Shuaibu (2019) asserted that there is significant positive influence of infrastructural facilities on teachers' knowledge of subject mastery for teaching in Senior Secondary Schools. Another study by Ntibi, Neji and Agube (2020) shows that there was a significant influence on teachers' perception of knowledge of subject content and academic achievement. Secondly, finding revealed that mode of lesson presentation has significant influence on student's academic performance.

Kutub, Wijayanti and Manuharawati (2019) revealed that teachers' knowledge of subject content in fraction was effective to students' performance. Similarly, Kamamia, Ngugi and Thinguri (2019) reported that when a student teacher is able to interpret and apply the subject matter knowledge learnt in the class, it makes a huge influence on the learner and the student teachers are able to make contributions which positively changes the environment. Sambo (2018) asserted that there is significant relationship between teaching methodology and utilization of facilities in Senior Secondary Schools. Another study by Elisha (2021) who reported that there was no significant difference between the perception of male and female students regarding the influence of lecture method. Also, Corroborating Abdulraheem and Amali (2020) asserted that positive Correlation between teacher's methodologies and students' performance in subject areas while there was no correlation between teachers' use of instructional materials and students' performance.

Similarly, Isa, Mamman, Badar and Bala (2020) found that most of the teachers' methods of teaching have significant effect on students' academic performance. In the same vein Nsungu and Mbia (2019) found that student taught with peer tutoring, problem-based learning and cooperative methods achieve significantly higher than those taught using the conventional method.

Statement of the Problem

Despite the importance of teachers' knowledge of subject mastery and utilization of teaching and learning facilities, there are concerns about the effectiveness of teaching and learning in secondary schools. The researchers have observed that teachers in secondary schools' battle with knowledge of subject content which can impact their ability to deliver effective instruction, as a result teaching and learning facilities may not be utilized effectively, leading to missed opportunities for enhancing student learning. The selection of subject knowledge and the methods in which the material is provided are critical to the effectiveness of a lesson since the knowledge that the instructors possess determines the skills that are transferred to the students. Having the abilities to convey material is critical to the success of a class, and the essential skills displayed by the teacher demonstrate the teacher's commitment and experience in terms of topic, knowledge and skills.

Students have been performing below average in subjects over the years as shown by their terminal examination. Do teachers/instructors in different schools around the state demonstrate

this due to the knowledge of subject content and abilities? This study therefore, sought to examine the relationship between teachers' knowledge of subject content and utilization of teaching and learning facilities in secondary schools in Maiduguri Metropolis, Borno State.

The researchers have also observed that many teachers in public secondary schools may not have possessed adequate knowledge of subject mastery, and even when they do, they may not have effectively utilize teaching materials to support student learning. This can lead to poor student academic achievement, limited understanding of concepts and lack of interest in learning. While existing research has established the importance of teacher's knowledge of subject mastery and utilization of teaching materials, there is a need to investigate the specific dynamics of this relationship in the context of public secondary schools in Maiduguri metropolis, Borno State.

Objectives of the study

The following objectives of the study were formulated to:

1. Examine the influence of teachers' knowledge of subject mastery and utilization of teaching materials on public Secondary School Students in Maiduguri Metro polis, Borno state
2. Examine the influence of equipping teachers with methodologies and utilization of teaching materials on public Secondary School Students in Maiduguri Metro polis, Borno state.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H₀₁: There is no significant influence between the teacher's knowledge of subject mastery and utilization of teaching materials on public Secondary School Students in Maiduguri Metropolis, Borno State.

H₀₂: There is no significant influence between equipping the teachers with subject mastery and utilization of teaching materials on public Secondary School Students in Maiduguri Metropolis, Borno State.

Methodology

Correlational research design was used for this study. Correlational research design seeks to establish a relationship between two or more variables to see if they relate with each other (Cresswell, 2012). The population of the study comprised 3,986 and the sample was 353 teachers in Maiduguri Metropolis. This is in line with the Research Advisor's (2006) Sample size table. The study used questionnaire as instrument for data collection, the questionnaire has 10 items adopted and modified by the researchers and was used for data collection. A pilot study of the instrument was conducted in other schools that were not part of the main study to measure the reliability coefficient using Cronbach's Alpha to obtain value of 0.78 for the instrument. Pearson's Product Moment Correlation Coefficient (PPMC) was used to test the hypotheses at 0.05 level of significance.

Results

H₀₁: There is no significant influence between teacher's knowledge of subject mastery and utilization of teaching materials on public Secondary School Students in Maiduguri Metropolis, Borno State.

Table 1: Pearson’s Product Moment Correlation Coefficient on influence of teacher’s knowledge of subject mastery and utilization of teaching materials on public Secondary School students in Maiduguri Metropolis, Borno State.

Variable	N	Mean	SD	R	p-value	Remark
Knowledge of subject content	353	23.68	4.18	0.781	0.00	Reject H ₀₁
Utilization of teaching and learning facilities	353	28.65	3.71			

Table 1 presents the summary of the Pearson Product Correlation Coefficient on the influence of teachers’ knowledge of subject mastery and utilization of teaching material on public Secondary School Students in Maiduguri Metropolis, Borno State. The result revealed that, there is strong positive relationship between level of teachers’ knowledge of subject content and utilization of teaching and learning facilities in Secondary Schools in Maiduguri Metropolis, Borno State because with Pearson Product Moment Correlation Coefficient $r = 0.781$. The results further revealed that, the relationship between level of teachers’ knowledge of subject content and utilization of teaching and learning facilities in Secondary Schools is significant with p-value (0.000) which is less than the level of significant (0.05). Therefore, hypothesis one is rejected.

H₀₂: There is no significant influence between equipping teachers with methodologies and utilization of teaching materials in public Secondary Schools in Maiduguri Metropolis, Borno State.

Table 2: Pearson’s Product Moment Correlation Coefficient on influence of equipping teachers with methodologies and utilization of teaching materials on Public Secondary School Students in Maiduguri Metropolis, Borno State.

Variable	N	Mean	SD	R	p-value	Remark
Methodologies	353	23.68	4.18	0.702	0	Reject H ₀₂
Utilization of teaching and learning facilities	353	24.86	4.01			

Table 2 presents the summary of the Pearson Product Moment Correlation Coefficient on the influence of equipping teachers with methodologies and utilization of teaching materials on Public Secondary School Students in Maiduguri Metropolis, Borno State. The result revealed that, there is strong positive influence of equipping teachers with methodologies and utilization of teaching materials on Public Secondary School Students in Maiduguri Metropolis, Borno State because the value of Pearson Product Moment Correlation Coefficient is $r = 0.702$. The results further revealed that, the relationship between level of equipping teachers with methodologies and utilization of teaching and learning facilities in Secondary Schools is significant with p-value (0.000) which is less than the level of significant (0.05). Therefore, hypothesis two is rejected.

Discussion of Findings

Findings on influence of teacher’s knowledge of subject mastery and utilization of teaching materials on public secondary school students in Maiduguri Metropolis, Borno State.

Hypothesis one revealed that there is positive influence between level of teacher's knowledge of subject mastery and utilization of teaching materials on Public Secondary School Students. This finding is in agreement with Adeniyi (2020) who revealed there is significant positive relationship between level of teacher's knowledge of subject matter and utilization of teaching and learning facilities in secondary schools. Similarly, Shuaibu (2019) also reported that there is significant positive influence of teaching and learning facilities on teacher's knowledge of subject content in secondary schools. This finding is also in consonance with Ntibi, Neji and Agube (2020) who reported that there was a significant influence on student's perception of teacher knowledge of subject matter and academic achievement.

Secondly, finding revealed that mode of lesson presentation has significant influence on student's academic performance. In the same vein, Kutub, Wijayanti and Manuharawati (2019) revealed that teacher's knowledge of subject content in fraction was effective to students' performance. In addition, there were also similarity in the pattern of student performance test on fraction and the teacher's answers based on the results of the content knowledge test. Kamamia, Ngugi and Thinguri (2019) also reported that when a teacher is able to interpret and apply the subject matter knowledge learnt in the class, it makes a huge impact on the learners and the teachers are able to make contribution to positively change their environment. The implications of these findings for level of teacher's knowledge of subject content for teaching profession by gender is that equal opportunities for teaching and learning should be provided for all male and female teachers to enable them achieve their ultimate goal.

Findings on influence of equipping teachers with methodologies and utilization of teaching materials on Public Secondary School Students (null hypothesis two) revealed that there is strong positive influence between equipping teachers with methodologies and utilization of teaching materials on Public Secondary School Students. This finding is in line with Sambo (2018) who revealed that there is significant relationship between teaching methodologies and utilization of teaching and learning facilities in secondary schools. This finding is in contrast with Elisha (2021) who reported there was no significant difference between the perception of male and female students regarding the influence of lecture method, demonstration and project methods on students' academic performance. Also, Corroborating Abdulraheem and Amali (2020) asserted that positive Correlation between teacher's methodologies and students' performance in subject areas while there was no correlation between teachers' use of teaching and learning facilities and students' performance. These findings are in consonance, with Isa, Mamman, Badar and Bala (2020) which found that most of the teachers' methods of teaching have significant effect on students' academic performance using teaching and learning facilities. In the same vein Nsungo and Mbia (2019) found that student taught with peer tutoring, problem-based learning and cooperative methods achieve significantly higher than those taught using the conventional method. These findings suggest that teachers should imbibe learner centered approach of teaching as it encourages and motivates students to participate actively in class activities.

Conclusion

From the findings of the study, teachers who possess strong knowledge subject mastery and use teaching strategy are more likely to utilize teaching materials effectively, which can enhance student leaning outcomes. Therefore, it is essential to prioritize teacher training and development programme that focus on enhancing teachers' knowledge of subject mastery and teaching methodologies as well as providing access to relevant teaching and learning facilities

Recommendations

Based on the findings, the following recommendation were made.

1. Teachers should be allowed to go for development training and opportunities for teachers to enhance their knowledge of subject content and teaching methodologies
2. Teachers should be motivated regularly by principals to be able to give the best.
3. There should be adequate provision of teaching and learning facilities in schools to enable smooth teaching and learning.

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Research Advisor's (2006) Sample size table SAVI Handout 2c - 2

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