Students Exploring Educational E-learning Technology of Podcasts on Fine Arts Instruction in Nigeria Universities

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Abstract

The podcast is an e-learning technology which came into existence as result of digital age, to dissimilates information but it has evolved to become as powerful media of instruction globally. Despite its usefulness and relevance to the educational context, the awareness and utilise in aiding learning have not been established. Therefore, the study examined the effectiveness of Podcast and Lecture strategies on the undergraduate students of fine arts. The study also looked into how moderating variables of gender and attitude have the influence on fine arts when Podcasts is used as an instructional strategy. Purposive Sampling Technique was employed to select two study centres of University of Ado Ekiti, Nigeria. 40 undergraduate from two intact classes to Podcasts and lecture instructional group. Podcast and Fine Arts Achievement Test (FAAT) were used as treatment while t-test statistics were used for data analysis. Findings indicated that undergraduate students taught fine arts using podcast performed better and students exposed to Podcasts learning strategy had a positive attitude to fine arts. However, students' gender had no influence on their performance. Based on the findings, it was recommended that fine arts lecturers should be encouraged to use Podcasts to improve students' cognitive and affective earning outcomes of fine arts.

Keywords: computer, internet, e-learning, podcast, technology.

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Introduction

The evolution of computer age has brought multimedia instructional media to a notable arena by the educationist. Technology is now utilized and shared wholly in the virtual environment for learning (Chakraborty & Nafukho, 2015). Presently, it is now easier to access and surf the content on the Internet without reference to the underlying hosting infrastructure (Al.Zoube, 2009).However, technology has also brought relevance and positive expansion to University curriculum (Selwyn, 2007).

Technologies has brought acceptable tools for individual in private and public to be technological literate, which are being employed successfully in all disciplines. Miah & Omar (2012) explained that computing and digital age promotes technology to the ushers door step in different forms. Thus, technology is the groundwork on which learners' academic are built. According to Bugge and Wikan (2016) technology brings flexibility and opportunity to instruction, it also makes the teaching interesting, promotes knowledge acquisition through different methods of relations and delivery of mutual messages between the instructors and the learners. The fast attribute associate with technology has brought about success to university education, this resulting in a new modification of educational system of the theoretical ideology to purposive practical oriented learning scheme. Hoic, Bozic, Mornar and Botticki (2009) submitted that computing based improve learners cognitive.

Moreover, this influences prosperous individual e-learning via technological tools. Olabemiwo (2013) explained that Internet asWorld Wide Web and computer networks systems with high speed connections for hours and location which assist the learning on the Internet through the different media for Podcasting. The concept of podcast is quite in existence for a while, but its terminology was not firmly established until it was first introduced in 2004 (Copley, 2007). Podcast is the combination of words from the 'iPod' and 'broadcast' (Sutton-Brady, 2009). Podcasts is a technological transformation of e-learning, based on web ideology. It compresses files into either audio or audiovisual devices and shares through set of connections(Harman, Cebeci, & Tekdal, 2006; Buffington, 2010). The study by Lazzari (2009) confirmed podcasts as an online digital tutoring of web-based broadcasting medium which is utilized to share out digital audio content to diverse mobile devices, which are in turn playedon portable and moveable players' such as iPods, mp3, and personal computers.

Podcast possesses the attribute of capturing an audio event like song, speech, mix of sounds and then posts as digital sound to Web or "blog" (McGarr, 2009; Young, 2007; Lewin, 2009).To sum up the real meaning, podcast is a new phenomenon that arrests and tailors learner for positive acquisition of knowledge through online collection and moveable technology devices (Edirisingha, Rizzi, Nie & Rothwell, 2007; Willingham, 2009).

As e-learning, it compliments and enhances internet based learning, its frequent application of mobile players that allows constant playing of lessons content acquired and shared from the Web. Podcast is a supplementary medium for all round learner and a substitute for e-learning and an educational device for the attainment of educational goal (Kidd, 2012). Podcasts by its desirable quality integrates Web based to mobile and e-learning models, through mobile technology devices and portable audio recorders, mp3 means of players and analogue devices (Martinez, 2002; Norman, 2004). A medium of generating educational materials on the Web at any location and any moment (Lee, McLoughlin & Chan, 2007; Dale & Povey, 2009).

Empirical evidences on usefulness of Podcast for learning are being looked into. However, studies have established Podcast as being relatively important in learning of languages, humanities and sciences. The ease of usage and its perceived usefulness in handling other related disciplines on the curriculum has been established (Tohill, 2008; Hill, Nelson, France & Woodland, 2012). Studies have confirmed the relevance of Podcast on learning. For example, Qiang and Klein (2016) researched Podcasts for learning of language styles, confidence and proficiency of Chinese, the result of the finding sexposed podcasts as a positive e-learning for improving college students speaking. Lonnand Teasley (2009) studied the podcasting in language learning; the outcome indicated that students hope were raised and intention to learn proved adequate in reference to Podcast value usage. Marefat and Hassan zadeh (2016) examined video Podcasts application on second speech learning. The findings proved that podcast promotes second speech learning easily and positive. Khanghah and Halili (2015) worked on podcast as a new technological tools for instruction the paper further overviewed the report of different studies on podcast in learning. The authors reviewed the challenges and difficulties on science of vocabulary in Iran primary school students.

According to the study of Farshi and Mohammadi (2013) on e-learning and podcasting for students attitudes and motivations on English language, findings proved that students had positive attitude and that

podcast motivates learning greatly. Hasan and Hoon (2013) researched on pedagogy of e-learning of podcast in language learning. The findings established that podcasts greatly supports language learning specifically, grammar, pronunciation and vocabulary. Kay (2012) examined video podcasts in educational exercise, the finding proved positive in the effectiveness of the attitude of students toward video podcasts and that learning is effective with video Podcast. Tam (2012) studied e-learning of podcast for lexis in English instruction, the findings revealed that learners had higher motivation in continue studying English text and vocabulary.

In the study of Bannon, Lubke, Beard, Britt (2011) on the academic influence of under graduatepre-service teachers on Podcast, the results made it known clearly that no significant difference is in the pre-service teachers academics on Podcast and lecture instruction. Also, Beylefeld, Hugo and Geyer (2008)worked on podcast as e- learning in the University setting. The study exposed Podcast as a powerful University instructional tool, that promotes active academic experience in learning. In essence, Toth (2011) Gnaur and Huttel, (2016) concluded that Podcast has been tested, accepted and provedas generally as very useful and effective instructional medium in the universities. Çölkesen and Bedir (2016) argued that the efficacy of podcasts in the teaching of foreign language is not positive and educational podcasts is not effective in foreign language vocabulary.

Nevertheless, empirical studies on worth of Podcast remained controversial among researchers. For example, Lenhart (2010) reported that the values of podcasts are numerous; they are for sharing useful hints, information and instructions in music, video and images with social media and the internet, Lonn and Teasley (2009) submitted that podcast promotes digital and technology learning among the scholars. McCombs and Liu (2007) explained that podcast is useful in the periodical study strategy of revision, reflection, and clarification web based and e-learners. Also, Cebeci and Tekdal (2006) emphasized the tool of repute which brings together information, knowledge and useful hints anytime and anywhere for purposeful instruction. Thus, Podcasts is useful, helpful, and effective in content delivery. It is also imperative for interaction and a pedagogical task in higher institution (Edirisingha, Rizzi, Nie, Rothwell, 2007).

According to Heilesen (2010) podcasts have been positive in developed and utilised for attainment and achieving purposeful educational goal in higher institution of learning. It also promotes effective universities curriculum implementation. Edirisingha (2007)

explained that Podcast is often utilised for spreading information to the learners and faculty via social network site and a potential learning oriented programme of instruction (Lenhart, 2010). In essence, both the lecturers and the students gain for using podcasts for educational purposes.

The theoretical frame work was on the theory of McLoughlind and Lee (2008) whose studies has shown constructivist models of instructional dissimilation, which promotes learner in self direction and individually. Lim (2006) classified podcast within the cultural and historical content of the activity theory of the Engeström (2001) whose concept on the planning necessitates accomplished outcomes, while podcasting mediates the activity to be achieved. The extent to which podcasts enhances teaching of fine and applied arts in Nigeria University is still unknown. Despite the fact that most known work on podcast were done on languages skill and acquisition, this study attempts to fill this gap by identifying the Podcasts influence on learning of fine arts. It attempted also the influence of gender when employing podcasts as e-learning devices in Nigeria University. In essence, the study therefore, investigates undergraduate students exploring educational podcasts on fine and applied arts instruction in Nigeria Universities. The study further examined attitudinal influence of the male and female undergraduate students exploring educational e-learning technology of Podcasts on Fine Arts instruction in Nigeria Universities.

Research Questions

In this study, the following research questions were addressed:
i.   Which devices did you use for podcasts?
ii. Is there any difference in the performance of university students taught fine arts using Podcast?
iii. Is there any difference in the attitude of undergraduate students taught fine arts using Podcasts?

Research Hypotheses

The following null hypotheses were tested in the study
Ho_1 There is no significant difference in the performance of fine arts undergraduate students taught fine arts using podcast and those taught using lecture instruction.
Ho_2 There is no significant difference in the attitude of male and female undergraduate students taught fine arts using Podcasts.

Methodology

The podcasts' impact on students' learning was evaluated through qualitative and quantitative methods. The design of this study is a quasi-experiment consisting of the treatment group and a control group. Pre-tests were used to decide the equality of both groups. Purposive random sampling was used to select two universities study centres awarding the degree of Bachelor of Fine Arts in Education (BA. Edu. Hons.) in South-west, Nigeria. These universities were selected based on the following criteria: equivalence (fine arts studio, facilities and manpower), school ownership (state owned), gender composition (mixed), internet facilities (School Net Programme) and both are affiliated with a University. Secondly, intact classes in each of the two universities study centre were selected and randomly assigned to experimental (Podcasts) and Lectures groups using simple random sampling technique, and third, the researcher grouped the participants based on gender (male & female). Podcasts were developed by the researchers based on the course titled; History of Arts and the course code FNA 207 students' learning content as approved by National University Commission (2008).

The design and development of the podcast was done by the researcher utilizing the course content of Art History with the authorization of the Head of Department, the Internet facilities and available Art History Textbooks. The podcast was given to the Head of Department Fine and Applied Arts, Kwara State University Malete, Ilorin. Nigeria, a lecturer in the Department of Educational Technology, University of Ilorin who has background in Fine arts and a Computer science lecturer in the Department of Computer Science, University of Ilorin for both face and content validity. And also, validated by experienced Fine arts lecturers and Educational Technology experts and finally field tested on the sample of the same representative that is similar to the undergraduate students in another university equivalent the sample of the study at Obafemi Awolowo University, Ile Ife.

The podcasts contained a semester lectures topics. This study therefore, consisted of Part two 40 undergraduates, 200 levels of fine arts students which form the two groups, each group consisting of 20 undergraduate students in the control group and 20 undergraduate students in the treatment group. The treatment groups accessed the lecture content online, and downloaded it into their (podcasts learning devices), while the control group was team taught with lecture method by the researcher and the researcher assistance. Upon completion of instruction, on the last week of study in the semester post-tests were

conducted to determine the difference between the groups. The students were examined in a big hall supplied with the writing materials under the supervising of researchers assistance to answered the question given and marking guide were given to an experienced teacher to mark the learners work immediately..

The validated Fine Arts Achievement Test (PAT) was used in collecting the data. The FAAT consisted of 100 multiple choice objective items adopted from past examination of Joint Matriculation Board (JAMB). The Test (FAAT) was based on the contents of the course content of the study. Each of the stems of the FAT had five options (A-E) as possible answers to the question. Students were required to pick their correct answers by ticking one of the letters (A - E) that is correct option in each item. FAAT was first administered to both the experimental and control groups as a pre-test and again for the post-test after it had been rearranged.

The instrument for the study was a questionnaire adapted from the previous related studies of Chester, Buntine, Hammond, and Atkinson (2011). Items in the questionnaire were adapted based on their relevance to the students' Attitude towards podcasts and it was named Fine Arts Attitude Scale (FAS). This was used to measure the students' attitude towards fine arts before and after being exposed to podcasts. FAS contained two sections. Section A included four questions and it focused on demographic information of the students. Section B focused on students' attitude towards fine arts subject. The section contained 10 items, four point response mode of Strongly Agreed (coded 4), Agreed (coded 3), Disagreed (coded 2) and Strongly Disagree (coded 1) were used. Despite the validation and use of the instrument by the earlier researchers, it was revalidated to obtain useful suggestions, modifications and constructive criticisms. The face and content validity of the instrument were done by a Test and Measurement Lecturer, Educational Technology Lecturer and Computer Science Lecture in the University of Ilorin. Ilorin Nigeria. The final draft was made based on their comments and suggestions, to test the instrument's validity and reliability, the initial draft of 10-items of FAS was validated by experts. Also, it was administered on undergraduate fine arts students drawn from the sampled institution, Kwara State University, Malate Ilorin. The constructive criticisms obtained from this first administration was used to modify the final instrument. The final instrument of 10-item questionnaire was tested for reliability using Cronbach's alpha value of 0.79 statistics computed and was adequate for the study.

At the end of the treatments the data collected during the study were analyzed using t-test Analysis of Covariance (ANCOVA) using Statistical Package for Social sciences (IBM SPSS Statics) version 21 at 0.05 alpha level.

Results

Research Question 1

The students use the following devices for Podcast: mp3, Laptop. Computers, iPods and Cellphone

Testing of Hypothesis

The results are presented based on the research hypotheses:

Ho1   There is no significant difference in the performance of undergraduate students taught fine arts using podcast and those taught using lecture Instruction.

To determine whether there was significant difference in the post-test mean scores of the podcasts group and the lecture group, data were analyzed using the t-test statistics Table 1 contains the result of the analysis. The results are presented based on the research hypotheses:

Table 1

T-test Post test on Pod casts Group and Lecture Group.

Variables	N	Mean	Std. Deviation	*df*	*t*	Sig. (2.tailed)
Lecture	18	74.11	5.02	38	2.944	.381
Podcast	22	67.54	8.28			

Table 1 shows the main effect of treatment group (podcasts and lecture) on fine arts undergraduate students' performance produced an F = 2.944, p = 0.381) for the main effect (treatment) was significant, this indicates that the method of instruction produced a significant effect on the post test achievement scores.   Hence, Hypothesis one was rejected. Therefore, there was significant difference between students taught using podcasts and control.

The performance of students in the two groups were further compared using the mean gain scores between the pre test and post test

for each group, the results are shown in Table 2 and graphically illustrated in Figure 1.

Table 2

Mean Gain Scores of Students Taught fine arts using Podcasts and Lecture

Variables	Pre test	SD	Post test	SD	Main score	Gain
Podcast	49.60	8.59	74.40	5.82	24.80	
Lecture	53.45	5.55	66.60	66.60	1315	

Table 2 above show that all the groups had improved performance in post-test. For instance, Podcasts had highest mean gain scores of 24.80 while the (lecture) had the mean gain scores of 13.15.   This indicates that the two groups benefited from the treatment, with Podcast having better performance.
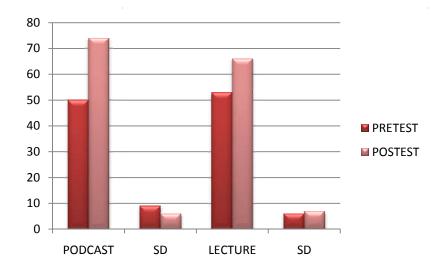

Figure 1: Pretest-Post test results

Ho$_2$ There is no significant difference in the attitude of undergraduate students taught fine arts using Podcasts

To determine whether there was significant difference in the post-test mean scores of the attitude of undergraduate students, data were

analyzed using the t-test statistics. Table 3 contains the result of the analysis. The results on this hypothesis are as shown in Table 3.

Table 3

The Attitude of Undergraduate Students Taught Fine Arts using Podcasts

Variables	N	Mean	Std. Deviation	*df*	*t*	Sig. (2.tailed)
Male	19	71.63	8.34	38	.884	.338
Female	21	69.47	7.06			

Table 3 indicates that the attitude of undergraduate students on (podcasts) on gender produced an F = .884, p = 0.338 which was not significant at 0.05 alpha level. This shows that there was no significant difference between the attitude of students post test means scores of the students. The students' attitudinal scores of male did not differ significantly from their female counterparts when both were taught using Podcast. Therefore, hypothesis two was not rejected. The mean gain scores between the pre test and post test for the male and female students were further compared as illustrated in Table 4 below.

Table 4

Mean Gain Scores of Male and Female Students in Podcasts and Lecture

Variables	*Pre- test*	SD	*Post test*	SD	Main Gain score
Female	52.60	7.08	71.50	8.14	18.90
Male	50.45	7.74	69.50	7.25	19.05

Table 4 shows that both the male and female students exposed to Podcast benefited from the treatment. The mean gain scores of male students were 19.05 while the mean gain scores of the female students were 18.90. The mean gain scores of female students were different from the mean gain scores of the male students by 0.15. This indicates that Podcast improves both male and female, with male students having better post test performance and mean gain scores than female students.

Discussion of Findings

The hypothesis one specified a significant difference of undergraduate students' performance in favour of those in the Podcast group. The result clearly stated the significant difference in the performances of students exposed to Podcast and lecture. The findings proved the better performances in favour of undergraduate students in the

Podcasts as compared to the lecture. This finding is in agreement with earlier findings of Crippen and Earl (2004) and Alpay and Gulati (2010) that reported the significant gains in the learners understanding when they are exposed to Podcasts. Furthermore, this finding supports outcome of the studies of Kurtz, Fenwick, and Ellsworth (2007) that confirmed great significant improvement of learners used podcasts for learning, and also Ho, Chou and O'Neill (2010) whose findings reported the performances of students which had significantly impact on learning with the podcast.

However, this finding disagrees with Lakhal, Hager and Pascot (2007) studies that established no significant difference between control and podcast group respectively. Moreover, the finding of this research also contradicted the conclusion of Copley (2007) who stated that students learn when using different learning materials and that students taught with Podcast are better. In essence, learning with podcasts enhances positive learning and performances of students.

The hypothesis two indicated the significant difference in the attitude of students taught fine arts using Podcast and lecture before the treatment and after. This finding supports the finding of Hill and Nelson (2011) who submitted that the student's attitudes are positive towards using Podcast for studies. The finding is also in agreement with the findings of Vajoczki, Watt, Marquis, and Holshausen (2010) that explained the increasein the students learning performance when exposed to Podcasts. And also, the findings of Evans (2008) who explained that undergraduate students access to learning hints and facts are of great significant importance. Also, the study conformed with the conclusion of Campbell (2005) who suggested the undergraduate students often working with rich media that has a positive effect on student attitudinal performance.

The finding is also in support of the finding of Chi, and Chan, (2011) whose study explained the great significant impact on the respondents which implies that the respondents attitudes to podcasting have a bearing on the users' attitude and intent. The finding is in favour of Kay and Kletskin (2012) that suggested video podcasts as having a higher supremacy on students attitudes, behaviour, and learning performance. The finding disagrees with the Ducate, and Lomicka, (2009) study that confirmed no significant improvement in pronunciation attitudinal practice in English language using podcast. In essence the attitude of the undergraduate students toward the technology is higher, therefore fine arts lecturers should utilize the situation to bring out needed knowledge in the students through Podcast.

Conclusion

This research of podcast established great achievement in the students' employing deep involvement and meaningful learning through Podcasting technology, thus learning with Podcast is positive and students gained and having deeper and more insight into arts because of the podcasts. With these findings majority of university students using podcasts are rated higher than their counterparts. Moreover, using podcasts successfully for instruction, promotes easy and usefulness to learn and has great significant gain. In conclusion, podcasts can be associate technology of e-learning, that create learning resources, appeal to learners and eventually stimulates learning.

Recommendations

Based on the findings of the study, it was recommended that universities administrators should provide materials encourage the production and use of podcast these can be observed through workshops and seminars. Fine and Applied Arts lecturers should be encouraged to utilize podcast for learning to widen their horizon in learning technologies.

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