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Investigating the Use of Video-Conferencing as an Innovative Instructional Medium by the National Open University of Nigeria

By

EMENIKE EJINWA

*Department of Adult and Continuing Education,
Michael Okpara University of Agriculture, Umudike,
Abia State.*

Abstract

This study investigated the use of video-conferencing as an innovative instructional medium in National Open University of Nigeria (NOUN). The study used descriptive survey research. The instrument for data collection was the questionnaire which was developed by the researcher. One research question and one hypothesis guided the study. The population of the study was 11,090. The student population was 11,050 while the facilitators' population was 50. Stratified random sampling was used and the statistical tool Yaro-Yamane was used to arrive at 387 as sample for the students in the four study centres of The National Open University of Nigeria located in the South east geographical zone of Nigeria. There was no sample for the facilitators because of the small number in each of the four centres. The findings of the study were as follows: 1. The online video-conferencing platform set up by the National Open University of Nigeria is not being utilized by the students for learning. A significant percent of the students do not know how to use the video-conferencing platform for learning. Some of the challenges based on the findings by the students in the use of video-conferencing include technical problems such as poor audio and video quality. It was recommended that The National Open University of Nigeria should organize awareness programmes on continuous bases for the students and improve on the audio and video quality of the platform. There should also be a yearly workshop to train the students on how to use the video-conferencing platform as an innovative teaching and learning approach.

Keyword- Video-conferencing.

Objectives of the Study

The aim of this paper was to investigate the use of the online video-conferencing as an instructional delivery medium in the National Open University of Nigeria and its constraints. Specifically this study sought to:

1. Examine the extent to which videoconferencing is used in teaching and learning at the National Open University of Nigeria.

Definition of Keyword and Research Findings on It

Concept of Video-conferencing

Video-conferencing in education offers a paradigm shift in pedagogical practices by incorporating video, audio, text, pictures aimed towards enhancing teaching and learning. Videoconferencing is a teaching and learning tool/strategy with close association with technology. Video-conferencing in the classroom is a two way live interaction on a screen in which the teacher sees, hears and talks to students who are many miles away. Arnold, Cayley, and Griffiths (2004) defines video-conferencing as a communication tool that allows users to see, hear and talk to the person they are communicating with. It is a vehicle for interactive communication which enables one set of students to see and hear students in different location. Video-conferencing brings the world into the classroom, enabling students to speak directly to their peers and experts in other places around the world.

Roblyer (1997) defines videoconferencing as a type of distance education that has been used in the classroom for many years. Distance Education refers to learning environment where there is a separation between instructor and student over a distance. She added that video-conferencing relies on electronically transmitted education programme usually with support from print materials. It enables a teacher to be at two places at the same time. Nikitin, Sinopol, Sorotsky and Tsikin (1996) made it clear that interactive communication between teacher and student is a necessary element of educational process. It can be realized as an asynchronous (offline) or synchronous (online). Real time video-conferencing can provide contact between teacher and student similar to that available with face to face classroom. John (2003), maintained that video technology and telecommunication network are used to link individuals for videoconferencing. This takes place in 'real time' in which participants are present in various locations at the same time, and live video link displays their images on a monitor in each location classroom. Telecommunication allows for their communication while video technology displays their presence.

Schutte (1998), stated that video-conferencing brings new ways for teachers to work with students and encourage the development of strategies more consistent with emerging technology. She simply defines video-conferencing as an interactive communication medium which lets students and teachers have visual connection to

those they are working with, whether they are down the hall, across the street or on the other side of the globe. Arnold (2004) further gave an insight into what video-conferencing is. He explained that videoconferencing calls are usually point-to-point calls which set up a direct link between participants. Calls can be made locally, nationally or across the world. They also expatiate on multipoint videoconferencing: Multipoint video-conferencing is also possible where more than two users or groups take part in the call. Videoconferencing between two sites is called point-to-point. When there are more than two sites, it is called multipoint. Multipoint Conferencing Units (MCU) facilitates conferencing between more than two sites at the same time. MCUs act as a central bridging device that can link a number of users into a single conference.

Presently, there are other online videoconferencing platforms which can be utilized by teachers and students for teaching and learning. Some of them are: Skype, Imo etc. Zanetis (2003) remarked that asynchronous communication, such as e-mail has done much to alleviate the problem of teacher and student interaction but video-conferencing offers special benefit. It is synchronous or real time technology that offers a new way for teachers to collaborate with colleagues and to help their students share their learning with distant peers. With the installation of a computer with internet connectivity, a school can connect to the outside world via video-conferencing and interact with other schools that have the same capabilities.

According to Zanetis (2003), video-conferencing technology has removed the traditional classroom barrier of time and place. Nikitin *et al* (1996) observed that videoconferencing enables users to watch full motion image of the teacher or fellow student. It is a very convenient means of testing. A teacher can watch on the screen a student taking examination, speak with him and look through his paper. Video-conferencing is very important in learning languages especially by foreign students. For instance, to develop correct pronunciation of difficult sound in phonetics, it is important for students not only to hear but also to watch teacher's articulation, facial expression, tongue and shape of lips. As a distance education technique, videoconferencing has the potential to reach people in urban and remote rural locations. The student's life experiences maybe world apart but through video-conferencing, students are brought together. Students are always enthusiastic about this new form of technology which enables them to exchange views with their peers around the world.

Video-conferencing gives schools opportunities to meet and question the experts who, in some cases would not be available to the class group. Most times, students in remote schools have rare opportunity to meet the author of their prescribed literature text. The author could be made to participate in the video conferencing from his home or office giving thorough knowledge about his works and explaining some areas which the students do not understand. Video-conferencing teaching strategy help improve students speaking and listening skills and their presentation skill as they work with different audience in different locations (Ejinwa, 2005).

Logan (1998) explained that video-conferencing allows for the invitation of guest lecturers to speak to the students from their house or office. Through video-conferencing, guest lecturers can present to the class without the cost of transportation and housing. Zanetis (2003) wrote that more schools are looking at video-conferencing as a way to provide enriching experience that would otherwise be inaccessible to students. Video-conferencing makes it possible to demonstrate sophisticated laboratory experience to students. She further opined that video-conferencing technology makes sense in large schools with many distance campuses spread over many miles away and with the shortage of teachers in specialized areas such as foreign language etc.

Video-conferencing in the National Open University of Nigeria

Videoconferencing as an innovative approach to teaching and learning in NOUN was introduced in 2014. NOUN videoconferencing online platform is called 'i-learn' videoconferencing platform. It is a new and innovative e-learning platform that brings the university close to the learners by giving them instant or real time access to learning resources, classmates and facilitators. This learning platform can be accessed on the internet, mobile phones or via other mobile devices. I-learn provides multimedia learning utilizing tools such as smart boards that present course content in an exciting way allowing students to learn in real time in an interesting way. The new virtual classroom allows students to discuss and ask their facilitators or fellow students question on grey and knotty areas and get instant clarification in real time.

i-learn interactive learning platform offers the following learning opportunities to students:

1. The learning platform can be accessed on tablets and mobile devices
2. It allows the students to learn while they work, therefore, keeping to the motto of the university which is "work and learn"
3. It makes learning flexible to fit into students' daily routine.
4. Students can discuss with fellow students with similar interest in the various communities.
5. Past lectures can be viewed and down loaded by the student for constant revision and regurgitation.

i-learn video and audio conferencing platform has actually revolutionize the learning experience offering students numerous academic opportunities which may not be available in conventional Universities. The online learning platform also offers students multi dimensional video as well as audio lectures in which students listen and watch their facilitators break down the core concept of the course for easy assimilation in real time(NOUN, 20016).

Methodology

The research design used in this work is the descriptive survey design. The area of the study is the National Open University of Nigeria study centres located in the South East geo-political zone. The population for the study comprise all the students

and facilitators in the four study centres of the University located in Umuahia, Owerri, Enugu and Awka. The sample drawn from the population of the students for the research work is 387. This sample was drawn using the statistical tool Yaro-Yameni. The sample was drawn using proportionate stratified random sampling techniques. The instrument for data collection was the questionnaire. The instrument was developed by the researcher and it was entitled "Evaluation of the use of e-learning in NOUN (EUE – NOUN). The instrument was developed bearing in mind the two research questions. It was structured based on a 4-point measuring scale with the response options of Strongly Agree (SA) Agree (A) Disagree (D) and Strongly Disagree (SD). It contains 10 items. The instrument was validated by (2) experts. One is an expert in educational technology. One of the validators is an expert in open and distance learning, National Open University of Nigeria. The second validator is an expert in measurement and evaluation from Michael Okpara University of Agriculture Umudike. The validators went through the items in the instrument and made corrections in respect to face validity, clarity, as well as the appropriateness of the instructions to the respondents items. The reliability of the instrument was determined by administering copies of the questionnaire to 20 students. The reliability coefficient was 0.75 using Cronbach Alpha statistics. Data analysis was done using mean score with standard deviation. A mean of 2.50 was used as a criteria for decision making for each item. Therefore, any item with a mean of 2.50 and above was accepted as agree while any item with a mean below 2.50 was disagreed.

Research Questions

The following research questions served as guide to this study:

1. To what extent is video-conferencing used in teaching and learning in National Open University of Nigeria?

Hypothesis

2. There is no significant difference in the mean ratings of students and facilitators to the extent to which the online i-learn video-conferencing platform is used in teaching and learning.

Findings

The results of this research are presented in line with the research questions. The result was analyzed using **mean, standard deviation and grand mean**. The findings are presented in the tables below.

Table 1: Mean Ratings of Students and Facilitators on the Extent to which they Use the Online Video-Conferencing Platform

S/N	Part 1:	Students N= 387						Facilitators N=40						SD	Decision
						X	SD	Decision	ve	Ge	le	Vi	\bar{X}		
36.	I have accessed the 'ilearn' video-conferencing platform many times this semester	89	42	64	192	2.07	1.23	LE	14	3	8	15	2.4	1.32	LE
37	I do not know how to access the online video-conferencing plat form	94	74	69	150	2.29	1.21	LE	13	13	2	12	2.68	1.23	GE
38.	I have not accessed the video-conferencing platform at all	107	60	77	143	2.34	1.23	LE	13	8	7	12	2.55	1.24	A GE
39.	I experience difficulty logging on to video-conferencing platform	108	71	74	134	2.40	1.22	LE	17	7	9	7	2.85	1.17	GE
40.	The videoconferencing platform engages my interest and motivate me for serious academic work	91	81	82	133	2.34	1.18	LE	15	12	5	8	2.85	1.14	GE
41.	The video quality of the online video-conferencing platform is always clear	82	68	71	166	2.17	1.19	LE	12	9	11	8	2.62	1.13	A GE
42.	The audio quality of the videoconferencing platform is clear at all time when listening	68	92	93	134	2.24	1.11	LE	17	16	3	4	3.15	0.97	GE
43.	It takes a long time to connect to the online videoconferencing portal	95	79	90	123	2.38	1.17	LE	15	10	11	4	2.9	1.03	GE
44.	The length of time allocated for each real time video-conferencing interaction with the facilitator is suitable for good understanding	74	90	91	132	2.27	1.13	LE	10	10	4	16	2.34	0.98	LE
45.	I have no difficulty navigating through the online videoconferencing platform	100	69	85	133	2.35	1.20	LE	14	12	16	8	2.8	1.14	LE
Grand mean for students = 2.29								Grand mean for Facilitators= 2.34							
Total grand means for both students and facilitators = 2.32															

KEY: GE = Great Extent. LE = Less Extent.

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The data on table 1 shows mean ratings of students and Facilitators on the extent to which they use the 'ilearn' video conferencing platform. Out of the 10 items that elicited information on the above, students had low mean rating of 2.07, 2.29, 2.34, 2.40, 2.34, 2.17, 2.24, 2.38, 2.27 and 2.35 on all the items ranging from 36-45 with grand mean of 2.29. The table also shows that the facilitators on the other hand agree to a great extent on items 37, 38, 39, 40, 41, 42, 43 and 45. Facilitators also recorded low mean ratings on items 36 and 44 with grand mean of 2.34. The total grand mean for both students and facilitators is 2.32. This shows that the answer to research question 1 is that the 'ilearn' video-conferencing platform is utilized to a low extent in teaching and learning at the National Open University of Nigeria.

Research hypothesis 1: There is no significant difference in the mean rating of students and Facilitators to the extent they utilize the 'ilearn' video-conferencing online platform in teaching and learning in NOUN.

Table 2: T-Test Analysis of Difference between the Mean Rating of Students and Facilitators on the Extent they Utilize the 'Ilearn' Video-Conferencing Online Platform in Teaching and Learning in NOUN

	\bar{x}	SD	N	Df	t-cal	t-critical	Decision
Students	2.29	1.19	387	425	0.57	1.97	
Facilitators	2.34	0.92	40				

Table 2 shows that the calculated value of t- at .05 level of significance and 425 degree of freedom is 2.60 while the critical or table value of t- is 1.97. Since the t -value is less than the t- critical value, the null hypothesis is therefore not rejected. This implies that there is no significant difference between the mean rating of students and facilitators on the extent they utilize the 'ilearn' video-conferencing online platform in teaching and learning in NOUN

Summary of Findings

1. Students and facilitators in the National Open University of Nigeria use the online video-conferencing platform in teaching and learning to a low extent.
2. Significant difference exists in the mean ratings of students and facilitators on the extent in which they use the online videoconferencing platform in teaching and learning.

Discussion of the Findings

Research question 1 sought answers to the extent to which students and facilitators use the i-learn video-conferencing online platform in teaching and learning at the National Open University of Nigeria. This was answered with the aid of table 1 which contains 10 items. The analysis of the items shows that students have a grand mean of 2.29 while Facilitators have the mean of 2.34. The total grand mean for both students and facilitators is 2.32. This shows that the answer to research question 1 is that both students and Facilitators do not utilize the video-conferencing online platform in teaching and learning at the National Open University of Nigeria to a great extent. This was in line with the findings of Nwanna (2015) in which he examine the extent of application of available e-learning materials in teaching and learning. The researcher found out that the available e-learning resources such as video-conferencing is not being integrated by students and teachers in the teaching and learning process.

The t-test analysis shows that the t -calculated value (± 0.57) at .05 level of significance is less than the t- critical (1.97). Since the t- value is less that the t- critical value, the null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of students and facilitators to the extent to which they use videoconferencing in teaching and learning in the National Open University of Nigeria.

Educational Implications of the Findings

The innovative approach to instruction using modern technology such as the online video-conferencing platform is being used by the students and facilitators to a lesser extent. The educational implication of this finding is that the much taunted and advertised innovative learning platform is not achieving its intended objectives. The intention of using this innovative e-learning platform is to bring the university close to the learners, make learning interesting, enable the students to get answers to their academic problems in real time and make learning flexible to fit into the students' daily routine. All these may not be attained when the online video-conferencing platform is not being used by the students.

Conclusion

Video-conferencing is a veritable teaching and learning tool utilized by Open and distance learning institutions like the National Open University of Nigeria. It is an innovative technology approach to instruction which enables ODL institutions to deliver instructions to remote students. Concerted efforts should be made by the federal government and NOUN to ensure its efficient and effective integration in teaching and learning.

Recommendations

Based on the findings of this study, the following recommendations are made.

For the objectives of using the online video-conferencing to be realized, the students should be trained and retrained. Awareness campaign must be mounted to create awareness of the existence and use of the innovative approach to learning. The academic staff should be trained on online instructional delivery.

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