

EFFECT OF TEACHING AIDS ON STUDENTS' ACADEMIC PERFORMANCE IN ENGLISH LANGUAGE IN SELECTED PUBLIC SENIOR SECONDARY SCHOOLS IN KANO METROPOLIS: IMPLICATION FOR POLICY MAKING

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Abstract (In English). *The paper examined the effect of teaching aids on students' academic performance in English language in selected public senior secondary schools in Kano metropolis, Nigeria. Three research Questions, three objectives and three research hypotheses guided the study. Experimental research design was adopted for the study. Population of the study consisted of five public senior secondary schools in Kano metropolis with a total of 1390 SS 2 students. Research advisor (2006) was used to determine the required sample size for the study, and it recommended a sample size of 306. A simple random sampling technique was used to select the sample size required by the study Data was collected using an instrument titled "Utilization of Teaching Materials and Academic Performance Questionnaire (UTMAPQ)". Reliability of the instrument was obtained using a test-retest method within an interval of 6 weeks. A reliability index of 0.74 was obtained through the Cronbach Alpha Co-efficient. The instrument has 20 items which are open ended questions. Hypotheses generated were tested using independent T-test at 0.05 level of significance. Findings from the study indicated among others that: Audio-visual teaching aids have statistically significant positive effect on public secondary school students' academic performance in Kano metropolis. The study recommended among others that: Instructional materials such as print media and audio-visuals should be made available to teachers for effective teaching and learning.*

Keywords: *Teaching Aids, Instructional Materials, Audio-Visuals, Print Media, and Academic Performance.*

INTRODUCTIONS

The deployment and use of teaching aids to promote teaching and learning in Nigerian schools is not a recent development. The innovations brought about by technological advancement and introduced into the teaching and learning process are what is new. Globally, both educational practitioners and researchers have acknowledged that in response to the innovations brought about by technological breakthroughs, efforts have been made towards improvement of



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the application of teaching aids to the teaching and learning process. Akande pointed out that teaching aids are very essential in the delivery of any subject in the classroom.¹ Akande defines instructional materials as things that assist the teacher to perform well in the classroom, thereby helping students to learn effectively.²

Teachers' credible performance in the classrooms using instructional materials can make students record better academic achievement in the school. Adesumaju submitted that both teacher's effectiveness and proper use of instructional materials add to students' academic performance in the English language as a compulsory subject in schools.³ Academic performance means the ability of a student as measured in some form of standard assessment. Ordu and Amadi defined academic performance as the extent to which a student, teacher, and institution have performed their short- and long-term educational goals. This means the ability to attain the desired objectives which might be assessed through standardized tests such as end-of-the-term assessments or final-year examinations.⁴

Section 10 of the National Policy on Education highlighted the objectives of instructional materials as to; enhance teaching and improve the competence of teachers, make learning more meaningful to students, and develop the effective use of innovative materials in schools.⁵ This is to show that, the teacher alone cannot provide all necessary conditions for effective teaching and learning to occur. Thus, other supporting materials must be utilized. This is because students learn and assimilate better when most of the senses are appealed to by the instruction and the use of instructional materials provides the required sensory experiences needed by the learners for an effective and meaningful behavioral change. Ajayi *et al* equally observed that teaching aids promote learning by aiding the senses of seeing, hearing, and touching, they direct teaching to its goals, make learning interesting, arouse the interest of students and motivate them to learn.⁶

Ibrahim classified instructional aids as printed and reference materials, graphic materials, display materials, projected materials, audio and visual materials and community resource. Here it is critical that teachers keep in mind the purpose for which these instructional materials are used, the characteristics and the special need of pupils to be taught by using them and the bases for selecting the materials must be to help the learners achieve the objectives of their study. Therefore, a teacher should know when to use concepts rather than explaining it in a textbook, when to go embark on a field trip, when to assign viewing of auto-visuals and use of audio programs for self-study, when to have

¹ S.O. Akande, *Social Studies: A Book on Methodology*, Ibadan, Evans brothers, 2005.

² *Ibid.*

³ J. Adesumaju, *Resource Provision and Utilization: A Case Study of the Technical Colleges in Lagos State*, *African Journal of Education Management*, Vol. 7, No 1, 2004, 23 - 25.

⁴ R. Ordu, and E. Amadi, *Utilisation of Instructional Materials and Students Academic Performance in Junior Secondary Schools in Selected Local Government Areas in Rivers State*, *International Journal of Innovative Social and Science research*, 7(3), 2019, 59-78,

⁵ Federal Government of Nigeria (FGN), *National Policy on Education*, Lagos: NERDC Press, 2011.

⁶ K.I. Ibrahim, *Influence of Instructional Materials on Academic Performance of Students in Agricultural Science in Secondary Schools in Kwara State, Nigeria*. Unpublished M.Ed thesis, Ahmadu bello University Zaria, kaduna State, 2011.

the class produce diagrams or flannel boards illustrations as part of summarizing oral reports on one aspect of classwork.⁷

The audio-visuals were developed to enable billions of people to learn anywhere and anytime. The visual first came into prominence in an educational scene during the first two decades of the 20th century and such visuals include all materials generally used in classroom instructions. As from 1947, ideas developed in favor of combining the library with visual development. It is on this ground that the term instructional resources or materials evolved (Nwankwo, 2000).⁸ The introduction of technology into education has thrown light into technological innovation e.g. (hardware) machines and (Software) materials or transparencies, are all used as instructional materials in the classroom.

Davies maintained that all media usually help perception, understanding, and transfer of learning, and provide reinforcement and extension. Some media used as instructional materials are essential to the attainment of goals and objectives in subjects offered in the classrooms. Therefore, such media should be obtained and used if the objectives are to be achieved. Media like maps and pictures are described as criterion media and are also used to learn and achieve the skill of mastery in the English language and any other kind of subject in the classroom teaching/learning situation.⁹ According to Hoben, there is little from evidence in the research literature that a single medium of instruction will suffice ever, not only because it will become unbearably monotonous, but variety among instructional media can make the teaching more effective in the classroom.¹⁰

Emphasizing the importance of teaching aids in promoting teaching and learning Aina, stressed that, instructional materials are those materials or resources used in any teaching exercise to promote a greater understanding of the learning experiences.¹¹ She stressed further that they are used to provide the richest possible learning environment which helps learners and the teachers to achieve specific objectives. They also assist the teacher to communicate more effectively and the learner to learn more meaningfully and permanently.¹² Ozerehe conducted a study on the utilization of teaching aids in the teaching of vocational agricultural science in secondary schools in the Ogun state of Nigeria. 15 secondary schools formed the sample of the study and findings from the study revealed that most teachers use teaching aids, and those teaching aids have a positive relationship in teaching vocational agricultural science in secondary schools.¹³

Indeed, Instructional materials form a vital aspect of teaching and learning in secondary schools, hence their significance in school curriculum implementation. Regular utilization of appropriate instructional materials aids retention thereby promoting permanence in learning. Uyagu examined the effects

⁷ K.I. Ibrahim, Influence of Instructional Materials on Academic Performance of Students in Agricultural Science in Secondary Schools in Kwara State, Nigeria, Unpublished M.Ed thesis, Ahmadu bello University Zaria, kaduna State, 2011.

⁸ N.G. Nwankwo, et al, The Use of E-Library Resources as a Correlate of User Satisfaction in University Libraries in Anambra State, *International Journal of Social Sciences and Humanities Reviews* Vol.9 No.1, 2019; p.103 – 112,

⁹ I. Davies, Contributions of Educational Technology, London: Butler Worth Co. and publishers, 1990.

¹⁰ N. Hoben, The use of Psychology in Teaching; London Longman Group Ltd. *Conference of the Nigerian Geographical Association*, Jos, 1991, 256 – 260.

¹¹ Z. Aina, Principles and Practice of Education, Ibadan: Macmillan publishers Ltd, 1982.

¹² *Ibid.*

¹³ S.S. Ozerehe, Utilization of Teaching Aids in Teaching of Vocational Agricultural Science in Secondary Schools in Osun State. Unpublished M.Sc. thesis, University of Nigeria Nsukka, 1998

of instructional materials usage on students' academic performance in science in senior secondary schools in Zaria, Kaduna state. The population of the study was 24 schools and 15,430 students. Findings from the study indicated that students perform better when appropriate and improvised materials were made available and utilized in teaching science and teacher's possession of good qualifications enhances students' performance in science.¹⁴ Similarly, Ordu and Amadi examined the utilization of instructional materials and students' academic performance in junior secondary schools in some selected local government areas in River state, Nigeria. Findings of the study indicated that utilization of still pictures, graphic materials and print media have a positive effect on academic performance of students.¹⁵

To standardize the quality of education, resource availability, deployment and usage have been perceived as indicators of effectiveness in the teaching and learning process and may result in high academic performance of pupils in schools. One of the ways of bringing about effective learning is to make the experience as real as possible. This involves using real-life examples that are related to the learners' experiences. The other options include the use of instructional materials and devices that assist the teacher in making a realistic approach to the teaching process. Bajah observed that the quality of any teaching is judged by the effect it has on learners and society.¹⁶ Ayo also found that student's performance in the Senior Secondary School Certificate Examinations (SSCE) in five subjects; English Language, Mathematics, Physics, Chemistry, and Biology in 1998 and 2002 was very poor and the researcher attributed this inefficiency to the ineffective utilization of instructional materials in teaching and learning of those subjects.¹⁷

Teaching resources which are educational inputs are of vital importance to the teaching of any subject in the school curriculum. Wales thought that the use of instructional materials would make discovered facts glued firmly to the memory of students.¹⁸ Savoury also added that a well-planned and imaginative use of visual aids in lessons should do much to banish apathy, supplement the inadequacy of books as well and arouse students' interest by giving them something practical to see and do, and at the same time help to train them to think things out themselves. Like other teaching subjects in the school curriculum, the teaching and learning of any subject in school cannot be effectively achieved without the aid of instructional resources.¹⁹

Savoury suggested a catalog of useful visual aids that are good for teaching such as pictures, postcards, diagrams, maps, filmstrips, and models.²⁰ Adeyamju stated that in ongoing action research by investigators in Winneba District Ghana, a survey sample of teachers with several years of teaching experience of between three and twenty-five (25) years indicated that teaching aids improved

¹⁴ B.G. Uyagu, Effects of Instructional Materials Usage and Teacher Quality on Students' Academic Performance in Science in Senior Secondary Schools in Zaria Local Government. Kaduna State, Unpublished M.Ed thesis, Ahmadu Bello University Zaria, 2009.

¹⁵ R. Urdu, and E. Amadi, Utilisation of Instructional Materials and Students Academic Performance in Junior Secondary Schools in Selected Local Government Areas in Rivers State, *Op. Cit.*

¹⁶ Bajah, S.T. (1981) Improvisation in Agricultural Science. *Journal of Science Teachers Association of Nigeria*, 16(2):100-105.

¹⁷ J. Ayo, Teachers Training in Higher Institutions; Ibadan; University Press, 2000.

¹⁸ E. Wale, Challenging traditional views of teaching and teacher education. *Journal of teacher education*, xxvii (2), 2000, 120 - 135.

¹⁹ W. Savoury, Oxford Advanced Learners Dictionary, London: University College, 1998.

²⁰ Ibid.

methodology. The researchers also claimed that teaching aids reduced the talk and chalk method.²¹ Similarly, Anyanwu found that ineffective teaching and non-application of teaching aids by teachers largely contributed to the poor academic achievement of students.²²

However, the inability of many teachers to effectively use instructional materials to enhance students' learning coupled with the seemingly non-availability of instructional resources, misallocation, non-allocation of such resources and lack of utilization of teaching materials or instructional aides have been perceived as indicators of poor performance of students in public secondary schools. Savoury also observed that for a long, instructional resources had not really been used in many schools and most teachers were done verbally without really making use of the few available materials.²³ Obilade equally observed that the two major obstacles that hinder efforts at successful resource management in education are waste and underutilization or of deployment teaching materials in classroom presentations.²⁴ The major problem here is the fact that many teachers do not use the necessary instructional materials to teach in the classrooms and some of them who use these teaching aids are perceived to be inexperienced in the application of such materials. Those issues have been associated with the poor performance of students in their examinations and other standardized tests.²⁵ Given these observations above, this study attempted to examine the relationship between the utilization of teaching aids and the academic performance of students in senior secondary schools in Kano Metropolis.

1. Objectives of the Study

- a. The specific objectives of the study include the following:
- b. To determine whether there is a significant effect of the use of audio-visuals on the academic performance of students in English in public secondary schools in the Kano metropolis.
- c. To determine whether there is a significant effect of the use of print media on the academic performance of students in English in public senior secondary schools in the Kano metropolis.
- d. To determine whether there is a significant effect of utilization of teaching aids and academic performance of students in public secondary schools in the Kano metropolis.

2. Research Hypotheses

- a. There is no significant effect of the use of audio-visuals on students' academic performance in public secondary schools in the Kano metropolis.
- b. There is no significant effect of the use of print media and students' academic performance in public secondary schools in the Kano metropolis.

²¹ I, Adeyamju, Basic Principles of Teaching, Ibadan: John Willey and Sons, 2003.

²² U. Anyanwu, An Introduction to Philosophy of Education, Ibadan, Macmillan Publishers, 2000.

²³ Savoury, Oxford Advanced Learners Dictionary, Op.Cit.

²⁴ S.O. Obilade, Leadership Qualities and Styles as Related to Institutional Programs. Ibadan, Department of Educational Management. University of Ibadan, 1998, 14-31.

²⁵ *Ibid.*

- c. there is no significant effect of the utilization of teaching aids and the academic performance of students in public secondary schools in the Kano metropolis.

METHOD

The researcher employed an experimental research design, the population of the study consisted of five selected public senior secondary schools in Kano metropolis with a total of 1390 SS 2 students. A research advisor (2006) was used to determine the required sample size for the study, and it recommended a sample size of 306. A simple random sampling technique was used to select the sample size required by the study whereas, a proportionate sampling technique was used to select the sample size required from each school. Data for the study was collected using an instrument titled “Utilization of Teaching Materials and Academic Performance Questionnaire (UTMAPQ)”. Reliability of the instrument was obtained using a test-retest method within 6 weeks. A reliability index of 0.74 was obtained through the Cronbach Alpha Co-efficient (PPMC). The instrument has 20 items which are open-ended questions. Hypotheses generated were tested using an independent T-test at a 0.05 level of significance.

RESULT OF FINDINGS

This section presents an analysis of all the null hypotheses formulated for this study and the hypotheses were tested at a 0.05 level of significance as presented below.

H₀₁: There is no significant effect of using audio-visual aids on students’ academic performance in the English language among public secondary schools in the Kano metropolis.

In testing this null hypothesis, the post-test academic performance scores of the 306 selected public secondary school students in the Kano metropolis measured via the research instrument were sorted according to experimental group 1 (those taught using audio-visual aids) and control group (those taught without audio-visual aids). The scores were then analyzed electronically using independent t-test statistics at a 0.05 level of significance and the results are presented in Table 1

Table 1: T-test statistics Comparing the Mean academic Performance Scores of Experimental and Control Group Students in English language in Kano Metropolis

Group	N	Mean	SD	Df	t-Cal	p-Value	Decision
Audio-visual Aids	153	13.64	3.12	304	10.191	0.001	H ₀₁
Control	153	9.99	3.15				Rejected
Total	306						

Table 1 is a summary of independent t-test statistics conducted to determine the significance or otherwise of the difference between the mean academic performance in the English language of experimental students (who were taught using audio-visual aids) and control students (who were taught conventionally) among public secondary schools in Kano metropolis. The analysis showed that experimental students (*Mean*=13.64, *SD*=3.12) reported significantly higher

academic performance in the English language than the control students ($Mean=9.99$, $SD=3.15$), $t(304)=10.191$, $p<0.05$; hence the null hypothesis was rejected. Therefore, the mean score of students taught English language using audio-visual aids was found to be higher and statistically significant as compared to the mean score of control students who were taught conventionally without audio-visual aids. Hence Audio-visual teaching aids have a statistically significant positive effect on public secondary school students' academic performance in Kano metropolis.

H0₂: There is no significant effect of using printed media aids on students' academic performance in the English language in public secondary schools in the Kano metropolis.

In testing this null hypothesis, the post-test academic performance scores of the 306 selected public secondary school students in the Kano metropolis measured via the research instrument were sorted according to experimental group 1 (those taught using printed media aids) and control group (those taught traditionally without printed media aids). The scores were then analyzed electronically using independent t-test statistics at a 0.05 level of significance and the results are presented in Table 2

Table 2: t-test Statistics Comparing the Mean academic Performance Scores of Experimental and Control Group Students in English language in Kano Metropolis

Group	N	Mean	SD	df	t-Cal	p-Value	Decision
Printed Media Aids	153	14.01	4.84	304	8.590	0.001	H ₀₂
Control	153	10.06	2.97				Rejected
Total	306						

Table 2 is a summary of independent t-test statistics conducted to determine the significance or otherwise of the difference between the mean academic performance in English language of experimental students (who were taught using printed media aids) and control students (who were taught conventionally) among public secondary schools in Kano metropolis. The analysis showed that experimental students ($Mean=14.01$, $SD=4.84$) reported significantly higher academic performance in the English language than the control students ($Mean=10.06$, $SD=2.97$), $t(304)=8.590$, $p<0.05$; hence the null hypothesis 2 was rejected. Therefore, the mean score of students taught English language using printed media aids was found to be higher and statistically significant as compared to the mean score of control students who were taught conventionally without printed media aids. Hence printed media teaching aids have a statistically significant positive effect on public secondary school students' academic performance in Kano metropolis.

H0₃: There is no significant effect of utilizing teaching aids on students' academic performance in the English language among public secondary schools in the Kano metropolis.

In testing this null hypothesis, the post-test academic performance scores of the 306 selected public secondary school students in the Kano metropolis measured via the research instrument were sorted according to four different groups namely: experimental group 1 (those taught using audio-visual aids); control group 1 (those taught without audio-visual aids); experimental group 2 (those taught using printed media aids) and control group 2 (those taught traditionally without printed media aids). The scores were analyzed electronically

using One-way Analysis of Variance (ANOVA) statistics at a 0.05 level of significance and the results are presented in Table 3

Table 3a: One-way Analysis of Variance Comparing the Academic performance of Students in English Language Among the Four Groups in Kano Metropolis.

Source of variations	Sum of Squares	Df	Means Squares	F-Cal	Sig.	Remark
Between Groups	2220.724	3	740.241	56.966	0.000	H ₀₃
Within Groups	7900.667	608	12.995			Rejected
Total	10121.391	611				

Table 3a is a summary of the One-way between-subjects Analysis of Variance conducted to compare the effect of using teaching aids on the academic performance of public secondary school students in the English language in the Kano metropolis. The analysis revealed that there was a statistically significant difference in academic performance of experimental students taught English language using audio-visual (Mean=13.64, SD=3.12) and printed media (Mean=14.01, SD=4.84) teaching aids over the control students taught using traditional 1 (Mean=9.99, SD=3.15) and traditional 2 (Mean=10.06, SD=2.97) at a calculated ANOVA $F(3, 608) = 56.966, p = 0.0001$, hence the null hypothesis three was also rejected.

Table 3b: Turkey's HSD Multiple Comparison Test

Utilization of Aids Status	N	Subset for Alpha = 0.05	
		1	2
Turkey B ^a Traditional 1	153	9.9869	
Traditional 2	153	10.0588	
Audio-Visuals	153		13.6405
Printed Media	153		14.0065

A post hoc multiple comparisons Tukey's HSD Test was conducted, and it was found that the mean value of the academic performance of students in the English language of experimental groups who were taught using Audio-visual (Mean=13.64) and Printed media (Mean=14.01) were both significantly different and higher than that of their respective control groups who were taught traditionally with control 1 (Mean=9.99) and control 2 (10.06) at $p=0.001$

Discussion of Findings

The first research finding from the analysis showed that the mean score of students taught the English language using audio-visual aids was found to be higher and statistically significant as compared to the mean score of control students who were taught conventionally without audio-visual aids. Hence Audio-visual teaching aids have a statistically significant positive effect on public secondary school students' academic performance in the Kano metropolis. This finding supports the findings of Uyagu whose findings indicated that students perform better when appropriate and improvised materials were made available and utilized in teaching science.²⁶

²⁶ B.G. Uyagu, Effects of Instructional Materials Usage and Teacher Quality on Students' Academic Performance in Science in Senior Secondary Schools in Zaria Local Government. Kaduna State, *Op. Cit*

The second finding from the study indicated that the mean score of students taught the English language using print media aids was found to be higher and statistically significant as compared to the mean score of control students who were taught conventionally without printed media aids. Hence print media teaching aids have a statistically significant positive effect on public secondary school students' academic performance in the Kano metropolis. This finding confirmed the findings of Ordu and Amadi whose study indicated that utilization of still pictures, graphic materials, and print media has a positive effect on the academic performance of students. Therefore, this means that usually print media helps increase attention span, interest, and understanding of the lesson and promotes the transfer of knowledge leading to high student academic performance.²⁷

The third finding from the analysis revealed that there was a statistically significant difference in the academic performance of experimental students taught the English language using audio-visual and printed media teaching aids over the control students taught using traditional 1 and traditional 2. Also, it was found that the mean value of the academic performance of students in the English language of experimental groups who were taught using Audio-visual and Printed media were both significantly different and higher than that of their respective control groups who were taught traditionally with control 1. This finding aligns with the findings of Adeyamju which revealed that teaching aids improved methodology and reduced the talk and chalk method.²⁸ The findings also support the findings of Anyanwu who found that ineffective teaching and non-application of teaching aids by teachers largely contributed to the poor academic achievement of students.²⁹ This implies that instructional materials are strong determinants of the academic performance of students. This is because students learn and assimilate better when most of the senses are appealed to by the instructional aids.

Implication For Policy Making

The findings indicated that instructional materials have a significant effect on the academic performance of students. This, therefore, implies that when appropriate teaching aids are deployed and put to proper use in teaching-learning situations they can enhance the academic performance of students. Hence, the significance of teaching aids in enhancing teaching and learning needs to be further emphasized. It also shows the need for proper training of teachers on how to efficiently make use of that educational resource in promoting effective teaching and learning in secondary schools. It indicated further the need to sensitize teachers on the importance of optimum utilization of available instructional resources to enhance the academic performance of students.

CONCLUSION

Based on the findings of this study, it was therefore concluded that teaching aids have a significant influence on academic performance of students. Indeed,

²⁷ R. Urdu, and E. Amadi, Utilisation of Instructional Materials and Students Academic Performance in Junior Secondary Schools in Selected Local Government Areas in Rivers State, *Op. Cit.*

²⁸ I, Adeyamju, *Basic Principles of Teaching, Op. Cit.*

²⁹ U. Anyanwu, *An Introduction to Philosophy of Education, Op. Cit.*

the opportunity to touch, smell or taste objects during a lesson may no doubt quickly remind learners of the facts he/she had previously come across but have forgotten. Therefore, the failure rate of students can be curtailed if teachers are provided with and encouraged to make optimum utilization of appropriate teaching aids. This is because students will perform better when instructional materials possess the characteristics of appropriateness, relevancy, usability, sufficiency, and attractiveness to efficiently enhance students' academic performance, especially at pre-tertiary levels.

Recommendations

1. Instructional materials such as print media and audio-visuals should be made available to teachers for effective teaching and learning.
2. Teachers should be trained on how to make effective use of instructional material in promoting teaching and learning.
3. Teachers should be mandated to make optimum use of instructional materials to enhance students' academic performance.

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