Jurnal Genesis Indonesia (JGI)
Vol. 2, No. 02, pp. 83-94
journal.iistr.org/index.php/JGI
DOI: 10.56741/jgi.v2i02.327

Virtual Classroom Proficiencies Required by Business Education Lecturers in Colleges of Education in North East Nigeria

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ARTICLE INFO

Article history
Received 24 April 2023
Revised 17 May 2023
Accepted 18 May 2022

Keywords
Business Education
ICT
Nigeria
Proficiencies
Virtual Classroom

ABSTRACT

This study examined the virtual classroom proficiencies required by Business Education lecturers in Colleges of Education in North East Nigeria. The study adopted a descriptive survey research design. The study's population was 252, which included 218 lecturers and 34 ICT experts from five colleges of education in Nigeria's North East, with Borno state exempted due to security concerns. Because there was no sampling, the entire population was used for the study due to its manageable size. Data was collected using a validated questionnaire. The instrument was validated by experts. A reliability coefficient was calculated using the Cronbach Alpha technique and a reliability index of 0.89 was achieved after a trial test of the instrument on 10 lecturers and eight ICT Experts. Data for the research questions were analyzed using mean statistics and the hypotheses were tested at a 0.05 level of significance using t-test. The findings revealed lecturers lack proficiency in the use of available participant panel features in a virtual classroom as well as they were not proficient in the use of video play features of the virtual classroom.

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Introduction

The goal of the Business Education academic program, which is offered in tertiary institutions, is to give students learning opportunities so they may develop skills they can use for their jobs, running their own businesses, assimilate into society, and improving the country [1]. As a result, its components include a combination of general education and business components. The increasing demand for business knowledge has resulted from the Western world's industrial revolution and indigenization policies [2]. Business Education is becoming increasingly important in order to fill the void left by unemployment. The skill gap of adolescents graduating from the nation's higher education institutions must be closed; else, social vices and youth restlessness are unlikely to be avoided. According to [1], Business Education is that part of the overall educational program that gives students the knowledge, skills, understanding, and attitudes necessary to function successfully in the business world as a producer and/or consumer of the goods and services that business delivers as well as to be able to impart knowledge to the learners.

The development of office-related skills is emphasized in Business Education, a crucial part of general education. Business Education is a two-part instructional program that consists of: Office Education (a vocation program for office careers) and General Business Education (a program that provides recipients with the competencies and skills needed to manage personal business affairs and use business world services) [1]. Individuals who receive Business Education training may quickly develop potentials for entrepreneurship initiatives, especially in these times of economic disaster and unemployment [2].

As a result, Business Education is intended to train and develop receivers in the field of business and as professionals, hence broadening the path for imparting competencies for the economic development of society. Information and Communication Technologies (ICT) has been included into the Business Education curriculum to make Business Education graduates more relevant in the Nigerian economy and around the world in terms of employment development. This is required because the globe is now considered as a "global village" due to technological advancements in communication abilities and gadgets [3], [18]. Because of globalization, the computer has become an extremely significant instrument in practically every industry, economy, educational system, and individual's life. Seeing this need, the Federal Republic of Nigeria (FRN) established the National Committee on Computer Education in 1998 to determine the methods of incorporating computer education into the nation's educational system [4]. The committee later formed a policy in computer education stating that Nigerians at all levels of school should be exposed to this modern instrument so that they can utilize it, appreciate its potentials, understand how it works, and learn how to apply it to everyday problems [6].

Individuals in the previous millennium were regarded educated if they could read and write; in the current millennium, they are considered educated if they can read, write, and communicate using computer tools and devices. As a result, Information and Communication Technology (ICT) is a crucial tool that can be used to solve the challenges of the Nigerian education system [7].

When working with Information and Communication Technologies (ICT) in education, lecturers face numerous challenges. Many of the issues stem from the incompatibility of the technology employed with the educational needs. It is obvious that innovative learning methods are among the future challenges for any industry. Learning is an important support mechanism for enterprises to improve the abilities of their personnel, as well as for educational institutions. [8]. The increased popularity of e-Learning has resulted in the introduction of virtual teaching and learning schemes, which are backed by an emerging concept known as virtual classrooms.

The virtual classroom is a model classroom where students can perform typical face-to-face classroom tasks online. The virtual classroom minimizes the cost of travel, wasted time, and the costs of on-site teaching and training programs. It may be utilized as a live delivery and interaction solution that tackles the full process of designing and administering our teaching and learning processes. It also assists lecturers and students in teaching and learning activities such as seminars, online discussions, and live training programs for specific company personnel.

According to Ref. [3], a virtual classroom is a teaching and learning environment that is housed within a computer-mediated communication system. It is made up of assets for group communication and work "spaces," as well as software-built facilities. Furthermore, Ref. [5], asserted that learning improves through collaborative social interaction and the social creation of knowledge both within and outside of the classroom. Students must learn by engaging with their peers in order to gain knowledge.

The size, capabilities, and services provided by virtual learning environments are incredibly varied, and they may accommodate people of all educational levels, ages, and special needs. Chat systems, audio, and video teleconference can assist virtual classrooms manage the presence of the lecturer and the learners in the same way that traditional classrooms do. Moreover, course lecture notes and presentations can be presented using the online whiteboard technology. Consequently, a virtual classroom can be envisioned as a classroom where lectures are delivered utilizing the Internet as a means of interaction with learners, which can be synchronous or asynchronous [3].

Virtual classrooms that offer simultaneous online communication between the lecturer and students from several places are known as synchronous virtual classrooms [9]. The software used in the synchronous virtual classroom offers numerous benefits that may aid in the learning process. The possibility of the lecturer and students seeing each other during lectures and during discussion periods is one of the benefits. Furthermore, the fact that the students may be taken on a synchronous tour of many websites where the students may view the sites that the professor has browsed may be an added benefit.

Despite its many benefits, the program is not frequently used in developing countries due to slow internet connections. In synchronous virtual classrooms, lecturers and students frequently require sophisticated gadgets in addition to a high-speed connection [10]. Blackboard Collaborate, Adobe Connects, the Paltalk and RoomTalk programs, the Ph Virtual Classroom, Centra, and Learning programs are some examples of software that could be used for synchronous virtual classrooms.

Asynchronous virtual classrooms are self-paced e-learning platforms that let students peruse the readings at their convenience and then engage with the course material online. The key advantage of an asynchronous virtual classroom is the temporal flexibility, since the student can connect on at any time to send messages to the lecturer or colleagues and study or , download papers [11]. It also allows Business Education students more time to contribute thoughtfully than synchronous classrooms.

A. Statement of the Problem

The internet is not widely and readily available in Nigerian's tertiary institutions especially the second tier of the tertiary institutions which is the Colleges of Education and in particular, the North East geopolitical zone. Most Colleges of Education in the North East geopolitical zone have limited access to online services. Some lecturers find it difficult to participate in digital teaching/learning because they lack stable internet connectivity and/or technology; this is a national issue. With inadequate training, limited bandwidth, and little preparation, an unprepared and fast move to online teaching/learning may result in a poor user experience that may be damaging to the long-term growth and development of the learners. It is against this backdrop that the study determines the virtual classroom proficiencies required by Business Education lecturers in Colleges of Education in North East Nigeria.

B. Purpose of the Study

The main purpose of the study was to determine the virtual classroom proficiencies required by Business Education lecturers in Colleges of Education in North East Nigeria. Specifically, the study sought to:

- Determine the Business Education lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria
- Determine the Business Education lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria
- Determine the Business Education lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria

C. Research Questions

The following questions guided the study.

- What is the Business Education lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria?
- What is the Business Education lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria?
- What is the Business Education lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria?

D. Hypotheses

- HO1: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria.
- HO2: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria
- HO3: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria.

Methods

A descriptive survey research design was used for the study, which was conducted in North East Nigeria. North East, Nigeria is located near the equator at latitude 6.260 East and

longitude 4.920 North East. Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe states are included in the zone. The study's population was 252, which included 218 lecturers and 34 ICT experts from five colleges of education in Nigeria's North East, with Borno state exempted due to security concerns. Because there was no sampling, the entire population was used for the study due to its manageable size. The researchers used a structured questionnaire called the "Colleges of Education Virtual Classroom Test Questionnaire (CEVCTQ)" to collect data. The questionnaire responses were organized on a 5-point scale with Highly Proficient (HP) = 5, Proficient (P) = 4, Moderately Proficient (MP) = 3, Somewhat Proficient (SP) = 2, and Not Proficient (NP) = 1. Three validates from the Department of Business Education, Federal College of Education, Yola, Adamawa State, validated the questionnaire. Using the Cronbach Alpha technique, a reliability index of 0.89 was achieved after a trial test of the instrument on 10 lecturers and eight ICT Experts in College of Education, Panshi, in Plateau State. The researchers gathered data for the study with the assistance of five research assistants (One in each College). The mean statistic was used to answer the study's three research questions, while the t-test was utilized to test the study's null hypotheses. All items with a mean score of 3.5 or higher were judged "Proficient," while those with a score of less than 3.50 were rated "Not Proficient." When deciding on a hypothesis, the null hypothesis was regarded "Significant" if the p-value was larger than the -value, and "Not Significant" if the p-value was less than the -value.

Results

A. Research Question 1: What is the Business Education lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria?

Table 1 displays the response on the Business Education lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria. The respondents indicated that the lecturers were not proficient in the use of available participant panel features in a virtual classroom with a group's mean response of 2.09 which is below the criterion value of 3.50.

Table 1. Mean and Standard Deviation of Lecturers' Level of Proficiency in the Use of Available Participant Panel Features in a Virtual Classroom

		N = 252		
S/NO	Features	$\bar{x}$	SD	Remark
1.	Ability to send a private Chat message	1.97	0.18	NP
2.	Ability to send oneself to a breakout room	2.01	0.24	NP
3.	Ability to save the participants list	2.02	0.42	NP
4.	Ability to print the participants' list	2.03	0.59	NP
5.	Ability to see who has joined the session and their permissions	2.01	0.24	NP
6.	Ability to see who is currently using a feature (activity lights)	2.03	0.40	NP

S/NO	Features	N = 252 $\bar{x}$	SD	Remark
7.	Ability to see if any participants are experiencing delays in receiving the whiteboard content, audio, application sharing, or video	1.97	0.18	NP
8.	Ability to interact with others by entering and viewing polling responses, using the emotion indicators, and raising yours	2.05	0.58	NP
9.	Ability to edit your own profile	2.07	0.55	NP
10.	Ability to view a user's profile	2.16	0.65	NP
11.	Ability to remove a participant from the session	1.97	0.18	NP
12.	Ability to give or take away moderator privileges	2.33	0.98	NP
13.	Ability to grant or take away a participant's permission to use a feature	2.27	0.84	NP
14.	Ability to create and distribute participants to various breakout rooms or return them all to the main room	2.25	0.83	NP
15.	Ability to allow participants to send themselves to breakout rooms	2.20	0.72	NP
16.	Ability to invite someone to be a participant in the session	2.23	0.88	NP
17.	Ability to conduct a poll	1.97	0.18	NP
	Group Mean	**2.09**		**NP**

$\bar{x}$= Grand Mean, *S*D = Standard deviation, N = Total Number of Respondents, NP= Not Proficient

B. Research Question 2: What is the Business Education lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria?

Table 2 displays the response on the Business Education lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria. The respondents indicated that the lecturers were not proficient in the use of video play features of the virtual classroom with a group mean response of 2.17 which is below the criterion value of 3.50.

Table 2. Mean and Standard Deviation of Lecturers' Level of Proficiency in the Use of Video Play Features in a Virtual Classroom

S/NO	Features	N = 252 $\bar{x}$	SD	Remark
1.	Ability to preview a video transmission	2.37	0.96	NP
2.	Ability to transmit a video broadcast	2.26	0.91	NP
3.	Ability to receive a video broadcast	2.20	0.72	NP
4.	Ability to set video camera preferences	1.97	0.18	NP
5.	Ability to capture a video image and send it to the whiteboard	2.20	0.70	NP
6.	Ability to change what is shown in the primary video display	2.21	0.77	NP
7.	Ability to make the video display follow the current speaker	2.22	0.84	NP
8.	Ability to make the video display follow the moderator's focus	2.24	0.83	NP
9.	Ability to grant/revoke the video permission to/from participants	2.03	0.18	NP
10.	Ability to configure simultaneous cameras	1.97	0.18	NP
	Group Mean	**2.17**		**NP**

$\bar{x}$= Grand Mean, *S*D = Standard deviation, N = Total Number of Respondents, NP= Not Proficient

C. Research Question 3: What is the Business Education lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria?

Table 3 displays the response on the Business Education lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria. The respondents indicated that the lecturers were not proficient in the use of virtual whiteboard tools features in a virtual classroom with a group mean response of 2.26 which is below the criterion value of 3.50.

Table 3. Mean and Standard Deviation of Lecturers' Level of Proficiency in the Use of Virtual Whiteboard Tools Features in a Virtual Classroom

		N = 252		
S/NO	**Features**	$\bar{x}$	**SD**	**Remark**
1.	Ability to use drawing and text tools to create objects	2.94	0.35	NP
2.	Ability to insert images, clip art and screen captures as objects	2.20	0.70	NP
3.	Ability to modify/edit own objects or objects of others, including grouping and ungrouping objects	2.46	0.90	NP
4.	Ability to erase or delete own objects	2.17	0.66	NP
5.	Ability to manage objects in the object explorer	2.23	0.81	NP
6.	Ability to scale pages in the content area	2.19	0.85	NP
7.	Ability to manage clip art collections	2.16	0.65	NP
8.	Ability to save whiteboard pages to a file (non-propriety whiteboard only)	1.97	0.18	NP
9.	Ability to print whiteboard pages (non-propriety whiteboard only)	1.97	0.18	NP
10.	Ability to set participant whiteboard permissions	2.17	0.67	NP
11.	Ability to navigate through whiteboard pages	2.17	0.74	NP
12.	Ability to manage pages in the explore pages window	2.41	1.05	NP
13.	Ability to explore pages using explore mode	2.25	0.89	NP
14.	Ability to change page properties	2.35	0.93	NP
15.	Ability to load a presentation/open a whiteboard file into the main room.	2.27	0.82	NP
16.	Ability to create a new whiteboard page or page group in the main room	2.09	0.62	NP
17.	Ability to see what whiteboard pages each participant is currently viewing and send yourself to the whiteboard page that a participant is currently viewing	2.19	0.68	NP
18.	Ability to set view of whiteboard pages as thumbnails in the explorde windows	2.25	0.82	NP
19.	Ability to copy whiteboard pages from the main room or a private room to breakout rooms and from breakout rooms to the main room	2.17	0.81	NP
20.	Ability to erase or delete objects of others	2.46	1.10	NP
21.	Ability to move objects to the background or foreground	2.42	1.02	NP
	Group Mean	**2.26**		**NP**

$\bar{x}$= Grand Mean, *S*D = Standard deviation, N = Total Number of Respondents, NP= Not Proficient

D. Hypothesis 1

Hypothesis 1: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria.

Table 4. t-test Analysis between Lecturers and ICT Experts on Lecturers' Level of Proficiency in the Use of Available Participant Panel Features in a Virtual Classroom

Respondents	N	Mean	SD	df	t	P – value	Remark
Lecturers	218	2.09	0.31				
				250	0.83	0.41	Not Significant
ICT Unit Staff	34	2.04	0.55				

P >0.05 N= Number of respondents, SD= Standard Deviation

Table 4 is the result obtained when hypothesis one was tested at 0.05 level of significance. The p-value stood at 0.41. Since the p-value is greater than the α-value of 0.05, the null hypothesis one, is therefore upheld.

E. Hypothesis 2

Hypothesis 2: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria.

Table 5. t-test Analysis between Lecturers and ICT Experts on Lecturers' Level of Proficiency in the Use of Video Play Features in a Virtual Classroom

Respondents	N	Mean	SD	df	t	P – value	Remark
Lecturers	218	2.17	0.52				
				250	0.49	0.63	Not Significant
ICT Unit Staff	34	2.13	0.50				

P >0.05 N= Number of respondents, SD= Standard Deviation

Table 5 is the result obtained when hypothesis two was tested at 0.05 level of significance. The p-value stood at 0.63. Since the p-value is greater than the α-value of 0.05, the null hypothesis two, is therefore upheld.

F. Hypothesis 3

Hypothesis 3: There is no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria.

Table 6. t-test Analysis between Lecturers and ICT Experts on Lecturers' Level of Proficiency in the Use of Virtual Whiteboard Tools Features in a Virtual Classroom

Respondents	N	Mean	SD	df	t	P – value	Remark
Lecturers	218	2.27	0.50				
				250	0.87	0.39	Not Significant
ICT Unit Staff	34	2.19	0.52				

P >0.05 N= Number of respondents, SD= Standard Deviation

Table 6 is the result obtained when hypothesis three was tested at 0.05 level of significance. The p-value stood at 0.39. Since the p-value is greater than the α-value of 0.05, the null hypothesis three, is therefore upheld.

Discussion

The findings of the study revealed that the lecturers lack proficiency in the use of available participant panel features in a virtual classroom with a group mean response of 2.09 which is below the criterion value of 3.50. The supporting hypothesis indicated that there was no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of available participant panel features in a virtual classroom in Colleges of Education in North East Nigeria. The findings is in agreement with [3] who reported that lecturers in Northeast Nigeria required virtual classroom competencies. However, in line with the findings of the study, Ref. [12] and [13] noted that lecturers in Nigeria are not yet exposed to virtual classrooms as those with the knowledge are not very few and they make frantic efforts towards acquiring the skills.

The findings of the study revealed that lecturers were not proficient in the use of video play features of the virtual classroom with a group mean response of 2.17 which is below the criterion value of 3.50. The complementary hypothesis revealed that there was no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of video play features in a virtual classroom in Colleges of Education in North East Nigeria. The finding is in agreement with Ref. [14] and [15] who reported that teachers are expected to be proficient in the use of video technology, however, the level of teachers' knowledge on the use of video technology is abysmally low. Ref. [12] acknowledges that only a few teachers could use video technology features in a virtual classroom.

The findings of the study revealed that lecturers lack proficiency in the use of virtual whiteboard tools features in a virtual classroom with a group mean response of 2.26 which is below the criterion value of 3.50. The supporting hypothesis also revealed there was no significant difference in the mean response of Business Education lecturers and Information and Communication Technology experts in Colleges of Education on the lecturers' level of proficiency in the use of virtual whiteboard tools features in a virtual classroom in Colleges of Education in North East Nigeria. The findings are in agreement with [3], [5], [4], and [16] who in their separate submission revealed that the virtual classroom is made up of various components and features. It is expected that all teachers are conversant with the use of the tools in the virtual classroom in other to make teaching and learning meaningful.

Conclusion

The virtual environment is another option to in-class face-to-face teaching and learning processes that educators can use now that in-class activities are progressively going out of style and shifting online. A virtual classroom is a classroom that is electronically driven and encourages self-directed and self-regulated learning. Learners can access course materials in a virtual classroom. It also provides a live, contextual, and interactive environment. A virtual classroom is essentially an online classroom setting in which learners and teachers actively participate in synchronous educational encounters. A virtual classroom, like a face-to-face teaching and learning enterprise, will require both lecturers and students to log into the classroom at the same time. Although the use of virtual classrooms is new to Nigerian educators especially here in the northeastern states, the virtual classroom fulfill the same goal as traditional classroom instruction. It allows students to interact with the information, the lecturer, their classmates, and the subject matter. Virtual environments offer the ability to boost students' interest and motivation in learning, hence improving lecturers' efficiency. Based on the findings of this study, it is determined that business education lecturers in colleges of education lack expertise in using the available participant panel feature in a virtual classroom. The survey also indicated that lecturers of Business Education in Colleges of Education were not proficient in the use of virtual classroom video play features, nor were they proficient in the use of virtual whiteboard tools features.

Recommendations

The administrative heads of Collages of Education should organize an in-house workshop for lecturers in order for them to acquire the required proficiency in the use of available participant panel features in a virtual classroom. Video experts should be consulted to teach lecturers how to improve the content of their videos that will be used for teaching and learning in a virtual classroom in order to enhance the lecturer's proficiency in the use of video play features of the virtual classroom. Lecturers should engage in self-development activities in order for them to be acquitted with themselves virtual whiteboard tools features for better utilization of whiteboard tools features in a virtual classroom.

Conflict of Interest

The authors declare that there is no conflict of interest.

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