



Effects of Audio-visual Aids on the Academic Performance of Nursery Schools Pupils in Alphabets Reading in Sokoto Metropolis, Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author NB designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MAF defined and supervised the direction of the study and managed the analyses of the study. Both authors managed the literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

The study aims to determine the effects of audio-visual aids on the performance of nursery school pupils in alphabet reading in Sokoto metropolis. The study sets out three research objectives, three questions, and two hypotheses. The study adopted a survey design method. All Nursery school pupils in Sokoto metropolis form the population of the study. A purposive sampling technique was used to select two schools (New Dawn and Nagarta College) to participate in the study. New Dawn and Nagarta College were respectively allocated to experimental and control groups through balloting. An intact class from each of the two schools was used for the study. An achievement test instrument was developed by the researchers, validated by experts. To ensure the reliability of the instrument, a pilot study was conducted and a reliability index of 0.94 was obtained using KR-21. The research questions were answered using descriptive statistics, and the two hypotheses were tested using independent sample t-test statistics. Results from the study reveal that the treatment was effective in improving pupils' academic performance. It was also found that there was a

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significant difference between the academic performance of the pupils taught using audio-visual aids and those taught the same using the conventional approach in favour of those exposed to the treatment. The study concludes that pupils' poor academic performance could be a result of poor utilization or inadequacy of instructional media. Therefore the study recommends that Schools management should make audio-visual aids available for effective delivery in the instructional processes, and schools authorities concerned should encourage teachers to make efficient use of the audio-visual teaching aids during the instructional process.

Keywords: Audio-visual aids; academic performance; alphabet reading; nursery schools.

1. INTRODUCTION

The term audio-visual materials are commonly used to refer to those instructional materials that may be used to convey meaning without complete dependence on verbal symbols or language [1]. In line with the definition above, a textbook or a reference material does not fall under audio-visual teaching aids [2]. Shabiralyani, Hasan, Hamad, and Iqbal [3] state that elementary learners learn more easily and faster through audio-visual devices compared to learning through verbal instruction. The results from their study also established that the majority of the teachers and students had positive perceptions of the use of visual aids. Mercedes and Amelia, [4] stress the effectiveness of visual material in learning, estimated that about 40% of what is learned are through visual experience, 25% through auditory, 17% through tactile, 15% on miscellaneous organization, and 3% upon taste smell. With this above assertion, it becomes clearer why audio-visual materials are important in the teaching and learning processes.

The audio-visual method is one method that can be used in the classroom to teach pupils of nursery and elementary school. The method enables users to make effective use of both visual and audio media and permits the introduction of study materials. The improved access to and availability of electronic and multimedia technology has enabled more students to participate actively in the learning process. Audio-visual aids make teaching and learning effective and useful. It is one of the best avenues through which knowledge and information can be disseminated. Utilization of audio-visual media such as television, video, movie, projector, computer in the classroom help in enriching pupils' understanding and stimulate their interest and build a creative environment.

Pupils learn easily from what they see or hear. Audio-visual media appeal to the sense of seeing and hearing. But a majority of teachers tend to ignore the use of media or instructional

resources during the instructional process. Teaching without teaching aids discourages pupils' interest and participation in the teaching-learning process. Current researchers are of the opinion that effective utilization of audio-visual media will help in promoting pupils' understanding and academic performance. Hence the need to investigate the effect of audio-visual aids on nursery school pupils' performance in alphabets reading in Sokoto Metropolis.

Furthermore, it is a piece of common knowledge that most school teachers no longer make use of instructional materials when teaching and this has a negative effect on the teaching and by extension having a negative effect on the academic performance of the pupils [5]. Some of these effects include, the pupils will not be able to concretize the lesson that is been taught, they are unable to visualize what the teacher is teaching because the pupils do not have a mental picture of what the teacher is passing across to them [6]. This makes the students easily forget what they have been taught in the school. Without the use of instructional materials, learning becomes boring to the pupils and they can easily lose interest when there is nothing like instructional materials to motivate them to learn, so whatever the teacher is teaching them, they cannot assimilate easily [7].

According to Terrebonne Parish Library System (2010), audio-visual aid conveys information mainly via sound and image instead of by text. As students become more accustomed to technology, audio-visual materials play an even more important role in classrooms. Students learn in a variety of different ways, which is why they use of audio-visual components helps to enhance the learning environment.

2. AUDIO-VISUAL MATERIALS

According to Brinton (2008), audio-visual materials are instructional materials that present information to students in ways that do not involve the use of paper and pencil. Audio-visual

materials are useful in instruction because they take learning away from a textbook-only approach. Audio-visual learning may be used to teach children. Children can play videos, DVDs, games and learn computer, typing functions. Children can learn at an early age, faster than later period of their life. Dauda, (2015) stated that Children find computers as toys and like to play with them. The use of an electronic device can make learning fun and easy for children in 6-14 old age.

Many researchers conducted studies and have found that audio-visual materials/teaching aids are effective in improving students' academic performance. For instance, Adebayo and Adigun [8] found that there was a significant difference in the academic performance of students taught with instructional aids in mathematics. In their study, Elisabeth, Hesbon, and Amos [9] have found audio-visual teaching aids as effective tools for promoting students' academic performance. The study recommends that teachers and school administrators should embrace the use of teaching aids in the teaching and learning in their schools, teachers should be trained on the use of teaching aids and proper monitoring should be done to ensure that the teaching aids are properly and effectively used and lastly the ministry of education should make efforts to ensure that teaching aids are available in schools for teachers and students to use. A study conducted by Ngonyani [10] established that the appropriate use of visual aids has an influence on students' academic performance.

Looking at gender as a factor that influences learning, it was lamented that learning through audio-visual aids cut across gender, thus, user friendly [11]. Ip, Jacobs, and Watkins, [12] in their study on the gaming frequency and academic performance assert that gender comparisons show that female students performed better than male students across all disciplines under study. Yien, Hung, Hwang, and Lin, [13] in their study have found that audio-visual aids (technology) to be effective in improving students' learning achievements in a nutrition course. The authors also found that there was no significant difference in the academic performance of students taught using audio-visual aids and those taught the same using a traditional method based on gender.

2.1 Statement of the Problem

Education is the key to national development, and promoting it implies the need to upgrade

instructional processes for effective delivery towards the attainment of educational goals as emphasized in the Sustainable Development Goals (SDGs). Efforts have been made by school administrators to improve the performance of students at all levels of education. Nursery and primary levels are seen as the foundations of education. At these levels, pupils are at least expected to be able to read and write. In Northern Nigeria, many pupils attended the basic education level without the ability to read and write. According to Mba (2018), the school environment which includes the classrooms, libraries, technical workshops, laboratories, teachers' quality, school management, teaching methods, peers, etc is to blame for pupils' poor academic performance. Upon all the factors listed, the writers of this paper are of the opinion that inadequacy and lack of utilization of teaching aids/material (audio-visual aids) could be among the leading factors that lead to poor academic performances, especially in the nursery and primary schools. Hence the need to carry out a study on the effects of audio-visual aids in teaching alphabets reading among nursery school pupils in Sokoto metropolis.

2.2 Objectives of the Study

The main purpose of the study was to determine the effects of visual aids in teaching alphabets in nursery schools. Specifically, the study intended:

1. To ascertain the effect of audio-visual aids on pupils' academic performance in alphabet reading in some selected nursery schools in Sokoto metropolis.
2. To determine the factors that militate against the use of audio-visual instructional aids in some selected nursery schools in Sokoto metropolis.
3. To determine whether there is a difference between the performance of nursery pupils taught alphabet reading conventionally and those taught using audio-visual aids.

2.3 Research Questions

The following research questions were raised to guide the study:

1. What is the effect of audio-visual aids in student's academic performance in alphabet reading?
2. What is the difference in academic performance between nursery school pupils taught alphabet reading convection

- and those taught the same using audio-visual aids?
3. What is the difference in the performance of nursery school pupils in reading the alphabet based on gender?

2.4 Research Hypotheses

The following null hypotheses would be tested

H₀₁: There is no significant difference in the academic performance between nursery school pupils taught alphabet reading conventionally and those taught the same using audio-visual aids.

H₀₂: There is no significant difference in the academic performance of nursery pupils taught alphabet reading using audio-visual aids based on gender.

2.5 Methodology

The research design adopted for this study was descriptive of a survey type. This type of research design enables researchers to utilize data collected the way it is without any manipulation.

2.6 Population of the Study

The population of this study involved all the 2350 nursery school pupils in Sokoto metropolis.

2.7 Sample and Sampling Technique

A purposive sampling technique was used to select two schools (New Dawn and Nagarta College) to participate in the study. The two schools were selected for the study because the schools possessed the ICT facilities (computers and multimedia projectors) required to support the study. New Dawn and Nagarta College were respectively allocated to experimental and control groups through balloting. An intact class from each of the two schools was used for the study.

2.8 Instrumentation

Researchers' structured achievement test instrument was used to measure pupils' academic performances in alphabet reading. The same instrument was used for pretest and post-test. During the post-test, items in the instrument were reshuffled to avoid any form of invalidity.

2.9 Validity of the Instrument

This simply means the accuracy of an instrument to measure what it is supposed to measure. To ensure face and content validity of the instrument, it was validated by three (3) experts from the Department of Curriculum Studies and Educational Technology, Usmanu Danfodiyo University, Sokoto, Nigeria.

2.10 Reliability of the Instrument

Reliability means the consistency of an instrument to measure what it is supposed to measure. To determine the reliability of the instrument, pilot steady was conducted at Brilliant Footsteps Academy, and a reliability index of 0.94 was obtained. This indicated that the instrument is reliable.

2.11 Procedure for Data Collection

To gather data for the study, pretest and post-test were conducted for the two selected schools. Pretests were conducted from the beginning of the exercise. Four (4) weeks after the experimental group was exposed to the treatment, post-tests were conducted to determine if the treatment was effective in improving pupils' performance in alphabet reading.

2.12 Data Analysis Techniques

Descriptive statistics (means) was used to provide answers to research question one and inferential statistics (t-test) was used to test the two hypotheses formulated at a 0.05 level of significance.

3. RESULTS

Research Question One: What is the effect of audio-visual aids on students' academic performance in alphabet reading?.

From Table 1, it can be seen that the mean scores for the pretest for experimental and control groups are 5.23 and 2 respectively, and mean scores for the post-test are 10.27 and 5.20 respectively for the experimental and control groups. The mean gain scores for the two groups are 5.04 and 3.20 respectively. The mean gain score of 5.04 for the experimental group is a clear indication that the treatment was effective in improving pupils' academic performance.

H₀₁: There is no significant difference in the academic performance between nursery school pupils taught alphabet reading conventionally and those taught the same using audio-visual aids.

From Table 2, the t (2.83) at df (28) with P-value (0.01)<0.05 indicates that there was a significant difference between the academic performance of the pupils taught using audio-visual aids and those taught the same using the conventional approach. The decision is in favour of the experimental group with a mean score of 10.27 against the control group with a mean score of 5.20. Thus, the null hypothesis was rejected.

H₀₂: There is no significant difference in the academic performance of nursery pupils taught alphabet reading using audio-visual aids based on gender.

From Table 3, the t (0.95) at df (13) with P-value (0.36)<0.05 indicates that there was no significant difference between the academic performance of the pupils taught using audio-visual aids based on gender. Thus, the null hypothesis is retained. This is a clear indication that the use of audio-visual aids for teaching and learning is gender-friendly.

4. DISCUSSION

This section discussed the findings of the study. It linked the findings of the study to the literature in the areas of agreement and disagreement. One of the findings of this study revealed that the treatment (visual aids) was effective in improving pupils' academic performance. This finding is in agreement with the assertions made by Adebayo and Adigun [8] Elisabeth, Hesbon, and Amos [9]

that audio-visual teaching aids are effective tools for promoting students' academic performance.

It was found by the study that there was a significant difference in academic performance between the pupils taught using audio-visual teaching aids and those taught the same using a traditional method. The result is in favour of the experimental group exposed to the treatment. This finding is in agreement with the findings of Elisabeth, Hesbon, and Amos [9], and Ngonyani [10] where they established that the appropriate use of visual aids has an influence on students' academic performance. Utilization of audio-visual media such as television, video, movie, projector, computer in the classroom help in enriching pupils' understanding and stimulate their interest and build a creative learning environment.

It was also found that there was no significant difference in the academic performance of the pupils taught using audio-visual aids based on gender. This is a clear indication that the use of audio-visual aids for teaching and learning is gender-friendly. This finding is supported by Cheng and Su, [11] in their study where it was established that learning through audio-visual aids cut across gender, thus, user friendly. The finding of the study was further confirmed by Yien, Hung, Hwang, and Lin, [12] where they posited that there was no significant difference in the academic performance of students taught using audio-visual aids and those taught the same using a traditional method based on gender. Contrary to the finding of this study, Ip, Jacobs, and Watkins, [13] asserted that gender comparisons show that female students performed better than male students across all disciplines under study.

Table 1. Pretest and post-test mean gain scores for the experimental and control groups

Groups	N	Mean_Pretest	Mean_Post-test	Mean_Gain_Score
Exp.	15	5.23	10.27	5.04
Cont.	15	2.00	5.20	3.20

Table 2. t-test result of the experimental and control groups

Groups	N	Mean	Df	T	P-value	Decision
Exp.	15	10.27	28	2.83	0.01	Sig.
Cont.	15	5.20				

Table 3. t-test result (post-test) of the experimental group based on gender

Gender	N	Mean	Df	T	P-value	Decision
Female	11	11.00	13	0.95	0.36	Not Sig.
Male	4	8.25				

5. CONCLUSION

This study concluded that pupils' poor academic performance could be a result of poor utilization or inadequacy of instructional media. Effective utilization of visual guides helps to facilitate instructional processes, especially in tedious learning situations/environments. This is because instructional media arouse pupils' curiosity and motivate them to learn. This implies that unless the provision of these materials is improved and used effectively, pupils' academic performance could continue in its current stage.

6. RECOMMENDATIONS

It is obvious that the best learning takes place when the remotest number of senses are stimulated. The use of audio-visual aids will stimulate the uttermost number of senses. For this reason, therefore, the study recommends that:

1. Schools managements should make audio-visual aids available at basic levels for effective delivery in the instructional processes.
2. At the basic levels, authorities concerned should encourage teachers to make efficient use of audio-visual teaching aids.
3. Teachers at basic education levels should avoid using any teaching aid that tends to distract students' learning during their lessons.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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