

EFFECTS OF COMPUTER ASSISTED INSTRUCTIONAL PACKAGES ON THE PERFORMANCE OF SENIOR SECONDARY SCHOOL VISUAL ART STUDENTS

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Abstract

The application of technological tools such as computers in education has significantly been enhancing teaching of Visual Arts which people believe are not lucrative and are lazy man's work. This study examined the effects of Ceramics computer assisted instructional package (CCAIP) on Senior Secondary School Students' performance in Visual Art (ceramics) in Ogbomoso, Nigeria. Samples comprised 50 students from two purposively selected secondary schools in Ogbomosho Nigeria. The research instruments were structured questionnaire Visual Art Performance Test (VIAPET) and developed Ceramic Computer Assisted Instructional Package (CCAIP) developed using the five stages of ADDIE model. The experimental group was exposed to CCAIP, while the control group was exposed to VIAPET Three research questions were raised and answered and three corresponding hypotheses were generated and tested, hypothesis one and two were tested with t-test while hypothesis three was tested using Analysis of covariance (ANCOVA). Results indicated that $t(48) = 2.68$ with $p = 0.91$, $t(48) = 5.96$ with $p = 0.63$ and $F(1, 47) = 5.432$ with $p = 0.823$, which implied that no significant difference occurred between the performance of students taught with CCAIP and those taught with VIAPET. Even though no significance difference existed, the study however recommends that CCAIP should be developed for teaching difficult Arts concept since it can create much excitement in students.

Key words: Visual art, Ceramic Computer assisted instructional package, Gender

Introduction

Visual Art is an access into a world of sensation and experience with an opportunity to explore using various media to produce things for aesthetics and educational purposes. Uzoagba (2000) expressed art as the power of doing something which is taught by nature and instinct. It is the expression of man's abilities, skills and aptitude in various ways. Art encourages rapport between the children and bring them in close contact with culture and that of distant places (Elufadeju, 2012). Art can be either visual or Non-visual. Visual Art include visible products like painting, graphics, photography, textile, sculpture and ceramics, while non-Visual Art refers to products cannot be seen with ordinary eyes, they are purposely for entertainment and recreations. Education is a means of empowering learners, using various skills and resources to complement teaching. Learner centred method of education considers and makes use of all that is required to ensure that learning takes place. Information and Communication Technology (ICT) encompasses use of technological tools like video, computer, slide synchronise with audio and the internet as innovative tools to simplify and enrich learning Use of Computer package is a technology that provides innovative tools to solve learners' problems which eventually makes the subject interesting to learners.

Chief examiner's report (2010) indicated that many students avoid studying Visual Art because of its complexity and lack of adequate instructional materials to complement teacher's effort leading to poor academic performance. Some parents also discourage their wards from offering Visual Arts erroneously labelling that they are lazy man's work.

Also Soetan, Aboyeji & Alasan (2013) opined that teachers preferred to teach other aspects because ceramics is dirty, tasking and the process is demanding. Hence the use of CCAIP to teach ceramics will make it adaptable to improved skills of producing ceramics wares. Computer is an ICT tool that appeal to learners senses in order improve students' learning styles and preference more effectively than the conventional approach of teaching and learning. CCAIP removes the complexity of teaching and makes the learning of Visual Art (ceramics) more fascinating and exciting which can sufficiently guide students to watch and produce ceramic wares that could be physically seen. This study examined the effect of computer assisted instructional package on the performance of Senior Secondary School Visual Art students.

1. Ascertained the difference between the pre and post-test scores of students in the control group and those in the experimental group.
2. Examined the difference between the performance of students taught Ceramics with CCAIP and those exposed to VIAPET,
3. Investigated gender influence on the performance of students exposed to CCAIP and those exposed to VIAPET.

The following questions were raised to guide the study

1. Is there any difference between the performance of students in the pre and post test scores of students in the control group and those in the experimental group?
2. is any difference in the performance of students taught Ceramics with CCAIP and those exposed to VIAPET,
3. Does the students' gender have any influence on the performance of students exposed to CCAIP and VIAPET?

H₀₁: There is no significant difference between the pre-test scores of students of control group and experimental group.

H₀₂: There is no significant difference the performance of students taught Ceramics using Computer Assisted Instructional Package and Conventional method.

H₀₃: There is no significant difference in the performance of students taught Ceramics using computer assisted instructional package and those taught with conventional teaching method based on gender.

Review of Related Literature

Educational technology recognizes diverse learners' needs, hence the use of resources to solve learners' problems. Soetan (2009) opined that Fine artists and Educational Technologists possess skills and expertise in designing and producing useful and valuable instructional materials to enhance teaching, proper integrations of ICT tools like videos projectors and computer will foster learning at all levels of education. In support of use of ICT, FRN (2009) submitted that government shall provide adequate infrastructural and develop capacity for effective utilization of information (ICT) to enhance the delivery of Basic education in Nigeria. It infers that use of various strategies and tools could employed to improve students' academic performance. Kalilu (2013) opined that technology is a collection of technique, a current state of knowledge on how to combine resources to solve problems, which include technical methods, skills, processes, tools or raw materials. Visual Art on productivity and economic development made it vital part of national development strategies in many nations which enables production of skilled individual who can think rightly and work with their hands using available materials, ICT is any equipment that is used for the automatic acquisition, storage, manipulation, management, control, display, switching and transmission of information. (FRN, 2009) Visual Art, a major subject taught in Nigeria Senior Secondary Schools to

uphold the culture of the nation should be made compulsory for its creative nature to turn Nigerian fortune around its evolution of technology that will meet International standards on the one hand, and on the other hand vocationalise its economy in order to transform it from its current consumer nature. (Kalilu 2013) It is a means of expression, cultural preservation, beautification, and a means of livelihood where by students could be self-reliant at completion of secondary school education. Unegbu (2014) corroborated that Visual Arts are aesthetic, and aesthetic brings about happiness and happiness prolongs life which means that there is Life in Art. Visual art has lots of opportunities for people that offer it

The computer is used tremendously in Senior Secondary Visual Art classes: for drawings, graphics, creation of patterns scan motifs, images and photographs. It is also used for mixing, separating and applying colours. Art work can also be exhibited, viewed, appreciated and purchased on the Internet where by individuals can order for such works. Alhayek (2004) submitted that computer technology has been significantly used in educational process at all levels; it has become an integral part of academic disciplines, which improved teaching and learning processes positively.

However, Mills (2001) supported that CCAIP was found to be an effective tool in genuine classroom learning which entails the use of the computer as a means of successful lesson delivery, when teacher might not be present. Christensen and Knezek, (2001) posited that the use of computers have positively effected students' performance compared to traditional strategy. Some of the benefits of using CCAIP include emphasis on active learning, enrichment of collaborative learning, encouragement of greater students' independence and task-based teaching (Spinelli, 2001). Use of CCAIP encourages discovery, strategies where students are actively involved in the process of practical assignment where students can produce their wares having watched the programme which could be submitted physically

Methodology

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

The target population of this research was the first year Senior Secondary Visual Art students in Ogbomoso town, Nigeria. The students were selected from two purposively sampled secondary schools that have computer facilities. Fifty (50) students were randomly sampled: 16 boys and 7 girls for the experimental group and 19 boys, 8 girls for the control group.

The research instruments CCAIP and VIAPET which covers adapted ceramic aspect of Nigeria senior secondary school visual art curriculum from material for clay modelling, preparation and modelling technics. The instrument was package by professional programme developer and evaluated by one Computer Analyst and two Fine Art teachers for suitability to teach.

The VIAPET contained 30 multiple-choice objective tests with five options each, adopted from validated West African Senior Secondary School Examination Visual Art question papers. The VIAPET was used as pre-test and post-test. The experimental group was exposed to CCAIP with multimedia projector while control group was taught using conventional strategy by one of the researchers. ANCOVA was used to calculate the students' pre-test and post-test scores using SPSS (version 20.0).

Results

Analysis of data collected through the administration of the CCAIP and VIAPET

The t-test score reflecting the differences in the control and experimental group is presented in table 1

Table 2

t-test on difference between the pre-test scores of students of control group and experimental group.

Groups	N	X	df	t	Sig (2-tailed)	Decision
Control	23	26.56	48	2.68	0.91	Not Rejected
Experimental	37	26.39				
Total	50					

As indicated in Table 1, the result $t(48) = 2.68$, $p > 0.05$ which implies that the null hypothesis was not rejected because the significant value of 0.91 is greater than 0.05. This means that averagely, pre-test scores of students within the control group did not differ with students in experimental group.

Similarly, the test score indicating the difference between the performance of students taught ceramics with CCAIP and conventional strategies

Table 3:

t-test on difference the performance of students taught Ceramics in Visual Art.

Groups	N	X	df	T	Sig (2-tailed)	Decision
Control	23	42.23	48	5.96	0.63	Not Rejected
Experimental	37	42.79				
Total	50					

Table 2 revealed that $t(48) = 5.96$, $p > 0.05$ since the significant value of 0.63 is greater than 0.05, the null hypothesis was thus not rejected. This implies that there is no significant difference the performance of students taught CCAIP and conventional strategies.

In order to ascertain whether there is no significant difference in the performance of students ANCOVA was used to test the hypothesis

Table 3:

Analysis of Covariance (ANCOVA) on the Post-test and Post-test Performance of male and female Students taught Ceramics.

Source	Type III sum of Square	df	Means square	F	Sig	Remarks
Corrected Model	2.614	2	1.206	0.078	0.254	
Intercept	1362.049	1	468.230	165.237	0.000	
Gender	11.244	1	5.432	21.131	0.823	Not Rejected
Pre -test	466.053	1	167.186	17.233	0.523	
Error	154.431	47	18.236			
Total	2145.123	50				
Corrected total	258.066	49				

Table 3 revealed that no significant difference in the performance of students taught Ceramics based on gender with $F(1, 47) = 21.131$, $P > 0.05$. With the p value of 0.823 which is greater than 0.05, hence the null hypothesis was not rejected. This implies that the performance of male students taught ceramics did not differ from their female counterparts. Therefore, there is no significant difference in the performance of students taught Ceramics based on gender.

Discussion

Though no significant difference occur between the groups exposed to CCAIP and conventional strategies and no significant difference occur in the performance of students based on gender. It implies that the two treatments improve learners' performance. This is an agreement with Christensen and Knezek, (2001) and Soetan, Aboyeji & Alasan, (2013). that usage of multi-media motivates learners and has positive effect on their performance. The findings established that use of CCAIP was good and promoted effective instructional delivery in secondary schools.

Educational Technologists should be encouraged to produce relevant media to teach difficult concepts in other school subjects. Instructional packages must be subjected to evaluation by Educational Technologist before it is administered to the students. Parents should encourage their wards that have artistic skills to embrace use of computer to support their learning. Government should provide ICT facilities like computers to enhance teaching all subjects in schools for students to be fascinated towards ceramics for them to be self-reliant instead of looking for white collar jobs.

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