PRE-SERVICE TEACHERS' PREFERENCE BETWEEN PODCAST AND VODCAST FOR TEACHING/LEARNING EDUCATIONAL TECHNOLOGY IN FEDERAL UNIVERSITY DUTSIN-MA, KATSINA STATE, NIGERIA

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Abstract

This study examined the pre-service teachers' preference between podcast and vodcast for teaching/learning Educational Technology in Federal University Dutsin-Ma, Katsina State, Nigeria. Descriptive research design was adopted in this study. The target population for this study was all the pre-service teachers that registered for Educational Technology course in the year 2022 at Long Vacation Training Programme (LVT) in Federal University Dutsin-Ma, Katsina State. A total of eighty-five (85) pre-service teachers were used in this study and this sample was selected using purposive sampling technique. The instrument used for this study was a researchers' designed questionnaire. The instrument was pilot-tested using 20 students who do not take part in the main study and the reliability co-efficient of the data collected were computed using test re-test method and the value obtained was 0.78 which shows that reliability co-efficient value was good for the study. The data collected after its administration was sorted and analyzed using descriptive statistics of frequency count, percentages, mean, standard deviation to answer research questions while t-test was used to test the research hypotheses postulated for this study. The decision is taken at 2.50. Mean above this 2.50 is accepted while mean below 2.50 is rejected. The findings of the study revealed that pre-service teachers at the long vacation training programme in Federal University Dutsin-Ma, Katsina State preferred both podcast and vodcast for learning and interaction between teachers and students and between students and students. Also, the finding equally showed that the pre-service teachers agreed that the use of podcast and vodcast will positively help in ensuring meaningful learning and interaction between teachers and students and between students and students. It was also established that there is no significant difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender. Based on these findings, it was recommended that the Ministry of Education should encourage the use and production of podcast and vodcast for teaching/learning activities in the school.

Introduction

The pre-service teachers that registered for Educational Technology Course have been taught practically on how to produce digital file in addition to other low-cost teaching aids that can be used to support or enhance teaching/learning activities. This is important at this stage where the learners are digital native. The present-day learners are comfortable in the digital age, because they grew up using technology. This is because they were born and raised in a digital and media-saturated world. Digital native learners process information quickly, enjoy multi-tasking and gaming. They are children raised with the computer who are capable of thinking differently and as well develop hypertext minds. Therefore, there is need for teacher educators to prepare teachers who will be in-charge of teaching/learning activities tomorrow to acquire skills that will create better generation expectations (Prensky, 2001)

The benefits attached to information and communication technology and the coming of web 2.0 should be seriously maximized in the field of education as it has been adopted in the other sectors. This is very crucial in order for teachers to be able to cope with the current future generation leaders in the school now. Some of the uniqueness that web 2.0 brought to every field is ability to create content and share content which is not possible or difficult to do in web 1.0. Some of the digital file platforms learners can have access to in this era are 'podcast' and 'Vodcast' among others.

Podcasts as reported by Abulencia, (2006); Frydenberg, (2006); Richardson, (2006) and Kaplan-Leiserson, (2005) are digital media files (audio and video) that can be downloaded by learners via RSS (Really Simple Syndication) or other social media platforms. A podcast is a digital packet of audio which is generally part of a series, released at regular intervals and automatically downloaded to personal media devices when made available through Really Simple Syndication (RSS) feeds (Bonini, 2015)

A podcasting is a method for distributing any digital media file (podcast), or series of files, over the Internet for playback on portable media players, such as iPods, and personal computers (Lazzari, 2009). Podcasting stands for Portable on demand Broadcasting. Podcast is an audio or visual content that is automatically delivered over a network via free subscription. Podcasts can be regularly distributed over the internet and other social platforms and this kind of podcast contains multimedia information, such as slides, pictures, images, photographs, short videos, and chapters that help users to increase their perception about the topic (Fernandez, Simo, and Sallan, 2009).

Fernandez, Simo and Sallan (2009) emphasize that there are three different types of podcasts:

1. A basic podcast contains only audio content and is the easiest to create and listen to

2. An enhanced podcast has both audio and video slides.

3. A vodcast (or video podcast) podcast which contains the both video and audio files.

Any of the three types mentioned above can be used in the teaching/learning activities in the school. That is to say that pod-casting can offer an innovative way to support learning. Podcast can be used to provide introductory material before lectures, or, more commonly, to record lectures and

allow students to listen to the lectures again, either because they were unable to attend, or to reinforce their learning. Moreover, podcast can be presentations of learning material by lecturers.

At a most basic level, pod-casting can be used as a substitute to the traditional lecture where students can access an entire recording of the lecture. Pod-casting can also be used to provide supplementary material to assist learning. Supplementary material can be in two very different forms. The first, and most common form, is their use in providing summaries or syntheses of course material. It can as well be used to provide revision and summary material inform of supplementary material which can be in the form of additional material to broaden or deepen the student's understanding of a concept. Oliver (2009) opined that creating podcast allows students to develop skills such as researching, writing, speaking effectively, solving problems, managing time, grabbing attention and improving their vocabulary.

A key benefit of podcasting is that, it enables students to listen to course related material while they are engaged in other activities. In the past a highly motivated student might have used such time for revision of their lecture notes, or reading literature references, but the use of digital media players provides a level of portability and ease of file transfer that has not previously been feasible. The most common application of podcasting in face-to-face education is to capture lectures and make them available online for students. The benefits of such podcasts are well-documented and broadly recognized (Abdous, 2012; Heilesen, 2010 and Jowitt, 2008). Students use these podcasts for the purpose of reviewing concepts and issues presented during lectures. There is clear consensus in literature that podcasting is extremely effective as a revision tool. Evans (2008) found that students perceive podcasting as a more effective revision tool than textbooks, and consider it to be more efficient than their own notes. According to the students, this use of podcasts has several benefits compared to the face-to-face lecture, among them is the ability to repeatedly access the same content and the ability to listen whenever and wherever they like (Jowitt, 2009). Another finding is that students see such podcasts as additional resources rather than as a substitute for lectures and written course materials (Abdous, 2012). Podcasts in the form of recorded lectures can also be used in distance education as the synchronous virtual classes for many courses. These sessions are recorded and made available for all students who enrolled in the course. Students who attended the virtual class can (re)view them, but also students who did not attend the class can have the instructional content downloaded for their personal use.

Instructors have used podcasting in two forms: repetitive, i.e., recording lectures, including lecture slides and demonstrations and supplemental, i.e., providing material like interviews with external resources (Hürst & Waizenegger, 2006 &Norman, 2004). In spite of podcasting's fairly recent emergence as a viable tool, instructors are creating an extremely wide variety of objectives and uses for these two podcasting forms, including enrichment of distance learning, facilitation of self-paced learning, remediation for slower learners, enrichment for advanced and/or highly motivated learners, assistance for students with reading and/or other disabilities, auditory support for multi-lingual education, and collaboration among transnational students (Fernandez, Simo, and Sallan 2009; Oliver, 2005 and Sloan, 2004).

The rise of educational podcasting, like the explosion of podcasting in general, is easily understood given both the portability and popularity of digital media devices. The ability to download podcasts immediately

and permanently gives students unhindered access to the material they need (Gay, 2006). This widespread adoption of digital media devices provides compelling evidence of podcasting's enormous potential as an effective educational tool among post-secondary students (Hargis and Wilson, 2005). Thus, educators who implement podcasting are capitalizing on the portability and popularity of digital media devices to meet students ''where they 'live' – on the Internet and audio players" (Educause Learning Initiative, 2006).

Advocates of podcasting have suggested, and researchers are beginning to find that this technology can improve student learning outcomes. For example, Oliver (2005) indicated that podcasting can improve student learning by increasing student motivation and engagement. Empirically, McKinney, Dyck, and Luber (2009) found that students watching a lecture podcast significantly outperformed their counterparts in the control group.

Mayer's (2001) cognitive theory of multimedia learning may support these researchers' conclusion and provide overall explanation for the educational interest, as well as advocates' beliefs in podcasting technology. According to this theory, an individual's information processing system includes separate cognitive channels to process visual/pictorial and auditory/verbal stimuli; in this respect, learning is obtained by integrating information between such channels (Mayer, 2001).

Similar to most information processing models, this theory suggests that learners have a limited capacity in the amount of stimuli they can process at any given time in these channels. For example, empirical research has found that if a large amount of visual and verbal stimuli are presented simultaneously, a learner experiences a cognitive overload and fails to reach an optimal understanding of the content.

Podcasting, however, could provide a solution to this limitation. With podcasting's ability to provide opportunities to the learner to repeatedly access content and directly control the speed and pace of the verbal and visual stimuli being offered, students can adequately process content before subsequent information is presented and lost, and thereby, decrease cognitive overload. In addition, the cognitive theory of multimedia learning can also explain how podcasts may serve as a better study aid than other learning resources. Findings from several empirical studies indicate that students learn better when corresponding words and pictures are presented simultaneously rather than successively and from animation and narration than from animation and on-screen text (Mayer, 2001, Moreno, 2006; Moreno and Mayer, 1999). Podcasts have the capability to simultaneously present audio stimuli (e.g., narration) with visual content simultaneously. Therefore, based on this theory and supporting evidence, podcasting should improve student learning over other learning resources, such as textbooks, notes taken from class lectures, or even PowerPoint slides.

For pod-casting to be effective in student learning it is important that a number of strategies are considered as reported by Fernandez, Simo, and Sallan, (2009):

4. It is important to engage the listener with the material included as part of the podcast. The speech needs to incorporate examples and subjects of interest to the listener.
5. A good podcast has a clear structure with an introduction outlining the content, the presenters and the aims followed by the main section. The conclusion should highlight the key points and introduce the main aim of the next podcast in the series.
6. The beginning of the podcast should be longer but less in-depth. The pod-

casts took a standard format: firstly, introducing the topic and content of the material on the podcast; secondly, briefly explaining the significance of understanding the particular subject matter; thirdly, moving onto the more complex theoretical material; and finally summarizing the key issues.

7. The use of visuals embedded within the podcast also enables the recipients to further understand the subject matter.

8. The use of 'thinking pauses' in the podcast where the tutor asks the student to stop and think about a particular point, enables students to reflect on the subject matter being broadcast

9. The use of questions placed at the end of the podcast, which students can answer in preparation for the next taught session, also acts as a means of developing reflective and critical thinking skills

10. Teachers have to determine their educational aim and purpose for each podcast they create

11. It's better if teachers produce their pod-casts in a personal and informal way

12. Teachers have to explain their contents through interviews, dialogues or monologues. A talk/radio monologue, requires variety in the pitch and inclination of the speaker. The listener should get the sense that they are being spoken to directly. The dialogue format can involve two or more presenters in a discussion which offers the listener variety compared to the single speaker. The interview takes the form of question and answer and offers the opportunity to talk to an expert in your area of study or allow

students to question each other on a particular issue. With any of these formats it is helpful to have an outline script to guide the participants, which may avoid large amounts of editing at the end.

Podcasts are widely seen as positive learning tools that can have the tangible benefit of bringing teachers and learners together, often across long distances. Rather than being framed as tools for enhancing student grades, then, podcasts are widely seen as a means for engaging students in ways that might motivate them in learning content and increasing rapport between teacher and students (Edirisingha, Hawkridge and Fothergill, 2012; Carle, Jaffe and Miller, 2009; Fernandez, Simo and Sullan, 2009). The importance attached to this technology shows that it is an avenue that educators should appreciate and integrate for teaching/learning activities in and outside the school and that is why it is necessary to establish whether the pre- service teachers in education prefer its usage for teaching/learning activities and make it available for the public consumption.

Purpose of the Study

The main purpose of this study is to examine the pre-service teachers' preference between podcast and vodcast for teaching /learning Educational Technology in Federal University Dutsin-Ma, Katsina State. Specifically, the study examined the:

5. Pre-service teachers' preference between podcast and vodcast for teaching/learning activities

6. Impact of podcast and vodcast on learning and interaction between teachers and students and between students and students.

7. Difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender.

Research Questions
The following questions are used to guide the conduct of this study:

13. What is the learning mode preferred by pre-service teachers between podcast and vodcast for teaching/learning activities?
14. What is the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students?
15. Is there any difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender?

Research Hypothesis
This hypothesis is tested at 0.05 significance level:

Ho1: There is no significant difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender.

Methodology
This study adopted a descriptive survey research. The target population was all the pre-service teachers contact four (4) at the Long Vacation Training Programme (LVT) in Federal University Dutsin-Ma, Katsina State. Purposive sampling technique was used to select all pre-service teachers who are in contact four who registered for Educational Technology Course. Purposive sampling is used because these students have been taught using podcast and vodcast and they have been taught how to produce their own personal podcast and vodcast to be able to meet the need of currents and future learners. A total sample of eighty-eight (85) respondents were used for this study including males (52) and females (23). The instrument used for this study was a researcher designed questionnaire on pre-service teachers' preference and the impact of podcast and vodcast. The face and content validations of the instrument was done by two lecturers at the Federal University Dutsin-Ma, Katsina State, Nigeria. The instrument used has 4 – points Likert scale format distributed as Strongly Agree (SA) 4 points, Agree (A) 3 points, Disagree (D) 2 points and Strongly Disagree (SD) 1 point. The instrument was pilot-tested using 20 students who do not take part in the main study and the reliability co-efficient of the data collected were computed using test re-test method and the value obtained was 0.78 which shows that reliability co-efficient value was good for the study. The data collected after its administration was sorted and analyzed using descriptive statistics of frequency count, percentages, mean, standard deviation, and t-test statistical analysis to answer and test both the research questions and hypotheses raised in this study. The decision is taken at 2.50. Mean above this 2.50 is accepted while mean below 2.50 is rejected.

Results
Research Question One
What is the learning mode preferred by pre-service teachers between podcast and vodcast for teaching/learning activities?

Table 1: Analysis and results on learning mode preferred by pre-service teachers between podcast and vodcast

Statement	Mean	Std	Decision
Podcast audio only is the most preferred mode for teaching/learning activities among pre-service teachers of long training programme in Federal University Dutsin-Ma, Katsina State	3.331	0.9112	Agree
Vodcast is the most preferred mode for teaching/learning activities among pre-service teachers of long training programme in Federal University Dutsin-Ma, Katsina State	3.146	0.9088	Agree

The result in the Table 1 above revealed that the pre-service teachers preferred both podcast audio and vodcast modes of learning with mean 3.331 and 3.146. The two means are above 2.5 cut marks.

Research Question Two

What is the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students?

Table 2: Mean rating of the pre-service teachers on impact of podcast and vodcast on learning and interaction between teachers and students and between students and students

Items	X	Std	Decision
Podcast and vodcast are good in meeting a range of learning objectives.	3.269	0.7659	Accepted
Podcast and vodcast are good substitute for face-to-face lectures with students	3.146	0.9088	Accepted
Podcast and vodcast are good for engaging students in meaningful tutorials before and after the lessons	3.331	0.6975	Accepted
Podcast and vodcast are good in providing glossaries of key terms in concepts discussed with students	3.346	0.6669	Accepted
Podcast and vodcast are good for feedback mechanism as well as for evaluation platform	3.531	0.6116	Accepted
Podcast and vodcast make learning easier and help students to have better results	3.377	0.6497	Accepted
Pre-service teachers are satisfied using Podcast and vodcast for learning and meaningful interaction with teachers and students.	3.346	0.7282	Accepted

Podcast and vodcast assist students to more deeply engage with learning content.	3.346	0.0.7122	Accepted
With Podcast and vodcast students can listen to lectures while doing other tasks such driving, exercising, or walking between classes.	3.377	0.7397	Accepted
With Podcast and vodcast students have ability to listen to a lecture multiple time. Students can also stop the lecture, "rewind" to a previous part, and start again.	3.531	0.6607	Accepted
Podcast and vodcast provide a mechanism that motivates students to actively engage in the course content.	3.562	0.4636	Accepted
Grand Mean=	**3.3836**		

The results in Table 2 revealed that the grand means of respondents are higher than the decision mean of 2.5 (that is 3.3836 > 2.50), which indicated that the pre-service teachers at long vacation training programmme (LVT) in the Federal University Dutsin-Ma agreed that using podcast and vodcast will produce positive learning outcome and ensure meaningful interaction between students and teachers and between students and students.

Research Question Three
Is there any difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender?

Hypothesis One
Ho1: There is no significant difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender.

Table 2: t-test analysis of the difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender

Group	N	X	Std	df	t	Sig. (2-tailed)	Decision
Male	52	37.048	2.7426				
				63	0.838	0.405	Accepted
Female	23	37.717	3.6301				

The result of independent t-test in the above table indicated that, there is no significant difference in the mean rating regarding the difference on impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender. This is because t (63) = 0.838; sig (2-tailed) = 0.405 and p > 0.05. The hypothesis one is hereby accepted.

Discussion
The finding of this study indicated that pre-service teachers at the long vacation training in Federal University Dutsin-Ma, Katsina State preferred both podcast and vodcast for learning and interaction between teachers and students and between students and students. The result is contrary with the finding of Omiola and Ojeleye (2019) where the respondents preferred m-learning more than the e-learning and d-learning.

The finding equally showed that the pre-service teachers agreed that the use of

podcast and vodcast will positively help in ensuring meaningful learning and interaction between teachers and students and between students and students. This finding supported the finding of Thomas (2019) on the impact of podcast in education where the respondents confirmed that podcasts can no longer be ignored by anyone in this digital age for its usefulness in making learning easier and making interaction between teachers and students very easy.

The finding of this study revealed that there is no significant difference in the impact of podcast and vodcast on learning and interaction between teachers and students and between students and students based on gender. This is in support of the finding of Bello (2020) on the impact of e-learning on academic performance of upper basic science and technology in Kaduna State, Nigeria where both male and female interest to learning using e-learning platform are the same.

Conclusion

Based on the findings of this study, it can be concluded that using podcast and vodcast in the teaching/learning Educational Technology will have positive impact on pre-service teachers' learning and interaction between teacher and students and between students and students.

Recommendations

The following recommendations are given based on the findings of this study:

v. Ministry of Education should encourage the use and production of podcast and vodcast for teaching/learning activities in the school.

vi. School authority should make provision for enough funds for the development of podcast and vodcast in the school to ensure meaningful interaction between teachers and students and between students and students in schools.

vii. Training and re-training on how to develop and use podcast and vodcast for teaching and learning activities should be encouraged in the school.

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