

EFFECT OF DIGITAL AUDIO INSTRUCTIONAL PACKAGE ON THE PERFORMANCE OF SENIOR SECONDARY STUDENTS IN ORAL-ENGLISH IN MINNA, NIGER STATE, NIGERIA

By

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Abstract

This study investigated the effect of digital audio instructional package on the performance of Senior Secondary Students in Oral-English in Minna, Niger State, Nigeria. Also, the influence of gender on the performance of students exposed to digital audio instructional package was examined. The research was a quasi experimental involving pretest, posttest experimental and control group design. The sample for the study comprised forty second year senior secondary school students (SSII) drawn from two equivalent secondary schools within Minna metropolis. Stratified random sampling was used to select 40 students (20 males and 20 females). Three research questions were raised and three hypotheses formulated, and tested at 0.05 level of significance. The Oral-English Achievement Test (OAT) was made of 50-items of multiple-choice objectives type, developed and validated for data collection. The students' pretest and posttest achievement scores of students taught using: digital audio and the normal classroom instruction were subjected to t-test statistics. The findings of the study showed that the performance of students exposed to digital audio instructional package was better than their counterparts exposed to normal classroom instruction. Similarly, students taught using digital audio instructional package performed better than those taught using normal classroom instruction in the retention test. However, no significant differences existed in the performance of male and female students exposed to digital audio instructional package. Based on the research findings recommendations were made on the need to develop relevant digital audio instructional package in oral English in Nigerian secondary schools.

Keywords: *Digital Audio Instructional Package; Oral-English; Gender; Retention; Senior Secondary School;*

Introduction

English language occupies a unique position in the school curriculum. English language is a central to all subjects; this made it a pre-requisite for admission into tertiary institution in Nigeria. These factors among others have drawn attention of researchers and curriculum planners towards English language as a subject in the school curriculum (Kolawole, 1999). The Federal Government of Nigeria have been making efforts to improve the quality of its teaching and learning in secondary schools (FME, 2004). In spite of the importance and popularity of English language among Nigerian students, performance at senior secondary school level had been poor (WAEC, 2009). A close examination of the performance of students in Niger State in the West African Senior Secondary Certificate Examination (WASSCE) results of five consecutive years revealed that most students could not get admission to university owing to their failure to pass English at credit level (FME, 2010).

The desire to know the causes of the poor performance in English language has been the focus of researchers for some time now. It has been observed that poor performance in English language is caused by the poor teaching methods, poor quality of English language

teachers, over-crowded classrooms, and many others (Kolawole, 2000). Iyela (2000) identified poor teaching methods as the major factor contributing to the poor performance of students in English language.

Enyeazu (2001) stated that since 1995, when the test of Oral-English was modified for Senior School Certificate Examination (SSCE) and the General Certificate Examination (GCE), students have been finding it difficult to pass this aspect of English, thereby leading to mass failure in English Language. This poor performance in English Language is adversely affecting students in their academic pursuit.

Result of recent research in the discussion of oral reading fluency by Kuhn and Stahl (2000) and National Reading Panel (2000) showed that good fluency in oral reading have the potential for influencing student development in literacy. Fluency is the level at which a task can be performed at an automatic level-that is, with a minimal amount of attention required for its completion (Hoofman, 2003).

The potential benefits of digital audio instructional media cannot be underestimated in the contemporary world. There is a plethora of established findings on the instructional value of digitalized audio instruction in advanced countries (Kaminski; Switzer & Gloeckner, 2009). Debus, Hede & Lawley (2009) state that when audio instructional media are properly used as instructional tools of teaching, it enhances objectives of learning. Therefore, they make learning concrete and create room for conceptual thinking and making learning meaningful. According to Adam & Mowers (2007) digital audio player is the easiest way for students to listen to variety of speakers on variety of topics in a variety of genres, dialogues, interviews, lectures for receptive skill development. And for productive skills, audiotape is the most accessible piece of voice recording equipment.

Digital audio instructional package is used to achieve educational objectives in the cognitive, affective and psychomotor domains of learning. This is in line with the work of Nworgu (2000) who carried out a research on woodwork (psychomotor domain) and found out that audiotape improved the performance of the experimental group over the control group. Onyegebu (1999), Otegbayo (2007), Adamu (2009) and Olumba (2009) revealed that Audiotape instructional package enhanced better performance in the understanding of schiostomaisis and Oral-English respectively.

Gender issues have been linked with performance of students in academic tasks in several studies but without any definite conclusion. Some studies revealed that male students performed better than female especially with special and numerical problems while female perform better than male in verbal task, Home economics, secretariat studies and other related courses (Njoku, 2000 & Raimi, 2002). Anagbogu & Ezeliora, (2007) found that female students performed better than their male counterparts in science subjects. Some studies such as those of Spencer (2004) did not find any form of influence being exerted by gender on students' academic performance in mathematics. Gender factor on the use of Audio instructional package has also been of interest to researchers. Adamu (2009), Otegbayo (2007) and Olumba (2009) reported that audiotape instructional package is gender friendly.

However, little is known about the use of digital audio instructional package in the Nigerian education system particularly in Oral-English language setting. In addition, very few empirical studies exist in Nigeria regarding the use of digital audio instructional package in English language. Thus much remains to be empirically studied on the effect of digital audio instruction in English language in Nigeria. This study has provided empirical information on the use of digital audio instructional package in Nigerian secondary schools.

Research Questions

The study specifically sought answers to the following questions:

- (i) Is there any difference in the academic achievements of students taught Oral-English using digital audio instructional package and those taught without it?

- (ii) Is there any difference in the retention of students taught Oral-English using digital audio instructional package and those taught without the package?
- (iii) Is there any difference between male and female students taught Oral-English using digital audio instructional package.

Research Hypotheses

In order to answer the research questions the following null hypotheses were formulated and tested:

- (i) There is no significant difference between the mean achievement scores of students taught Oral-English with digital audio instructional package and those taught without it.
- (ii) There is no significant difference between the mean achievement scores in the retention of students taught Oral-English using digital audio instructional package and those taught without the package.
- (iii) There is no significant difference between male and female students taught Oral-English using digital audio instructional package.

Sample and Sampling Techniques

The target population for this study were all senior secondary two (SS2) students in Niger State. A quasi-experimental design of the type pre-test, post-test, non equivalent, non-randomized control group design was used. Sample subjects consisted of forty (40) class two senior secondary students drawn from two equivalent secondary schools within Minna metropolis. The audiotape instructional package (Experimental Group) consisted of twenty (20) (10 male & 10 female) students and the normal classroom instruction group (Control Group) had twenty (20) (10 male & 10 female) students also. The equivalent co-educational schools used for the study were randomly assigned to experimental and control groups using the simple random sampling technique. Intact classes (one each) were used for the study in sampled schools.

Research Instrument

Treatment Instrument: The researcher prepared four lessons digital audio instructional package of 40 minutes for experimental group. The materials were designed to provide audio information covering topics on Oral-English (vowel sounds, consonant sounds, rhyme and emphatic stress) for senior secondary school class two (SSII). The digital audio package of four lessons contained the instructional content and series of questions related to instructional content and then followed by a summary of the content. For validation, prepared audiotape instructional package were given to educational technology and English Language experts to determine the appropriateness of the materials. Based on their suggestions, further improvements were made. The digital audio instructional package was trial tested on 20 SSII students from one of the Senior Secondary Schools in Minna which was part of research population, but was not take part in the actual study. After listening to the digital audio instructional package on Oral-English, the students responded to questionnaire. Based on their reaction to the package, further improvements were made.

Test Instrument: The test instrument, Oral-English Achievement Test (OAT), was a 50 items multiple-choice objective test with five option each which were drawn from the past West African Examination Council (WAEC) Senior secondary Certificate Examination biology paper I questions.

Procedure for Data Collection: The two groups (experimental and control groups) were subjected to the OAT as pre-test. Then, the students in the experimental group was exposed to digital audio instructional package which was played using Compact Disc Player, while the

control group students were exposed to the conventional teaching method on the same content used for experimental group. The treatment for all the groups lasted for five weeks. After the treatment the two groups were exposed to OAT which had been rearranged as retention test. The scores of the experimental and control groups on the pre-test, post-test and retention test were computed and used for data analysis.

Data Analysis and Results

t-test statistical analysis was used to analyse the data obtained from the pre-test, post-test and retention test for the control and experimental groups. The level of the significance adopted for the analysis was $P \leq 0.05$. This level of significance formed the basis for rejecting or not rejecting each of the hypotheses. The analysis was done using three hypotheses stated for the study. The results of the analyses and discussions are stated below.

The summary of the data analysis and results is presented below:

Table 1: t-test comparison of the pre-test mean scores of experimental and control groups

Variable	N	df	Mean (x)	SD	t-value calculated	Sig.
Experimental group	20		28.80	7.13	0.74 ^{ns}	0.471
Control Group	20	19	27.55	7.07		

ns- Not significant at $P > 0.05$ level of significance

From the data shown on Table 1, the analysis indicated that there was no significant difference between experimental and control groups at pre-test. This was as a result of the t-value of 0.74 resulting in 0.471 significance value which was higher than 0.05 alpha value.

Hypothesis One: There is no significant difference between the mean achievement scores of students taught Oral-English using digital audio instructional package and those taught without it.

Table 2: t-test comparisons of the mean scores of experimental group (digital audio) and control group on the posttest

Variable	N	df	Mean (x)	SD	t-value calculated	Sig.
Experimental group	20		75.60	5.45	6.30*	0.001
Control Group	20	19	64.60	5.59		

* - Significant at $P < 0.05$ level of significance

The data in Table 2 indicate that there was significant difference in the posttest mean scores of students exposed to digital audio instructional package ($x = 75.60$) and those exposed to conventional teaching method ($x = 64.60$) in favour of experimental group, that is those exposed to digital audio instructional package. This was as a result of the t-value of 6.30 resulting in 0.001 significance value which was lesser than 0.05 alpha value. Therefore, the hypothesis which states that there is no significant difference between the mean achievement scores of students taught Oral-English using digital audio instructional package and those taught without it is rejected.

Hypothesis Two: There is no significant difference between the mean achievement scores in the retention of students taught Oral-English using digital audio instructional package and those taught without package.

Table 3: t-test comparisons of the mean scores of experimental group (digital audio) and control group on the retention test

Variable	N	df	Mean (x)	SD	t-value calculated	Sig.
Experimental group	20	19	73.25	17.97	3.60*	0.001
Control Group	20		55.25	14.64		

* Significant at $P < 0.05$.

An examination of Table 3 indicates that there was significant difference in the posttest mean scores of students exposed to digital audio instructional package ($x = 73.25$) and those exposed to conventional teaching method ($x = 55.25$) in favour of experimental group, that is those exposed to digital audio instructional package. This was as a result of the t-value of 3.60 resulting in 0.001 significance value which was lesser than 0.05 alpha value. Therefore, the hypothesis which states that there is no significant difference between the mean achievement scores in the retention of students taught Oral-English using digital audio instructional package and those taught without package is rejected.

Hypothesis 3

There is no significant difference in the performance of male and female students who were taught Oral English with digital audio instructional package.

Table 4: t-test comparison of the mean scores of males and females experimental group (digital audio)

Variable	N	df	Mean (x)	SD	t-value calculated	Sig.
Male	10	9	28.80	7.13	0.74 ^{ns}	0.471
Female	10		27.55	7.07		

ns- Not significant at $P > 0.05$ level of significance

From the data shown in Table 4, the analysis indicate that there was no significant difference in the mean scores of male (28.80) and female (27.55) students exposed to digital audio instructional package in favour of male students. This was as a result of the t-value of 0.74 resulting in 0.47 significance value which was higher than 0.05 alpha value. Therefore, the hypothesis which states that there is no significant difference in the performance of male and female students who were taught Oral English with digital audio instructional package is not rejected.

Discussion of Results

The findings from the study indicate that the digital audio instruction could bring about significant improvement in teaching and learning of Oral-English. The students in experimental group performed significantly better than those in the control group. It is clear from the finding of this study that the use of digital audio instructional package have enhanced the teaching and learning of Oral-English among Senior Secondary School Students resulting in higher achievement gains by the learners. The result is in support of the previous findings of Onyegebu (1999) in schiostomaisis, Adamu (2009), Nworgu (2000),

Olumba (2009) in Oral-English which confirm that audio instructional package has been effective in enhancing students' performance in Oral-English than conventional classroom instruction. The superiority of digital instructional package over the conventional instruction is based on the fact that digital audio instructional package provide integrated experience, which may vary from the concrete to the abstract, and that they have the ability to hold attention of students (Bassey, 1997). In addition, Debuse, Hede & Lawley (2009) state that when audio instructional media are properly used as instructional tools of teaching, it enhances objectives of learning. Therefore, they make learning concrete and create room for conceptual thinking and making learning meaningful.

The second findings of this study showed that the greater proportion of the concept of Oral-English was retained by the experimental group taught using digital audio instructional package. This implies that audiotape instructional packages enhanced retention of the concept of Oral-English than control group. This finding is in agreement with Otegbayo (2007) and Achebe (2005) who found that audiotape and videotape instructional packages enhanced retention in the teaching and learning of Phonetics and food and nutrition among secondary school students respectively.

The influence of gender on the academic performances of students in English language when taught with digital audio instructional package was examined. The findings showed that gender had no influence on the performance of students in Oral-English when they were taught with digital audio instructional package. The finding is in agreement with Adamu (2009), Otegbayo, (2007) and Olumba (2009) who found that audio instructional package is gender friendly.

Conclusion and Recommendations

The study showed that the use of digital audio instructional package has the capability of improving the performance of students in Oral-English.

- (i) The use of digital audio instructional package should be encouraged. In order to achieve this, curriculum designers should infuse the use of digital audio instructional package for teaching/learning of Oral-English into school curricula.
- (ii) Language laboratories should be provided and adequately equipped with variety of instructional media such as commercially produced digital audio, digital video and computer assisted instructional packages.
- (iii) Methods and approaches, which produce equal effects among boys and girls (especially effects that favour boys to the detriment of girls), should continue to be encouraged in the process of teaching and learning Oral-English.

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