

ASSESSMENT OF STUDENTS ON COMPUTER ASSISTED INSTRUCTION PACKAGES ON MUSIC AMONG SENIOR SECONDARY SCHOOL STUDENTS IN OYO NIGERIA

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Abstract

The purpose of this study was to determine the effect of computer assisted instructional package on the performance of senior secondary school students in music in Oyo. Nigeria. The pre test, post test control group design was used for the study. Eighty (80) students were randomly selected (40 males and 40 females) from two secondary schools that took part in the study. The students were randomly assigned to the experimental and control groups respectively. The subjects in the experimental group were taught using computer assisted instructional package (CAIP) on Music, while the control group were taught using conventional method. The treatment for the study was the CAIP and Music performing Test (MUPET). The Music Performance Test contained 20 multiple test questions and was administered to the students as pre test and post test. Two hypotheses were postulated and tested at 0.05 level of significance using Analysis of covariance. Finding indicated that there is significant differences between the performance of students taught with CAIP and those taught using the conventional method and that gender had influence in the performances. In line with the findings, recommendation was made that computer assisted instructional packages CAIPs should be develop for teaching Music topics in Nigerian Senior Secondary Schools.

Keywords: Computer Assisted Instructional Package, Music, Gender, Nigeria.

Introduction

Arts is practical demonstration of skills, bore out of the creativity involving the brain, the eyes and the hand. Art is broadly divided into creative and performing. Music, like other arts, is not autonomous; it is always one aspect of the cultural life of a society. Music is part of creative arts, a subject taught and recognised mostly among the arts students in Nigeria Senior Secondary Schools. Musical formation is the result of inspiration, guided perhaps by experience. Music is a natural phenomenon which associates with creativity and nature, which has been an integral part of culture, since ancient times (Simpson 2008). Music is a unique way of knowing. It influences how we see the world, express our views of the world and come to know the world. Music supplies intellect, emotion and imagination as articulated through sound. Music encompasses a wide range of sound sources and uses a wide range of signs and symbols both heard and seen. Music is a fundamental form of personal and cultural expression. Through music we can appreciate and understand our heritage as well as that of other cultures (UNESCO 2002).

Music education gives opportunities for every child to experience the power and benefit of learning. Research from the fields of psychology emphasised the importance of music education and benefits to learning especially on cognitive tasks and extra-musical outcomes (Hodges & Luehrsen 2010). While, music education is characterised as developing the individual; brain, language and reasoning, a means of self expression, inculcate the spirit of boldness and risk taking, promoting teamwork, discipline and creativity (CPRP 2015). Review of empirical studies on music, revealed that music stimulates the limbic system (Paget, 2006). Enhances active learning and students: students learnt better and comprehend with the presence of background music in the class (Forgie, 2007). Promotes IQ in individual (Schellenberg, 2004). Influences how individuals elicit and exhibit behaviours (Premuzic and Furnham 2007). Had effect on the students' development of their spatial thinking (Hetland 2000).

The computers' relevance to the teaching and learning of music are as follows, students used computer to compose and write music notation, editing music, mixing music, recording and keeping valuable music, burning music to Compact disk for preserving music, playing music, designing music wrapper (Lou, Guo, Zhu, Shin, Dzan 2011). Computer Assisted Instruction Packages combines computers and music instruction to provide a good learning environment for achieving stated teaching objectives. Umaru (2003) defined Computer Assisted Instructional Packages as a tutor for teaching and learning, as well as a medium of computer software. The benefit of Computer Assisted Instruction Packages becomes very imperative in teaching and learning arena, a very useful and successful mode of teaching and learning. Zhu and Chang, (1998) in Lou, Guo, Zhu, Shin, Dzan (2011) submitted that Computer Assisted teaching has six characteristics: interactivity, adaptive, learner controlled, inexhaustible, and unlimited in time, space and manageability. While, computer-assisted are tutoring, practicing, simulating and playing (Hsu, 2007). CAI promotes learning in convenient learning environment because it was not limited by time and location (Lin, (2003). In essence, Lu, (2003) admitted that students can repeatedly asses and practice different task without any physical teachers and time limitations.

Nwobi and Uwandu, (2007), submitted that empirical studies on CAIP, has been employed and effective in teaching and learning of the subjects on the school curriculum as follows, in technical education (Paul & Babaworo 2006). Physics, (Gambari and Mogbo 2006). Geography (Egunjobi 2002). Statistics (Busturk 2005). Metal Analysis, (Liao 2007). Biology (Yusuf & Afolabi 2010). Mathematics, (Maitoned, Dupaul & Jitendra 2005). Musculus Skeletal, (Ford, Mazzone & Taylor 2005). English, (Kılıçkaya, 2007). Physical Education, (Alhayek 2004). Psychology, (Worthington, Welsh, Archer, Mindes, & Forsyth 1996). While related studies have shown positive and affirmative views on the results of CAIP and Music (Gao, 2007; Cheng, 2007; Lee, 2007). Review of empirical studies on gender revealed that gendered perception is a reality in music (De-Norn 2000). Music is a dynamic mode of gender identity, which is an avenue for gender to exhibits a unique trait (Taylor 2012). Gender has been the innate in the fundamental structure which music is

formed (Brett, Wood, and Thomas 2006). Male and female are different in pitch ranging from speech, females are also reported to experience chills in response to music more than male (Panksepp 1995). Theope, (2012) concluded on gender that the neutral sex differences in the way that males and females process and predict music are significantly different. In essence, Instructional Design (ID) also called Instructional System Design (ISD) is a systematic procedure for developing educative and training programmes in a consistent and reliable fashion (Gustafson and Branch 2002). The research is based on the Morrison, Ross, and Kemp Model the system approach where the ID process is presented as a continuous cycle and finally housed a greater emphasis on how to manage an instruction (Yavuz, 2007). The development of CAI followed a systematic approach of instructional development model put forward by **Morrison, Ross, and Kemp Model**. The MRK model consists of nine interrelated steps from identifying instruction design problems and specifying them to the evaluation of instruments. However, two trials were made before the package become successful. It was then tested with few selected secondary schools in Oyo Township. The schools used for testing the package falls between the population of the study but not part of the schools selected for the sample of the study. Some of the complaints from these selected students about the package were later used for further modification in order to get the final package used for the experiment.

Statement of Problem

Music is purely practical oriented subjects, skills, learnt and acquired through constant practice and repetition. The declines in music education in schools are results in poor concert, decline in the music industry, lack of appreciation of classical music and lack of adequate pedagogy (Rabkin and Hedberg 2011). The poor performances of the students in the Senior Secondary School Certificate Examination by the chief examiners' reports that candidates non attending a recognised music training school, no proper preparation of the candidate for the examination and inadequate study of the music syllabus before examination reported by chief WASSEC examiner. Based on the aforementioned, the remedies of going to music school to acquire the training, through preparation and study of the syllabus can be experience and achieved in the Computer Assisted Instructional Package. Therefore CAIP will fill the existing gap since, computer has been found to be effective device for classroom instruction using different software (Gambari & Mogbo, 2006; Tekos & Solomon Idou, 2009; Yusuf & Afolabi, 2010).

Purpose of the Study

The study sort to examine the effect of the Computer Assisted Instructional Package on the Teaching of Music, in Senior Secondary School in Oyo. Oyo State Nigeria. It will further examine the differences in the performance of gender.

Research Questions

The study sought to answer two research questions below:

1. Is there any difference in the academic performance of students exposed to computer assisted instructional package and those taught using conventional method
2. Is there any difference in the performance of male and female students exposed to computer assisted instructional package

Research Hypothesis

The following research hypotheses were tested in the study.

- H₀₁ There is no significant difference between the performances of students in music when they are exposed to computer assisted instructional packages.
- H₀₂ There is no significant difference between the performance of male and female students in music when they are exposed to computer assisted instructional packages.

Research Design

This study was a quasi-experimental type of the pre-test, post-test, non-randomized, control group design. The design is a 2x2 factorial design.

Sample and Sampling Technique

The population for this study was made up of the entire senior secondary class one (SSI) students in Oyo, Nigeria. The sample subjects were drawn from two co-educational schools where music is taught at Senior Secondary School in Oyo Town. The samples from co-educational schools were selected by the use of stratified random sampling technique. This method was chosen so that the gender variable could be appropriately represented. Eighty (80) music students were randomly selected for the study from the two schools. In all there were forty (40) male students and forty (40) female students. The students were taught the same topics ***theory of music, fundamentals of music, Rudiment of music***, with both conventional method and computer assisted instructional package.

Research Instrument

The main instrument used in generating data for this study was the Computer Assisted Instructional Package (CAIP)" and the test instrument which is "Music Performance Test (MUPET)" which was made up of twenty (20) multiple choice objective question items designed to measure specific learning outcomes related to the concept of the study. The treatment instrument, Computer Assisted Instructional Package (CAIP), was a self-instructional, interactive package that lasted for eight hours. It contained six lessons structured into modules. Research instrument employed the test instruments Music Performing Test (MUPET)" was made up of 20 items multiple-choice objective test with five option each, selected from validated West African Senior Secondary School Examination Music question papers. The MUPET was used to measure the performance of students in the experimental and control group for pre-test (covariate) and post test. The CAIP packages were developed by a professional computer programmer, with the assistance of a Professor of Music. The package was divided into six topics of six lessons,

of forty minutes each on the content of the curriculum in Music. *The chosen topics were theory of music, fundamentals of music and Rudiment of music.* For the experimental group, the CAIP packages were used to disseminate the content of the lesson by the computer instructor. While the traditional group were taught accordingly. The total scores of each of the students at the pre-test and post-test were calculated. In testing the hypothesis Analysis of Covariance (ANCOVA) static was used.

Method of Data Collection

The data for testing the hypotheses were collected from the pre test and post test administered to the subjects used in the study. Each of the tests was marked and scored over 20. The experimental groups were exposed to Music lesson using Computer Assisted Instructional Package for the period of six weeks while the control group were taught the Music lesson with conventional method. The total number of lesson within Six weeks was twelve periods lasted for forty minutes per period. After the duration of six weeks of treatment for the experimental group and six weeks of conventional method with control group, post test was administered to both groups at the same duration. For the experimental group, multimedia projector was used to teach the lessons. The computer instructor handles the projector with the assistance of the music teacher. The second researcher taught the conventional group without the appropriate instructional materials. The scores obtained from two intact classes of 40 students experimental group and 40 students control group were computed and used in testing hypotheses. The (ANCOVA) Analysis of Covariance statistic was used to calculate the student pre-test and post-test scores of each student.

Result

Hypothesis One

There is no significant difference between the performances of students in music when they are exposed to computer assisted instructional packages.

Table 1: Analysis of Covariance (ANCOVA) on the Post-test Performance Scores of Students in the Experimental and Control Group

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	87.987	2	43.993	8.865	.001
Intercept	139.009	1	139.009	28.012	.000
Pre test	54.701	1	54.701	11.023	.002
Treat	15.157	1	15.157	3.054	.089
Error	183.613	37	4.963		
Total	5654.000	27			
Corrected total	271.600	26			

Table 1 indicates that the calculated F value of 3.054 is significant because the significant value of .089 is lesser than 0.05 alpha levels. The result implies that there is significant difference between post-test mean scores of students. That is, students score is significantly differ from both taught using Computer Assisted Instructional Packages and conventional method. Therefore, the null hypothesis is rejected.

Hypothesis Two

There is no significant difference between the performances of male and female students in music when they are exposed to computer assisted instructional packages

This hypothesis was tested using the ANCOVA statistic methods to compare the means scores of student in experimental group (stratified into male and female) with the pre-test scores serving as covariates, the result is as reflected in table 2.

Table 2: Analysis of Covariance (ANCOVA) on the Post-test Scores of male and female in the Experimental and Control Group

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	38.176	2	19.088	3.026	.061
Intercept	156.097	1	156.097	24.743	.000
Pre test	36.944	1	36.944	5.856	.021
Treat	4.890	1	4.890	.775	.384
Error	233.424	37	6.309		
Total	5654.000	40			
Corrected total	271.600	39			

Table 2 indicates that the calculated F value of .775 is significant because the significant value of .384 is bigger than 0.05 alpha levels. The result implies that there is no significant difference between post-test mean scores of the both male and female students. That is, students score is not differ significantly from both taught using Computer Assisted Instructional Packages and conventional method. Therefore, the null hypothesis is accepted.

Discussion of Findings

The present results of the analyses related to the hypothesis one indicated significant difference in the performances of students in experimental group (computer assisted instructional packages) and conventional method of teaching that those in experimental group performed better than those with conventional teaching. The present results of the analyses related to the hypothesis two indicated a no significant difference in the performances of male and female in the experimental group (computer assisted instructional packages) and conventional method of teaching. These findings agree with earlier findings of Egunjobi, (2002) in geography, Udousoro, (2000) in mathematics, and Okoro, and Etukudo, (2001) in chemistry, of Fakomogbon, Adetayo. Oyebode, Enuwa

(2014) on mathematics, conducted in Nigeria which confirmed that CAIP has been effective in enhancing students' performance in other subjects than the conventional classroom instruction. These findings show that there is no gender influence on the performance of students in music whether they were taught with CAIP or not. The findings agreed with the studies of Okoro and Etukudo (2001), Anulobi (2009) respectively while, the finding disagree with Ash (2005), Basturk (2005) and Dantala (2006) who found no significant difference between male and female students taught physics and history using Computer Assisted Instructional Packages. The findings contradict Yusuf and Afolabi (2010) that gender has no influence in the academic performance of male and female students exposed to Computer Assisted Instructional Packages. Thus, this shows that computer-assisted instruction packages enhanced the performance of both male and female students. Findings indicated significant difference between the performances of students exposed to Computer Assisted Instructional Packages and those with conventional method. Thus, the students taught with innovative ideas especially technologies did not degenerate on outcome assessments and that if new technologies are integrated into teaching and learning, there is greater student involvement in learning, and greater engagement equals to higher achievement. The findings recorded better performance of students in Computer Assisted Instructional Packages.

Conclusions

Since Computer Assisted Instructional Packages like other new innovation technology in the field of teaching and learning improves, enhances, and promotes the academic performance of students and enhance effective instructional delivery in the secondary schools. The government should be encouraged to develop relevant Computer Assisted Instructional Packages for use within the Nigerian Schools System.

Recommendations

From the findings of the present study, the following recommendations are made: The curriculum planners should design and encourage the use of computer in teaching / learning and be made mandatory for teachers and students. Seminal and trainings should be given to teachers on the planning, designing, production and use of computer instructional packages and that school should be equipped with internet facilities, instructional packages for teaching and learning purposes.

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**APPENDIX
RAW SCORES**

		MALE SCORES	MALE SCORES	FEMALE SCORES	FEMALE SCORES	ALL. STD.	ALL STD
S/N	GROUP	PRE TEST	POST TEST	PRE TEST	POST TEST	PRE TEST	POST TEST
1	E X P E R I M E N T A L G R O U P	10	10	10	18	10	10
2		12	8	8	16	8	10
3		8	8	6	15	8	10
4		5	5	4	12	5	10
5		6	10	2	10	10	10
6		5	8	3	12	8	12
7		4	5	5	16	5	13
8		2	10	7	12	10	12
9		3	10	9	14	10	11
10		4	10	10	12	10	14
11		6	12	9	14	12	15
12		4	12	8	16	12	13
13		5	12	7	14	12	16
14		7	14	5	12	14	15
15		5	12	3	10	12	14
16		6	14	6	10	14	16
17		9	12	8	10	12	14
18		10	14	9	15	14	13
19		9	12	10	16	12	15
20		4	10	9	12	10	13
21	C O N V E N T I O N A L G R O U P	7	10	6	18	18	18
22		4	10	4	16	16	16
23		8	10	5	15	15	15
24		9	10	4	12	12	12
25		10	10	7	10	10	10
26		10	12	4	12	12	12
27		12	13	3	12	16	12
28		10	12	4	14	12	14
29		14	11	8	15	14	15
30		12	14	7	16	12	16
31		10	15	8	12	14	12
32		11	13	10	14	16	14
33		12	16	8	16	14	16
34		14	15	6	12	12	12
35		10	14	9	12	10	12
36		10	16	8	14	10	14
37		12	14	9	15	10	15
38		10	13	10	18	15	18
39		11	15	11	20	16	20
40		10	13	12	20	12	20