



Availability of Instructional Materials on Students' Academic Performance in Senior Secondary Schools in Maiduguri Metropolis, Borno State

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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 AB wrote the protocol and wrote the first draft of the manuscript. Authors SBA and DA 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 availability of instructional materials and students' academic performance in senior secondary schools, Maiduguri Metropolis, Borno State, Nigeria. Two (2) objectives and a null hypothesis were used to determine the availability of instructional materials and students' academic performance in senior secondary schools in Borno state. Survey and Correlational design were 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 of the 2014-2018 academic sessions were obtained for the study. Checklist and Pro-forma were used for data collection. Data collected were analyzed using Pearson Product Moment Correlation coefficient, frequency and percentage at 0.05 level of significance. The study revealed a significant relationship between availability of instructional materials and students' academic performance in senior secondary schools in Maiduguri Metropolis. The study also found that the instructional materials for teaching and learning are available. Based on the findings, it was recommended that government and other stakeholders

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should continue to support schools in the state with the necessary instructional materials needed for teaching and learning and School administration should emphasize the use of instructional materials to make learning easier.

Keywords: Instructional materials; students; academic performance.

1. INTRODUCTION

Instructional material or learning material is what is used by the teacher to assist in providing information for the attainment of required learning experience. It helps the learner turn to for information in the process of his goal-seeking endeavor or learning inside or outside the classroom [1]. [2] opined that instructional materials help to arouse and sustain interest and help to concretize ideas and stimulate the imaginations of the students. They also state that the instructional resources should be usable and economical in terms of cost. Both teachers and students should have access to learning/instructional materials. If learning resources are too expensive to acquire, or hard to reach then teachers and students will be disillusioned and achievement of students will tend to be low.

[3] maintained that lessons in Cultural and Creative Arts (CCA) are supposed to be practical, but due to lack of necessary materials and facilities for learning, they are turned into theory lessons. There is problem of lack of materials and CCA cannot be taught well. [4] observed that instructional materials are lacking in schools and this affects the teaching and learning. The teaching and learning CCA is possible with art materials which are readily available and serve as a substitute to commercial art materials. [5] observed that the continued mass failure in drama was as a result of non-availability of instructional resources and facilities which make students to naturally lose interest.

Interest affects learners' participation in school activities. Children like to play with objects which tend to arouse their interest. Teachers use instructional resources to arouse interest in the students. The use of instructional resources motivates learners. When instructional materials are not used, learners will not be so interested in learning. In CCA instructional materials have the power to attract or hold one creativity and originality in a person. Creative mind is disposed to create ideas and rearrange existing patterns to get something novel and spectacular [6]. When learning activities arouse interest learning

becomes more significant, meaningful and enjoyable [7].

The use of relevant and appropriate instructional resources will enhance achievement of students in a subject. Achievement of students can be low or high. Students fail to do well because of lack of interest in, the content or the instructional resources used. The weakness students' exhibit in some school subjects confirms that something is wrong in the way such subjects are taught. According to [8], some factors responsible for poor performance of students are psychological and environmental. [9], lamented that music text books, tools, equipment and workshop which make teaching and learning effective are not easy to come by. Musical instruments make music what they are and if they are not available, the teaching and learning of drama and music will be impossible. Lack of instructional resources in the area of music and drama tends to affect learners' achievement in music and drama. Indigenous resource materials may be a way out in the learning of drama in schools.

[10] the location of a school determines learning facilities, infrastructure and the class size. Adequate provision of these facilities may facilitate or hinder learning. School location may also affect the outcome of the use of local resources in the teaching and learning. [11], indicated that availability and effective use of instructional materials influence the selection of teaching methods. Students are aroused or motivated when instructional materials are available.

A study was conducted by [12] on effect of instructional material on the teaching and learning of social studies in secondary schools on Oju local government area of Benue state. The research as guided with 4 objectives, 4 research questions and hypotheses. A survey design was adopted and both (2000) students and (47) teachers constituted the population for the study. A sample of one hundred respondents was drawn from five schools and questionnaire was used for data collection. Data collected was analysed using simple percentage for research and chi-square for hypotheses. The study

revealed that selection of relevant instructional materials, availability and ability of the teacher to improve all had significant relationship with the teaching and learning of social studies in Oju local government area. It was recommended that government and school heads should ensure the provision of instructional materials in secondary schools.

In a study conducted by [13] on effect of instructional materials on students' academic performance in social studies in selected secondary schools in Etung local government area, Cross River state, Nigeria. Descriptive survey design was adopted; the population of the study was JSS 2 students of 2013/2014 session selected randomly. Questionnaire was used to collect data. Data collected was analysed using simple percentage. The finding revealed that instructional materials effect on teaching of social studies.

Similarly, [14] conducted a study on impact of instructional aid on students' academic performance in Physics in secondary schools in federal Capital Territory (FCT) Abuja, Nigeria. The population of the study was limited to secondary to secondary schools in three area councils of the FCT. The sampled schools used for the research had a total of 3150 students with teaching staff strength of 163. The study was carried out among the SS2 and SS3 physics students and their teachers. Descriptive survey method was adopted; questionnaire was used for data collection. Data collected was analysed using frequency count and percentage. The study revealed that there was a significant difference in academic performance of students taught with instructional aid.

Students' academic performance can be determined in any of the subjects offered in senior secondary schools, by conducting performance test. [15] describe performance test as the type of mental test in which the subject is asked to do something rather than to say something. 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. It was against this background that this study sought to determine the influence of availability of instructional material on students' academic performance in senior secondary schools Maiduguri Metropolis, Borno State.

1.1 Purpose of the Study

The study had two purposes which were to determine: the availability of instructional materials in senior secondary schools in Maiduguri Metropolis, Borno state and how the availability or otherwise affects the students' academic performance. It was hypothesized that there is no significant relationship between availability of instructional materials and students' academic performance in senior secondary schools in Maiduguri Metropolis, Borno state.

2. MATERIALS AND METHODS

2.1 Design and Participants

Survey and Correlational design were adopted for this study. Survey design describes the attitudes, opinions, behaviour or characteristics of a population. [16] survey research design has the advantage of uniqueness since information gathered is not available from other sources, having unbiased representation of population of interest and standardization of measurement as same information is collected from every respondent.

Correlational design determined relationship between availability of instructional materials and students' academic performance in senior secondary schools in Maiduguri Metropolis, Borno State. [17] 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, Borno State. Simple random sampling was used in drawing sample for the study. 371 teachers and 3105 SS3 students representing 30% of the population was systematically selected for the study. This is in line with the principles of simple random selection. [18] were of the opinion that a sample drawn by a procedure which every member of the population has an equal chance to be selected in the study.

2.2 Instruments

Checklist and pro-forma were used in this study. Checklist was used to determine the availability of the instructional materials. 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 (2014-2018). 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.

2.3 Procedure

The researcher obtains an introductory letter from Borno state Ministry of Education to the Director Education Resource Centre (ERC) and principals of the selected schools for formal introduction and permission to conduct the study. The researcher checks the availability of the resources in the selected schools. Pro forma was used to collect information from academic records at the ERC. The exercise was done in two weeks. Pearson Product Moment Correlation coefficient (PPMC), frequency and percentage were used for data analysis and hypothesis testing at .05 level of significance.

3. RESULTS AND DISCUSSION

Table 1 shows that instructional materials are at 69.2% available the available materials are 1.9% adequate, 11.4% inadequate and 17.5% unavailable. The result of this study revealed that the instructional materials are available in the sampled schools.

Table 2 depicts a significant relationship between instructional materials and students' academic performance in senior secondary schools in Maiduguri metropolis. This is because the probability value (P = 0.000) is less than alpha (α = 0.05) level of significance at correlation index (0.813), degree of freedom (740) and mean (60.0, 62.4) and standard deviation (2.00, 2.83) respectively. Hence, the null hypothesis which stated that there is no significant relationship between instructional materials and students' academic performance in senior secondary schools in Maiduguri metropolis is hereby rejected at 0.05 level of significance. This means that instructional materials are determinant of students' academic performance in senior secondary schools in Maiduguri metropolis.

The result of this study revealed significant relationship between availability of instructional materials and students' academic performance in senior secondary schools in Maiduguri metropolis. This finding is in consistent with the finding of [19] who conducted a study on the effects of instructional materials on achievement and retention of Biology concepts among secondary school students in Delta state, Nigeria. The use instructional resources may likely help the teachers to arouse the interest of their students. This is because it motivates learners to learn. The use of relevant and appropriate instructional resources will enhance achievement of students in a subject. Creative mind is disposed to create ideas and rearrange existing patterns to get something novel and spectacular [6].

Table 1. Frequency and percentage distribution on availability of instructional material

| S/N | Scale | Frequency | Percentage% |
|-------|-------------|-----------|-------------|
| 1 | Available | 254 | 69.2 |
| 2 | Adequate | 7 | 1.9 |
| 3 | Inadequate | 42 | 11.4 |
| 4 | Unavailable | 66 | 17.5 |
| Total | | 371 | 100% |

Key: INAD=49% and below, ADQ=50% and above
Source: Field survey, 2020

Table 2. Pearson product moment correlation coefficient on the relationship between availability of instructional materials and students' academic performance in senior secondary schools in Maiduguri metropolis

| Variable | N | \bar{x} | SD | DF | r | P-value |
|-------------------------|-----|-----------|------|-----|-------|---------|
| Instructional materials | 371 | 60.0 | 2.00 | 740 | 0.813 | 0.000 |
| Performance | 371 | 62.4 | 2.83 | | | |

Source: Field survey, 2020

4. CONCLUSION

In conclusion, the availability of instructional materials improves students' academic performance in secondary schools; this implied that if teaching materials are available to various subjects' requirements, it results in better academic performance. Teachers use instructional resources to arouse interest of the students. When learning activities arouse interest, learning becomes more significant, meaningful and enjoyable [7]. The use of relevant and appropriate instructional resources will enhance achievement of students in a subject.

5. RECOMMENDATION

Based on the findings of the study, the following recommendations were made:

1. Government and other stakeholders should continue to support schools in the state with the necessary instructional materials needed for teaching and learning.
2. The school administration should emphasize the use of instructional materials to make learning easier.

CONSENT

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

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX I

CHECKLIST ON THE AVAILABILITY OF INSTRUCTIONAL MATERIALS

Instructional Materials

| S/N | Items | RESPONSE | | | |
|-----|--|----------|----|-----|-----|
| | | AV | AD | IAD | UNA |
| | | 4 | 3 | 2 | 1 |
| 1. | Textbooks | | | | |
| 2. | Science equipment (chemicals, specimen, tools) | | | | |
| 3. | Projectors | | | | |
| 4. | Films | | | | |
| 5. | Videos | | | | |
| 6. | Charts | | | | |
| 7. | Computer | | | | |
| 8. | Illustrative Pictures | | | | |

KEYS: AV= Available, UNA= Unavailable, AD = Adequate, IAD = Inadequate

APPENDIX II

Pro-forma for SSCE (WASSCE) Students' Academic Performance in Maiduguri Metropolis, Borno State

School:.....

| WAEC 2014 | | | | | |
|-----------------|---|---|---|-----|---|
| Subjects/grades | A | B | C | D&E | F |
| English | | | | | |
| Mathematics | | | | | |
| Chemistry | | | | | |
| Physics | | | | | |
| Biology | | | | | |

| WAEC 2015 | | | | | |
|-----------------|---|---|---|-----|---|
| Subjects/grades | A | B | C | D&E | F |
| English | | | | | |
| Mathematics | | | | | |
| Chemistry | | | | | |
| Physics | | | | | |
| Biology | | | | | |

| WAEC 2016 | | | | | |
|------------------------|----------|----------|----------|----------------|----------|
| Subjects/grades | A | B | C | D&E | F |
| English | | | | | |
| Mathematics | | | | | |
| Chemistry | | | | | |
| Physics | | | | | |
| Biology | | | | | |

| WAEC 2017 | | | | | |
|------------------------|----------|----------|----------|----------------|----------|
| Subjects/grades | A | B | C | D&E | F |
| English | | | | | |
| Mathematics | | | | | |
| Chemistry | | | | | |
| Physics | | | | | |
| Biology | | | | | |

| WAEC 2018 | | | | | |
|------------------------|----------|----------|----------|----------------|----------|
| Subjects/grades | A | B | C | D&E | F |
| English | | | | | |
| Mathematics | | | | | |
| Chemistry | | | | | |
| Physics | | | | | |
| Biology | | | | | |

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