Assessing Learning Experiences of Senior Secondary Schools Students in Visual Arts through Web-Based Instruction

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Abstract

Web, an internet platform, is accessible through technology devices for given information, but its role has been shifted towards the instructional delivery system. However, its usefulness, utilisation, and importance to learning is yet to be explored. Therefore, the present study investigated the effectiveness of web-based instruction package on the learners' academics performances in visual arts in Nigerian Senior Secondary School. Pre and post-test group were adopted for 60 Senior Secondary Schools, of class two (SSS II) learners from three co-educational and recognised non-governmental schools in Ogbomoso, Oyo State. Nigeria. Research questions and null hypotheses are formulated for the study at 0.05 level of significance. Visual Arts Web-Based Performance Test (VAWPT) consisted of 50 validated items, from NECO and WASSCE visual arts past examination. The data were analyzed with ANCOVA, t-test, and ANOVA for three hypotheses. The study revealed that learners taught under WBI Package performed well and there was no significant difference between the mean scores of both male and female visual arts learners exposed to Web-Based Instruction (WBI) Package. Although there were significant differences in performances in the school. In this study, WBI was further suggested for handling the visual arts learners.

Keywords: Internet, Web, Senior Secondary Schools Students, Visual Arts learners, instruction.

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Introduction

Visual arts as a creative subject on the Nigeria Senior School curriculum are realistic and assumption. It stimulates, pragmatic and inevitable because the discipline intermingle both theory and practice of the division of arts; Drawings, Paintings, Graphics, Textiles, Ceramics and Craft, to develop creative and skill acquisitions, in the context of learners (Odewumi, Omoyajowo, Onojah & Ajala, 2018). Visual arts as an expression of skill for creativity and thoughts, it also develops knowledge and appreciation of learner's cultural heritage with other people's culture (Adeyemo, 2014; Odewumi (2017). The study of Mcdougall, Bever, and Seper (2011) submitted that visual arts enables learner to imagine and create things from memories. These aspirations are yet to be achieved because of unenviable issues relating to its existence on the school curriculum which web-based instruction can alleviate.

The educational integrating Information Communication Technologies (ICTs) promotes utilisation of the web for instruction, this in turns facilitates flexibility of mind and makes learning to be positive(McHaney 2011).The study of Bhagat, Wu, and Chang (2016) established that the World Wide Web is an integral of the internet, technology of instructional innovative and user friendly. Kaplan and Michael (2010) explained that the Web, featured in 2004 purposely to clarify the evolution of the World Wide Web stage from the broadcasting to instructional delivery and has the web pages address prefixed of WWW. Khan (1997) submitted that WBI is referred to as a computer-based instructional approach type, which is used as a preliminary medium of handling information in instruction. It is also an instructional receiving agent, which creates great opportunities for learners to learning in all stages of learning life. It encourages both individual and cooperative learning. Rubin (1997) itemised the three important traits of web design namely, the hypertext, the delivery of multimedia, and true interactivity. Although, ICT makes learning positive and collaboration easier within the instructor and pupil through the appearance and usefulness of web for instructions (Yunus, Salehi & Chenzi, 2012), but web-Based technology of instructions have great potential for instructional delivery (Severova, 2015), when comparing with other technology of instruction.

Empirical studies on Web-Based Instruction remained controversial among researchers; scholars perceived the usefulness of Web in given instruction as functional in the context of teaching and learning. For example, Ball and Crook (1997) researched the execution

of WBI in institutions. The authors concluded that the responsiveness and flexibility of e-learning provides immediate results to the struggle of geographical accessibility. Ludlow and Platin (2000) confirmed the functionality of webpage (WP) instruction in the radiographic anatomy class for year one dentists. Also, Tatana and Robert (2002) established the Web-Based instruction as functional and positive in the learning of environmental studies.

Similarly, in health sciences, the study of Potomkova, Mihal and Cihalik (2006) examined the web implementation for the teaching of medicine, the authors concluded that Web-Based is a vital tool and productive in medical training Courses. Boyle and Wambach (2003) verified the usefulness of the conceptual model of graduate nursing through Web-Based instructional design. Holly (2013) submitted that Web-Based resources develop and increase prospective dentists and scientific researches.

Several studies have been conducted on the web for teaching and learning globally. Studies have confirmed the effectiveness of the web for enlightening the undergraduates' scholars. For example, the study of Lamaster and Knop (2004) re-affirmed the functionality and affirmative of Web-Based in e-learning and distance education on students' of higher studies. Akmal (2017) established Web-Based instruction as a learning tool for writing skills among the pre-service teacher. In the same vein, Badmus (2013) established Web Quest application as positive for teaching educational technology courses in Nigeria University.

Literature Review

Anunobi, Gambari, Alabi and Abdullahi (2017)reported that Web-Based was adequate and valuable for teaching of basic technology discipline.Despite the aforementioned works on the web, the private schools that possess, ICT infrastructures are privilege to utilize the World Wide Web through connectivity for learning. No wonder, the study of Anunobi, Gambari, Alabi, and Abdullahi (2017) revealed that the teacher-centered method dominates the instructional system for students in most of the Secondary School axis in Nigeria. The authors further stressed the value of Web-Based for teaching of basic technology discipline. Sivapalan, Wan Fatimah Ahmad, and Nur Khairun Ishak (2009) expressed multimedia means of Web-Based, graphics, and the animation of texts in learning and reading as very useful and of great assistance in teaching and learning of languages. Similarly, Khan (2011) stressed the Web-Based instruction as providing opportunities for mutual

engaging and interactive collaborative teaching between the learners and instructors.

In another development, Gender is a variable that also influences Web-Based instructional delivery. The influence of gender on students` achievement has for a long time been a concern to many researchers. Many scholars had sought to determine whether it is true that there is male superiority in students' achievement or not. The study of Sudha and Amutha (2015) in Chemistry and Fakomogbon, Morakinyo, Ibrahim (2012) in Basic Technology revealed that male students in higher secondary outperformed other female students when exposed to Web-Based instruction. Cyr and Bonanni (2005) reported differences in males and females concerning their ability and belief in terms of information given on the internet, it was further stressed that females trust less such information than males and concluded that Web-Based is an effective instructional medium for improving male and female academic performances (Olson & Wisher 2002; Bernard & Cummings, 2003).

On another development, studies have uncovered the problems militating against the teaching of visual arts. For example, the study of Matthew (2013) listed many challenges, facing the teaching of visual arts, such as inadequate teaching materials, resources, and facilities, shortage of qualified art instructors, poor background of learners entry-level and poor curriculum planning and development. And also, Odewumi and Okonkwo (2017) stressed that the value of arts-based instruction in Nigeria is diminishing due to some challenges which are the negative perception of learners towards arts, parents' attitude, and even the community at large. In the same vein, Mohammed, Mazila, and Amsami (2015) itemised another challenge as the poor attitudes of learners, and lack of seriousness, lack of qualified art teachers, and teaching resources. Uwaifo and Edigin (2011) mentioned curriculum inadequacy and the problem of funding. In essence, Winner, Goldstein, and Vincent (2013) concluded that the Teachers are also facing the challenges of efficient and creating of adequate learning method of innovation for the visual arts curriculum.

Nevertheless, Shieh and Yu (2016) suggested guided discovery pedagogical to influenced both male and female learners positively and increase their retention. Although, the concept of theory that learners construct mostly their own knowledge acquires from experience and environment which is based on constructivism. Duffy (2006) submitted that a constructivist instructor and constructivist classroom are interactive and learners centred.

Statement of problem

Teaching and learning is the means for developing learners. Therefore, tutor most often vary the instructional technique to incorporates ICT tools into actualize classroom commands (Mat-jizat& McKay, 2009). Although, the augment speed of technological context has put an amplify to the evaluation of instruction delivery globally (Murnane & Steele, 2007). The surfacing of these technological innovations especially in computing technologies provides the potential for improvement, for example, the web-based. Rezende, Albuquerque and Ambrosio (2017) expressed that the speedy evolution of technology has brought changes in the face of education due to the combination of technology and passable pedagogical means. The extent to which WBI is effective in instructional delivery in Nigeria Secondary Schools is still unknown. Therefore, it is against this backdrops that the present study critically studied, examined and filled the existing gaps which have been laying down by previous studies especially in investigating the efficacy of integrating WBI on learning of Visual Arts in Nigeria Senior Secondary Schools and to answer the question whether Web-based Instruction Achieve Eminence and Efficiency of Visual Arts?

Research Questions

These questions were responded to in the study.

1. How does the students perform in visual arts when they are exposed to Web-Based Instruction (WBI)?
2. Does the gender of visual arts students influence their performance when they were exposed to teaching via WBI?

Research Hypotheses

The hypotheses were formulated and tested at 0.05 level of significance.

H_o1. There was no significant difference in the performance of visual arts scholars trained through Web-Based Instruction and those trained through conventional techniques.

H_o2. There was no significant difference in the performance of visual arts male and female scholars trained through WBI.

H_o3. There was no significant difference in the performance of the students from three visual arts schools taught through Web-Based Instruction.

Research Design

The quasi-experimental which involves the pre and post-test grouping was utilised. Whereas, the Visual Arts scholars belonging to Senior Secondary in Ogbomoso, Nigeria, constituted the targeted population of this study. The visual arts students were selected based on parental consent.   Letters were sent individual parents giving the details of the assignments and only the students whose parents show interest and responded positively were chosen for Web-based study.

Sample of the Study

The study involved sixty (60) Senior Secondary School Visual Arts students, purposively selected from three private Senior Secondary School. The school was selected based on these criteria: Visual arts is inclusive in the subjects taught in the school; the school has qualified Visual arts teachers. The school has been producing Visual arts students in Senior Secondary School Certificates Examination (NECO and WASSCE) for the past five years.   The Visual arts students from the sampled school were randomly assigned to both experimental and control groups consisting of thirty female and thirty male totals of sixty visual arts students.

Research Instruments

The Web-Based Instructional Package ,adapted from Idowu (2017)was used in the study because its courseware content was similar to the curriculum of the present study. The courseware was written on the SSCE curriculum from the Federal Government of Nigeria through the Examination Bodies; West African Senior Secondary School Certificate Examination and National Examination Council (WASSCE & NECO) and the visual art test, as a test instrument. The test instruments in use to draw together the data were the Web-Based Visual Arts Performance Test (WVAPT) which consists of 50 objective questions. The test was taken from the validated Senior Secondary School National Examination Council Examination past question on Visual arts as already been stated.

Experimental Procedure

The modalities of instructions, aims, and objectives guiding the experiments were well-stated in the operational manual guide which were adequately handled to both the teachers and students. While the most senior computer instructor handled the instruction through Web at the ICT centres in their various school. The treatment lasted for six

weeks. The researchers and the experience Visual arts Teachers served as the co-instructor in handling the conventional group in the same duration in the school art studio with appropriate instructional resources. After the treatment, the visual arts students were tested on paper and pencil with a Web-Based Visual Arts Performance Test (WVAPT) and the learners were scores and their scores were based on 50 marks.

Data Analysis

The learners' scores were further analyzed along with the hypotheses in ANCOVA, t-test, and ANOVA at 0.05 level of significance.

Testing of Hypotheses

H_o1.There was no significant difference in the performance of visual arts scholars trained through Web-Based Instruction and those trained through conventional techniques.

There was no significant difference in the performance of visual arts scholars trained through Web-Based Instruction and those trained through conventional techniques. ANCOVA was used to test this hypothesis as clearly stated in Table 1.

Table 1:

Analysis of Covariance of scholars exposed to web-based instructional Package and those trained through conventional technique in teaching

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	12.144[a]	14	.867	.751	.701
Intercept	138.419	1	138.419	119.859	.000
VAR00004	.011	1	.011	.009	.925
VAR00002	11.704	13	.900	.780	.671
Error	17.323	15	1.155		
Total	2214.000	30			
Corrected Total	29.467	29			

a. R Squared = .412 (Adjusted R Squared = -.137)

Table 1 showed that F-value = .780 and p> 0.05 alpha level so, the researcher failed to reject the null hypothesis.

H_o2. There was no significant difference in the performance of visual arts male and female scholars trained through WBI.

This was tested by applying t-test and can be seen in table 2.

Table 2
t-test values for performance of visual arts male and female scholars
trained through WBI

Variable	Mean	Std. Deviation	Df	T	Sig. (2-tailed)
Male	33.4	9.57	58	1.360	.136
Female	29.7	11.42			

Table 2 showed the result of t=1.360 and p> 0.05 alpha level; so, the
researcher failed to reject the null hypothesis.

H_o3. There was no significant difference in the performance of the
students from three visual arts schools taught through Web-Based
Instruction.

For testing the third hypothesis, mean performance of students from
three schools exposed to web-based instructional package were analyzed
using ANOVA as shown in Table 3.

Table 3
Analysis of variance for performance of students of three school exposed
to web-based instructional.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.s
Corrected Model	1792.300[a]	2	896.150	10.535	.000
Intercept	59724.150	1	59724.150	702.123	.000
FACTOR	1792.300	2	896.150	10.535	.000
Error	4848.550	57	85.062		
Total	66365.000	60			
Corrected Total	6640.850	59			

Table 3 revealed the values as F = 10.535 and p < 0.05 alpha level. It
showed a difference among different schools where the students were
taught through web-based instruction; so, the null hypothesis was
accepted.

Result and Discussion

The finding was in line with Yavuz Erdogan, Servet, Bayram,
and Levent Deniz (2008) who confirmed that Web-Based Instruction
showed positive effect and also effective for learners' academic
achievement. The finding was also in line with Sawant and Shinde
(2012) who were of the view that Web-Based education has positive and

corroborative effect on the learners' academics performance. The finding was also supported with the findings of Annie (2013) who confirmed that Web-Based produced better performances of students over the traditional mode of learning. The findings conformed to the conclusion of Akmal (2017) who submitted that Web-Based learning significantly influence and improving the writing skill.

The finding agreed with Khachakrit Liamthaisong, Sangkom Pumipuntu, and Sani Kayapard. (2011) who revealed that students gained more knowledge through the Web-Based instruction in the subject. The findings conformed to the conclusion of Ha Jin Hwang (2011) who studies exposed WBI as imperative to education and classroom instruction of students centered. In essence, the study agreed with the study of Annamma (2013) who stated that Web-Based developed scientific skills in higher secondary students. The finding negates the finding of Sudha and Amutha (2015) who stated that there are significant mean scores in terms of the pre and post-test in the WBI. Also, the study of Kathryn and Nancy (2004) recognised several issues and concerns such as confusing instructions for assignments, lack of interactivity, instructional alignment, and poorly designed test questions that may be of hindrances that may result in differences when handling the Web-Based course. And also, Erickson (2003) established no significant difference based on the test of the pharmacy students' scores on Web-Based tutorial and those learners with conventional treatment.

The hypothesis based on gender, the finding contradicted the study of Anunobi, Gambari, and Abdullahi (2016) and supported by the study of Al-Qeisi (2015) who expressed that there is apparent significant difference mean scores of both female and male learners taught via WBI. The result also disagreed with Babalola, (2016), Tselio, Daskalakis, and Papadopoulou (2011) who confirmed that there was no significant difference between the user of Information Technology resources for educational study and expressed that similarities among both female and male learners judicious utilizing of the web.

Conclusion

The visual arts students in Senior Secondary school regardless of the sex were affected positively through the Web-based Instructional Package. This revealed that there was great improvement in visual arts students' performance. Therefore, this study has been undertaken with a sight to provide a standard report of the effectiveness of WBI on visual arts in selected private senior secondary schools with Oyo State, Nigeria. The findings as well as the conclusion can be generalized to a greater

extent in that particular area with reference to secondary school students. Because the aims and concepts of study, access, and method to the WBI, are related to the visual arts lessons. Based on the findings of this study, the following steps are suggested for future researchers: Efforts to replicate this study in other geo-political zones of Nigeria and other African countries should be made. Comparison of their findings would authenticate the validity of the findings of this study. Similarly, future studies should also be conducted at the Junior Secondary School.

Based on this study, following recommendations are put forward: the proprietors should assists to provide the materials for the production of WBI. The educational technologist should be encouraged to produce WEB for teaching and learning of visual arts. Visual arts teachers should be mandated to utilized WBI for teaching of visual arts.

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