

## **PODCAST VERSUS VODCAST AND STUDENTS' ACADEMIC ACHIEVEMENT IN INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) A RESEARCH COURSE**

**Williams Cheta and Augustine Sandra Eberechukwu**

Department of Curriculum Studies and Educational Technology, Faculty of Education,  
University of Port Harcourt

---

**ABSTRACT:** *This comparative study has compared the impact of two innovative pedagogical strategies, vodcast and podcast on academic achievement of undergraduate students taking ICT-in-Research, a course in Faculty of Education, University of Port-Harcourt. Ninety eight (98) of these undergraduates were randomly drawn from the Department of Curriculum Studies and Educational Technology for the 2015/2016 academic session. Fifty two (52) and forty six (46) undergraduate students formed the podcast and vodcast categories respectively. The instrument was a post 20-item test with a reliability coefficient of 0.60, which was administered to the two categories. T-test statistics was the analytical tool used in testing the two hypotheses of the study. From the study, it was revealed that students taught using podcast had higher academic achievements than those taught using vodcast. Hence, the recommendation that educators in Faculty of Education, University of Port-Harcourt should mostly adopt podcasting strategy to support their students' knowledge construction process.*

**KEYWORDS:** Podcast, Vodcast, ICT, Education, Disruptive Innovation, And Pedagogical Strategies.

---

### **INTRODUCTION**

In every century, educators are continuously looking out for suitable means and media to effectively communicate with students in engaging and meaningful ways. This is due to technological advancements which render tools and knowledge obsolete and less suitable for the needs and aspirations of any current society. The technological diversity in this 21<sup>st</sup> century has therefore made this search for pedagogical tools even more confusing and demanding as there are numerous digital media that could be adopted into instructional processes to enhance instructional practices and delivery; thereby, leaving instructors with the capability of making right choices of which and when to adopt a particular medium or combination of media. It has been observed that today's students are more technologically savvy than their older generations and therefore tend to use different, sophisticated and portable digital media especially for listening to music, watching movies, play games and communicating with friends even while on the move. Therefore, educators' ability to choose the right technology/technologies for instructional purposes becomes necessary to meet up with the diverse learning needs of today's learners' for their improved academic outcome and performance in the larger society. These technologies provide opportunities for educators to create several new strategies and ways of reaching students irrespective of their location. Among several recent technologies that can assist instructors in the conveyance of instructional content to learners are podcasts and vodcasts.

Podcast is got from two words “iPod” and “Broadcast” (International Podcast Day, 2017, & Indiana University Knowledge Base, 2016). The POD in Podcast is an acronym for Portable On Demand, while cast originate from the word broadcast (Business Dictionary, 2017). Podcasts are online audio or video files that are usually developed episodically and downloadable to users’ personal computers, media player (MP3) or mobile devices through web syndication after some forms of subscriptions has been made by the user (Merriam-webster.com, 2012). There are basically two types of podcasts, audio podcast (simply referred as podcast) with solely audio content and video podcast (also called vodcast or vidcasts) which contains both audio and motion pictures as video clips. Schnackenberg, Vega and Warner (2009) remarked that vodcast and podcast have similar functions, just that users download both video and audio files in vodcast as against downloading only audio files in podcast. Podcast or vodcast can be seen as web radio/music or web television/video broadcast that can be listened to or watched via smart/android phones, portable media player or computer, usually on users’ demand, interest and time. International Podcast Day (2017: para. 3) refers to podcasts as “Internet Radio On-Demand”. For people to be able to use and download podcasts, the International Podcast Day explained that;

Listeners can easily “subscribe” to podcasts (most are free) by clicking on its (*Really Simple Syndication*) RSS icon or subscription button. The listener is then walked through how to add that podcast’s syndication “feed” to a podcatching application of their choosing. So, when a podcaster releases a new episode, subscribers are automatically notified without having to constantly check back with the podcast’s website to see if a new show has been produced. And, with the podcatching software, episodes of their favorite podcasts can be automatically downloaded, (International Podcast Day, para 7).

Thus, some podcasts and vodcasts are offered without cost to users while others require subscription from users, depending on the producer’s demand and purpose. Podcatching software, available in all podcast enabled devices, has the ability to read through syndication feeds, thereby enhancing automatic downloads of new and updated podcasts into users’ devices for offline use, whenever such have been distributed online by podcasters. This therefore reduces users’ effort of constantly browsing through podcast website, checking for newer files. Vodcasts and Podcasts can be recorded by anybody (vodcasters and podcasters, respectively) using camcorder (or with phone camera) and simple audio equipments; and shared online to the world for people to use whenever and wherever they choose to. Podcasting and vodcasting are the disruptive innovations of traditional audio and video media. Their online repository nature with unlimited access to content, anywhere and anytime, gave them huge advantage over radio and television broadcast, CD/DVD recordings, and even the traditional classroom meetings and face-to-face lecture delivery. Podcast websites also create opportunity for users to share their common interest by commenting and discussing on listened episodes (International Podcast Day, 2017).

Learning Times (2014) remarked that organizations’ pattern of communication with their clients, employees and constituents are constantly being revolutionized through podcasting. Educators can then leverage the inherent opportunity in podcasting and vodcasting to record their lecture on different topics as podcast or vodcast and distribute such online for their students to study at their convenience and pace, irrespective of their locations. Students can then subscribe to have access, download or have the learning content automatically pushed into their devices when connected to the Internet. This supports the connectivism theory as put forth

by George Siemens and Stephen Downes in 2005. According on the tenets of this theory, Internet provides a global information bank where people can connect in order to access, acquire and share knowledge without restrictions. Also, from constructivism theory (propounded by Vygotsky and Piaget, among others) perspective, being actively engaged in listening to podcasts or watching vodcasts on a given content/topic can significantly increase students' learning experiences which invariably can help them in new knowledge construction, and through constant repetitions can enhance mastery of learning materials. Podcasting and vodcasting are also ways of flipping class activities for students such that lecture materials are converted to podcasts/vodcasts for students' home study before coming to class for discussion and assignments. Vodcasts and Podcasts serve as two separate pedagogical strategies in teaching/learning process. While podcast contained recorded audio lesson that students can listen to, vodcasts contained videoed lessons with instructors' demonstrations, voice and other visual elements that can boost learners' understanding of a particular lesson. Thus, podcasts and vodcasts application into instructional practices can have some similar or differing impact in academic performance of learners.

Some studies have been carried out on the use of podcast and vodcast for instructional purposes. For instance,. Mashhadi, Hayati and Jalilifar (2016) experiment to compare podcasts with conventional and self-study strategies in blended model of English Vocabulary teaching/learning unveiled that the podcast-supplemented approach was most successful than the others in the Vocabulary development. Guettaftemam (2016) examined podcasts effect on students' pronunciation development at Biskra, Mohamed kheider University, using an intact class that was shared into control (without podcast treatment) and experimental groups (with podcast treatment); the result showed that the podcast group had better pronunciation than the control group. Rae and McCarthy (2017) investigated vodcasts effectiveness as year one (2013-2014 group) Graduate Entry to Medicine (GEM 1) students' facilitation tool for understanding Physiology, as against the GEM 1 class for 2012-2013 session; and observed that the grades achieved by 2013-2014 GEM 1 students were significantly higher than the class of previous session. Additionally, Pena (2011) conducted a study in A&M University Kingsville, Texas, on vodcasts, screencasts and podcasts impact on the achievement of science student Scores. It was revealed through their finding that students who studied using vodcasts, screencasts and podcasts had higher scores than those who did not. Also, Gam and Bari (2017) conducted a study to discover if instructional screencast affects educational technology undergraduates of National Open University academic achievement and found that mean score achievement of students exposed to screencast did not significantly differ based on gender. Lowman (2014) studied on iPod accessed vodcasts and podcasts' impact on vocabulary acquisition by fourth- and sixth-grade students and found that more words were significantly learned by vodcast group than their podcast counterpart. Walker, Cotner and Beermann (2009) investigated the effect of using Vodcasts and Captures (combinations of class digital projector's output and an instructor's recorded voice) in Introductory Biology to improve students' learning; and found that students taught with custom vodcasts performed higher as compared to those taught with class captures. Zelin and Baird (2012) examined the attitude of students towards using vodcasts and podcasts during studying accounting courses and observed that students were interested using vodcast and podcasts, and have preference to them over live speeches and written communication.

Majority of the above studies used either vodcast, podcast, screencasts or their combinations in comparison with other conventional instructional strategies in the examination of students' learning outcomes. Just few compared vodcast and podcast impact on students' academic

achievement using students from the developed countries. None has focused on undergraduate students in University of Port Harcourt, to the researchers' best of knowledge. Based on these backdrop, this study therefore compared the implication vodcast and podcast have on students' academic performance when used as instructional tools in undergraduate course (ICT in Research) in Faculty of Education, University of Port-Harcourt.

### **Statement of Problem**

Podcast and vodcast have recently become popular 21st century instructional tools available for educators in the classroom. Most developed countries educators attest to their significant effects in students' academic achievement. Though, these technologies have disruptively transformed classroom face-to-face lecture delivery method to portable on-demand multimedia files, however, their impacts in the improvement of academic performance of undergraduates in Faculty of Education, University of Port-Harcourt have not yet been proven. The concern of this study thus state; do vodcast and podcast have similar or differing implications on undergraduate students of Faculty of Education, University of Port-Harcourt academic achievements? Also, do these academic achievements differ as a result of the students' gender? These, formed the core idea of this empirical work.

### **Aim and Objectives**

This research mainly aimed at comparing the impact of lecture vodcast and lecture podcast on academic achievement of students who offer ICT in Research, a Course in Faculty of Education, University of Port-Harcourt.

In specific terms, it sought to;

1. Determine if there is difference in the mean ( $\bar{x}$ ) values of students taught with podcast and their vodcast counterparts.
2. Find out if there is difference in the mean ( $\bar{x}$ ) values of female students and their male counterparts taught with either or both podcast and vodcast.

### **Null hypotheses**

**Ho1:** There is no significant difference in the mean ( $\bar{x}$ ) values of students taught with via podcast and their vodcast counterparts at 0.05 alpha level.

**Ho2:** There is no significant difference in the mean ( $\bar{x}$ ) values of female students and their male counterparts exposed to either or both strategies at 0.05 alpha level.

## **METHODOLOGY**

**Design:** The empirical study is a comparative design as the aim was basically to compare the mean values of two innovative learning strategies.

**Population:** The population consists of undergraduates of Faculty of Education, University of Port-Harcourt.

**Sample:** The sample size (N) consists of ninety eight (98) undergraduates of the 2015/2016 academic session randomly drawn from the Department of Curriculum Studies and Educational

Technology, who offered the course; ICT in research. The demographic information of the sample size is as follow:

**Table 1: Demographic data**

Category	N	Gender
Podcast	52	50 (female)
Vodcast	46	48 (male)
Total	98	98

**Instrumentation:** Two lesson plans based on podcast and vodcast principles were developed by the researchers. They were designated P<sub>d</sub>L and V<sub>d</sub>L for Podcast and Vodcast learning approaches, respectively. A uniform 20-item test developed by the researchers was administered to the two categories of learners. The instrument was validated by the researchers and trusted peers in test construction. A reliability coefficient of 0.60 was obtained through test-retest reliability measure. Both categories had the same lesson that lasted for one full month, only the approaches varied.

**Data Analysis:** t-test was used to test the two null hypotheses.

## RESULT

**Ho1:** There is no significant difference in the mean ( $\bar{x}$ ) values of students taught using podcast from those taught using vodcast.

N	$\sum(\bar{x}-x)^2$	$(\bar{x})$	SD	df	t-cal	$\alpha$ -level	t-tab
52	90	16	1.34	96	16.4	0.05	2.000
46	54	15	1.11				

Table 2: Standard deviation (SD) and mean values of both categories

t-cal. 16.4 > t-tab 2.000

Decision: Significant

Ho1: Rejected

**Ho2:** There is no significant difference in the mean ( $\bar{x}$ ) values of female students and their male counterparts exposed to either or both strategies.

N	$\sum(\bar{x}-x)^2$	$(\bar{x})$	SD	df	t-cal	$\alpha$ -level	t-tab
50	59	17	1.11	96	20.8	0.05	2.000
48	50	15	1.05				

Table 3: Standard deviation (SD) and mean values of female and male students

t-cal. 20.8 > t-tab 2.000

Decision: Significant

Ho2: Rejected

## DISCUSSION OF RESULT

Table 2 finding indicated that there is significant difference in the mean ( $\bar{x}$ ) values of students taught using podcast from those taught using vodcast. This signifies that students taught using podcast have higher academic achievement than those taught using vodcast. This may be as a result of higher number of students exposed to podcast category than to the vodcast category. This contradicts Lowman (2014) finding on iPod accessed vodcasts and podcasts' impact on vocabulary acquisition by fourth- and sixth-grade students, which showed that more words were significantly learned by vodcast group than their podcast counterpart. This finding is also not in line with that of Walker, Cotner and Beermann (2009) who established that students taught with custom vodcasts performed higher as compared to those taught with class captures. However, this finding tallies with that of Mashhadi, Hayati and Jalilifar (2016) and Guettaftemam (2016) who observed better performance of students with podcast-supplemented approach than with conventional strategies.

Table 3 finding indicated that there is significant difference in the mean ( $\bar{x}$ ) values of female students from their male counterparts exposed to either or both strategies. This signifies that female students outperformed the male students when taught using vodcasts or podcasts. Hence, students' gender is a significant factor that determines how they learn through vodcasts and podcasts. This opposes Gam and Bari (2017) finding that revealed that the mean score achievement of students exposed to screencast did not significantly differ based on gender.

## CONCLUSION

There is a significant difference in the academic achievements of undergraduate students, who offer ICT in Research, a Course in Faculty of Education, University of Port-Harcourt, when provided with lectures recorded in podcasts and in vodcasts formats. Students exposed to podcast recorded lectures performed higher than their vodcast counterpart. In addition, the gender of these students was also significant determinant of how they learned using any of these two strategies; as female students recorded higher performance than the male students. Thus, podcast has proven to be effective in transforming most face-to-face classroom meetings, by being a more reflective, engaging and innovative pedagogical strategy that impact students' performances positively.

### Implication to Research and Practice

1. Majority of the undergraduate students who offer ICT in Research, a Course in Faculty of Education, University of Port-Harcourt are audio learners rather than visual learners.
2. Exposing these students to lecture podcasts go a long way in promoting knowledge acquisition and improving their performances.
3. Among these undergraduate students, the female folds are more committed to their studies than their male counterpart.

## Recommendations

1. Educators in Faculty of Education, University of Port-Harcourt should mostly adopt podcasting strategy to support their students' knowledge construction since it has more effect on students' academic achievement than vodcasting strategy.
2. The university administrators should support educators' use of podcasts in their teaching by providing high internet bandwidth in their school environments.
3. Students should also be encouraged to learn through podcasts by providing them with mp3 devices, computer or smart/android phones and internet connectivity at subsidized rates.
4. The university should make students' subscriptions to podcasts free of charge.

## REFERENCES

- Business Dictionary. (2017) Podcast definition. Retrieved 10<sup>th</sup> November, 2017 from <http://www.businessdictionary.com/definition/podcast.html>
- Gam, A. I. and Bari, S. A. H. (2017) Effects of instructional screencast on the performance of National Open University undergraduates in educational technology in Kwara state, Nigeria. *Bulgarian Journal of Science and Education Policy (BJSEP)* 11 (1), 132-159.
- Guettaftemam, A. (2016) The impact of using podcasts on developing EFL students pronunciation case study of second year students of English division at Mohamed Kheider University of Biskra. Dissertation Submitted in Partial Fulfillment for the Requirements of the Master's Degree in Sciences of language. Retrieved 15<sup>th</sup> December, 2017 from <http://dspace.univ-biskra.dz:8080/jspui/bitstream/123456789/8593/1/a18.pdf>
- Indiana University Knowledge Base. (2016) Archived: What is podcasting? Retrieved 10<sup>th</sup> November, 2017 from <https://kb.iu.edu/d/arxx>
- International Podcast Day. (2017) What is podcast? Retrieved 10<sup>th</sup> November, 2017 from <https://internationalpodcastday.com/what-is-podcast/>
- Learning Times. (2014) What is podcasting? Retrieved 10<sup>th</sup> November, 2017 from <http://www.learningtimes.com/what-we-do/podcast-production/about/>
- Lowman, J. (2014) Exploring the use of podcasts and vodcasts: multimedia tools for word learning. Retrieved 17<sup>th</sup> November, 2017 from <http://www.tandfonline.com/doi/abs/10.1080/07380569.2014.967622>
- Mashhadi, A., Hayati, M. and Jalilifar, A. (2016) The Impact of Podcasts on English Vocabulary Development in a Blended Educational Model . *Applied Research on English Language*, 5 (2), 145-172
- Merriam-webster.com. (2012) Podcast- definition and more from the free Merriam-Webster dictionary. Retrieved from <http://www.merriam-webster.com/dictionary/podcast>
- Pena, R. J. (2011) The impact of podcasts, screencasts, and vodcasts on student achievement in the science classroom. *Dissertation Abstracts International*, 73 (01), 0162
- Rae, M. G. and McCarthy, M. (2017) The impact of vodcast utilisation upon student learning of Physiology by first year graduate to entry medicine students. *Journal of the Scholarship of Teaching and Learning*, 17 (2), 1-23.

- Schnackenberg, H. L., Vega, E. S. and Warner, Z. B. (2009) Chapter XLIII podcasting and vodcasting in education and training. Retrieved 17th November, 2017 from <http://www.irma-international.org/viewtitle/21610/>
- Walker, J. D., Cotner, S. and Beermann, N. (2009) Vodcasts and Captures: Using Multimedia to Improve Student Learning in Introductory Biology. Retrieved 7th December, 2017 from [https://www.oit.umn.edu/prod/groups/oit/@pub/@oit/@web/@evaluationresearch/documents/article/oit\\_article\\_247701.pdf](https://www.oit.umn.edu/prod/groups/oit/@pub/@oit/@web/@evaluationresearch/documents/article/oit_article_247701.pdf)
- Zelin, R.C. and Baird, J. E. (2012) Using publicly available podcasts and vodcasts in the Accounting curriculum: Suggestions and student perceptions. *Academy of Educational Leadership Journal*, 16 (1), 87.