
**COMPUTER AIDED INSTRUCTION (CAI) SKILL NEEDS OF
LECTURERS FOR TEACHING BUSINESS EDUCATION COURSES IN
COLLEGES OF EDUCATION IN ENUGU STATE, NIGERIA**

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Abstract

This study determined computer aided instruction (CAI) skill needs of lecturers for teaching Business Education courses in Colleges of Education in Enugu State. The study adopted survey research design and was conducted in Enugu State. Two research questions and two hypotheses guided the study. The population for the study was 91 Business Education lecturers in Colleges of Education in Enugu State. A validated and structured questionnaire containing 31 items was used to elicit responses from the respondents. Cronbach Alpha reliability method was used to determine the internal consistency of the instrument which yielded reliability coefficients of 0.78, 0.64 for perceived importance and 0.78, 0.89 for skills possession for the clusters. Data analysis was done using mean and need assessment index for research questions while ANOVA statistic was used to test the null hypotheses at 0.05 level of significance. Findings revealed that Business Education lecturers in colleges of education need skill improvements in video conferencing such as: Zoom, Google Meet and Microsoft Teams; and PowerPoint. The findings of this study among others have implications on National Commission for Colleges of Education (NCCE), as it would enable them make adequate provisions for computer aided instruction (CAI) facilities in Colleges of Education. This study concluded that if CAI facilities are made available, it will help the lecturers to teach business education courses efficiently. It was recommended among others that lecturers should embrace and use modern technologies such as Zoom, Google Meet, Microsoft Teams, and PowerPoint in teaching business education courses in colleges of education.

Keywords: College of Education, Business Education Lecturers, Computer Aided Instruction, Videoconferencing, PowerPoint.

Introduction

In the world today, business education has greatly created an impact in strategic areas of human endeavours such as office management, marketing, accounting, business management, and many others. It is a discipline that prepares individuals to be well-versed in the principles, practices, and dynamics of the business world, as well as equip students with the knowledge, skills, and attitudes necessary to excel in business-related roles, fostering their ability to contribute to the success and growth of organisations,

entrepreneurial ventures, and the overall economy. According to Rotua (2017), business education is a type of education that equips one with facts, skill acquisition, the development of abilities, finding solutions to problems, and business attitudes useful for success in business situations.

The primary goal of business education is to prepare competent, skilled, and dynamic business educators, office administrators, and businessmen and women who can compete effectively in the workplace. Business education courses are taught in colleges of education, but not with the use of computer aided instruction technologies like video conferencing technologies like Zoom, Google Meet, Microsoft Teams, Skype, PowerPoint, spreadsheets, and so on (Kristof, 2020). Johnson in Ugbe (2018) was also of the view that modern technologies like computer aided instruction can be useful in solving problems, such that a business education lecturer would achieve the goal of teaching using technological resources like projectors, computers, recorders, and electronic whiteboards, to mention but a few needed for Computer-Aided Instruction. Business education is closely connected to the rapidly evolving field of technology. Computer-aided instruction plays a vital role in enhancing business education by leveraging technology, promoting engagement and interactivity, providing individualised learning experiences, facilitating collaboration, and aligning teaching with the practical demands of the business world.

Computer-Aided Instruction (CAI) refers to the utilization of computer technology to enhance and support the process of teaching and learning. Computer aided instruction, as defined by Ajelabi in Agboh (2015), refers to an automated instructional method that utilises computers to deliver information to a learner through interaction. CAI is student-centred and activity-oriented, and is often used by teachers to develop a positive learning environment through motivational practices. Therefore, business education lecturers need to be familiar with the use of CAI when teaching classes like office technology, management, marketing, and accounting (Anioke, in Rotua, 2017). As a result, lecturers should be prepared to use computer-aided instruction in order to ensure that business education is delivered efficiently. According to Kristof (2020), the most popular applications of CAI are video conferencing, such as Zoom, Google Meet, Microsoft Teams, Skype, and Google Hangouts. Another application of CAI is Powerpoint.

Video conferencing is a communication technology that allows individuals or groups to engage in real-time audio and visual communication with others located in different physical locations. As described by Kristof (2000), video conferencing technology allows users to communicate live over video and audio streams via the network regardless of where they are physically located. This technology is used to facilitate face-to-face discussions between users in different locations without requiring them to move to the same place (Kagan, 2022). With videoconferencing technology, three or more participants can communicate as if they were sitting next to each other in a virtual conference room thanks to multipoint video conferencing (Isaac & Omame, 2020). There are several video conferencing technologies and platforms available today that offer a range of features and functionalities. However, this study focused on only three of these technologies which are Zoom, Google Meet, and Microsoft Teams. These three were focused on because they are specially designed for business and team collaboration.

Zoom is a popular video conferencing platform that allows individuals and groups to host virtual meetings, webinars, and conferences. According to Archibald,

Ambasgtsheer, Casey, and Lawless (2019), Zoom is a collaborative cloud-based videoconferencing service that provides online meetings, group messaging, and secure session recording. The system offers a user-friendly design that works with tablets, smartphones, and desktop computers. A class can typically be used as a Zoom meeting point when setting up Zoom meetings. Participants who wish to join a meeting must have the meeting ID in order to do so. A host is responsible for scheduling one-time or recurring Zoom meetings. The host notifies the attendees of a meeting by sending them a Zoom invitation with the join link and other information.

Google Meet, on the other hand, is Google's video conferencing software and communication software that connects teachers with students for online lectures. Users can share their screens on Google Meet. It offers the option to share either the entire screen or just a particular tab (Singh & Awasthi, 2020). A business education lecturer who possesses a Google account has the ability to produce a video task with duration of 60 minutes without any cost, catering to a maximum of 100 students. The lecturer can then share the link or meeting ID with the students, ensuring that the link remains accessible throughout the entire teaching and learning experience (Veres, Magdas, Ilovan, Dulama & Ursu, 2020). Another videoconferencing tool a business education lecturer can use to teach business education courses via virtual means is Microsoft Teams.

Microsoft Teams is an integrated platform for communication and collaboration that brings together ongoing workplace messaging, video meetings, file storage (including file manipulation), and the integration of various applications. The feature, which includes add-ons to enable proper connection with non-Microsoft products, is an essential component of the Office 365 office software suite (Chin in Kristof, 2020). It has a video call feature with a maximum capacity of 80 users. Along with file collaboration and storage, it also has a calendar application with reminders (Clopper, Baccei & Sel, 2020). PowerPoint is another popular application of CAI.

PowerPoint refers to a widely used software application designed to help users create visually appealing and engaging slide-based presentations. The PowerPoint programme, according to Ohakwe (2008), is a computer programme that enables users to produce slides containing recordings, narrations, transitions, and additional functionalities to effectively deliver information during presentations. It allows users to create media-rich presentations composed of a series of slides. Users of the software can create anything, from simple slide shows to intricate presentations. Although it can also be used for normal or educational purposes, it is frequently used to create business presentations. Video conferencing and PowerPoint applications of CAI enhance the teaching-learning process.

Given the widespread recognition of the beneficial role of integrating contemporary technologies in the educational process, it is imperative for business education lecturers to make concerted efforts in integrating computer aided pedagogy into their teaching methodologies. By doing so, they can harness the potential of these technologies to enhance and enrich students' learning experiences and comprehension levels. However, the incorporation of these computer aided instructions is dependent on the possession of the necessary skills for the use of the different technologies. Skill needs are the physical or mental power required to move from the known to the unknown. It can also be referred to as the ability to identify areas of specialisation relevant for optimal efficiency in any given situation. In this study, the business education lecturers' skill needs

on CAI are assessed to determine the skill gap that exists for the purpose of mounting skill training schemes.

Statement of the problem

The rapid advancement of technology has revolutionised the field of education, emphasising the need for educators to adapt to new instructional methods. In Enugu State, specifically in colleges of education, lecturers responsible for teaching business education courses face a significant challenge in acquiring and utilising computer-aided instruction (CAI) skills effectively. The problem lies in the lack of comprehensive understanding and proficiency in CAI among lecturers, hindering their ability to employ modern teaching techniques that can enhance student engagement, comprehension, and overall learning outcomes. As a result, there is a potential gap between the skills required to effectively integrate CAI into business education courses and the existing competencies possessed by lecturers in Enugu State colleges of education.

This problem is further exacerbated by the absence of adequate training programs, professional development opportunities, and institutional support systems that could facilitate the acquisition and utilization of CAI skills. The lack of awareness regarding the benefits and practical implementation of CAI among lecturers also contributes to the underutilization of these technological tools in the classroom. Without addressing the skill needs of lecturers, the quality of business education courses delivered in colleges of education in Enugu State will suffer. Hence the need to carry out research on the CAI skill needs of lecturers for teaching business education courses in colleges of education in Enugu State.

Purpose of the study

The general purpose of the study was to determine the computer aided instruction skill needs of business education lecturers in colleges of education in Enugu State. Specifically, the study determined:

1. Videoconferencing skill needs of lecturers for teaching business education courses in colleges of education in Enugu State.
2. PowerPoint skill needs of lecturers for teaching business education courses in colleges of education in Enugu State

Research questions

The following research questions guided the study:

1. What are the video conferencing skill needs of lecturers for teaching business education courses in colleges of education?
2. What are the PowerPoint skill needs of lecturers for teaching business education courses in colleges of education?

Hypotheses

H₀₁: There is no significant difference in the mean responses of lecturers in private, state, and federal colleges of education in Enugu State on the video conferencing skill needs of lecturers for teaching business education courses in colleges of education in Enugu State.

H₀₂: There is no significant difference in the mean responses of lecturers in private, state, and federal colleges of education in Enugu State on the PowerPoint skill needs of lecturers for teaching business education courses in colleges of education in Enugu State.

Methodology

Survey research design was adopted for this study. The study was carried out in Enugu State. The population of this study comprised 91 lecturers from colleges of education in Enugu State. The population was made up of 22 lecturers from federal colleges of education, 27 from state colleges of education, and 42 from private colleges of education. There was no sampling as the entire population was used for the study.

A 31-item questionnaire titled Computer Aided Instruction Skill Needs of Lecturers Questionnaire (CAISNLQ) was used for data collection for the study. The instrument was divided into two parts, 1 and 2. Part 1 contained items on the respondents' personal data, while Part 2 was divided into two clusters, A and B. Cluster A contained 22 items relating to video conferencing skills, while cluster B contained 9 items relating to PowerPoint skills. The questionnaire items were structured in a 4-point bi-polar response scale of Very Highly Important (VHI), Highly Important (HI), Less Important (LI), and Very Less Important (VLI) for perceived importance with the corresponding values of 4, 3, 2, and 1 respectively, and Very Highly Possessed (VHP), Highly Possessed (HP), Less Possessed (LP), and Very Less Possessed (VLP) for skill possession with the corresponding values of 4, 3, 2, and 1 respectively.

The structured questionnaire was subjected to face-validation by three research experts from the Department of Business Education at the University of Nigeria, Nsukka. Cronbach Alpha reliability test was used to determine the internal consistency of the instrument, which yielded reliability coefficients of 0.78 and 0.64 for perceived importance and 0.78 and 0.89 for skill possession for clusters A and B, respectively. Copies of the questionnaire were administered to the respondents with the help of research assistants.

The data collected were analysed using mean and need assessment indexes for the level of importance of the skills and the level of possession of the skills. In order to answer the research questions, a need assessment index was determined using the formula:

$$PG = \bar{X}_r - \bar{X}_p$$

Where PG = Performance Gap

\bar{X}_r = Mean of the level of importance category

\bar{X}_p = Mean of the level of possession category

In taking decision, the level of performance gap (PG) with a positive (+) value indicated that skill needs exist because the mean level of importance is higher than the mean level of possession. When the value of the performance gap (PG) is negative (-) or zero (0), the value indicates that skill improvement is not needed because the mean level of importance of the item is less than or equal to the level of possession.

The hypotheses for the study were tested at 0.05 level of significance using ANOVA statistical tool. ANOVA was used because the colleges of education involved are federal, state, and private colleges of education. While taking decisions for the hypotheses, where the p-value was greater than or equal to 0.05 level of significance, the null

hypothesis was accepted, but where the p-value was less than 0.05 level of significance, the null was withheld.

Results

The results of the study were presented in line with the research questions and hypotheses. They are presented in Tables 1-6.

Research question One

What are the video conferencing skill needs of lecturers for teaching Business Education courses in Colleges of Education?

Table 1: *Performance Gap Analysis of mean ratings of the respondents on the video conferencing skill needs of Business Education lecturers in Colleges of Education*

S/ N	Item Statement	\bar{X}_r	\bar{X}_p	PG ($\bar{X}_r - \bar{X}_p$)	Rem.
Ability to:					
Zoom					
1	Download zoom application	3.32	2.65	0.67	IN
2	Set a random meeting ID	3.72	1.97	1.75	IN
3	Prevent participants from screen sharing during meeting	2.90	2.17	0.73	IN
4	Lock the meeting	2.83	2.11	0.72	IN
5	Mute and unmute participants	3.01	2.31	0.7	IN
6	Set users to mute when entering the meeting	3.05	2.27	0.78	IN
7	Control chat access	3.38	1.93	1.45	IN
Google Meet					
8	Create a google account	3.39	1.97	1.42	IN
9	Download google meet app	2.93	2.26	0.67	IN
10	Schedule a google meet	3.08	1.84	1.24	IN
11	Send an invitation to guests	3.09	1.75	1.34	IN
12	Conduct a meeting	2.97	1.98	0.99	IN
13	Turn off microphone and camera	2.82	1.93	0.89	IN
14	Send a chat message	2.92	2.30	0.62	IN
15	Record a meeting	2.93	2.11	0.82	IN
Microsoft Teams					
16	Download Microsoft teams	3.55	2.11	1.44	IN
17	Schedule a meeting	3.08	2.17	0.91	IN
18	Join with a phone call	2.97	2.17	0.8	IN
19	Choose the appropriate channel	3.30	2.08	1.22	IN
20	Use 3x3 grid	3.25	2.16	1.09	IN
21	Share the screen with students	3.52	2.35	1.17	IN
22	Set norms for meeting chat	3.31	2.27	1.04	IN
Cluster Mean		3.15	2.13	1.02	IN

Key: \bar{X}_r = Mean of the level of importance category, \bar{X}_p = Mean of the level of possession category, PG= Performance Gap, IN= Improvement Needed.

From Table 1 above, all twenty-two suggested skill items for video conferencing had a positive performance gap, which ranged from 0.62 to 1.75. This indicated that business education lecturers in colleges of education needed skill improvement in the seven Zoom skills, eight Google Meet skills, and seven Microsoft Teams skills. Similarly, the overall performance gap of 1.02 for all the items indicated that skill improvement is needed on the video conferencing skills.

Research question two: *What are the PowerPoint skill needs of lecturers for teaching Business Education courses in Colleges of Education?*

Table 2: *Performance Gap Analysis of mean ratings of the respondents on the PowerPoint skill needs of Business Education lecturers in Colleges of Education*

S/ N	Item Statement	\bar{X}_r	\bar{X}_p	PG ($\bar{X}_r - \bar{X}_p$)	Rem.
	Ability to:				
1	Design a linear multi-media or hypermedia presentation	3.48	2.66	0.82	IN
2	Produce electronic slides in a presentation.	3.26	2.65	0.61	IN
3	Add new slides	3.28	2.39	0.89	IN
4	Use good design features	3.05	2.18	0.87	IN
5	Insert graphics	3.24	2.09	1.15	IN
6	Change slides colour	3.23	2.25	0.98	IN
7	Save to USB	3.00	2.16	0.84	IN
8	Add links to other slides within presentation	3.18	2.32	0.86	IN
9	Select a background style	3.06	2.24	0.82	IN
	Cluster Mean	3.20	2.33	0.87	IN

Key: \bar{X}_r = Mean of the level of importance category, \bar{X}_p = Mean of the level of possession category, PG= Performance Gap, IN= Improvement Needed.

From Table 2 above, all nine suggested skill items on PowerPoint had a positive performance gap (PG), and it ranged from 0.61 to 1.15. This indicated that business education lecturers in colleges of education needed skill improvement in the nine PowerPoint skills. Similarly, the overall performance gap of 0.87 for all the items indicates that skill improvement is needed on the PowerPoint skills.

Hypothesis one: *There is no significant difference in the mean responses of lecturers in private, state and federal Colleges of Education in Enugu State, on video conferencing skill needs of lecturers for teaching business education courses in Colleges of Education in Enugu State.*

Table 3: Analysis of Variance (ANOVA) of grand mean responses of lecturers in private, state and federal colleges of education in Enugu State, on video conferencing skill needs of lecturers in Colleges of Education in Enugu State

Independent Variables	N	Mean		Sum of Squares	Df	Mean Square	F	Sig.	Rem .
Federal	20	3.01	Between Groups	1.229	2	.614	4.952	.009	S
State	27	3.32	Within Groups	10.544	85	.124			
Private	41	3.11							
Total	88	3.15	Total	11.773	87				

Key: S = Significant, NS = Not Significant.

The analysis of the data presented in Table 3 above shows $F(2, 87) = 4.952$ and $P = 0.009 < 0.05$. With a significant P value (0.009), which is less than the 0.05 alpha value at which it has been tested; therefore, the null hypothesis was rejected and the alternative upheld. With this result, there is a significant difference in the mean responses of lecturers in private, state, and federal colleges of education in Enugu State on the video conferencing skill needs of lecturers in colleges of education in Enugu State.

Table 4: Post-hoc analysis of the direction of significant difference in the mean ratings of lecturers in private, state and federal colleges of education in Enugu State, on video conferencing skill needs of lecturers in Colleges of Education in Enugu State

(I) Category		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Federal	State	-.30968*	.10391	.015	-.5686	-.0508
	Private	-.10183	.09606	.572	-.3412	.1375
State	Federal	.30968*	.10391	.015	.0508	.5686
	Private	.20785	.08729	.064	-.0096	.4253
Private	Federal	.10183	.09606	.572	-.1375	.3412
	State	-.20785	.08729	.064	-.4253	.0096

*. The mean difference is significant at the 0.05 level.

Post-hoc analysis with Scheffe test of multiple comparisons in Table 4 was used to show the direction of the significant difference in the mean ratings of the responses of the three groups of respondents on the grand mean of Table 1. The result of the post-hoc revealed that there was a significant difference in the mean responses of lecturers in federal and state colleges of education, while there was no significant difference in the mean responses of lecturers in federal and private colleges of education in Enugu State.

Hypotheses two: *There is no significant difference in the mean responses of lecturers in private, state and federal colleges of education in Enugu State, on PowerPoint skill needs of lecturers for teaching business education courses in Colleges of Education in Enugu State*

Table 5: Analysis of Variance (ANOVA) of grand mean responses of lecturers in private, state and federal colleges of education in Enugu State, on video conferencing skill needs of lecturers in Colleges of Education in Enugu State

Independent Variables	N	Mean		Sum of Squares	Df	Mean Square	F	Sig.	Rem.
Federal	20	3.05	Between Groups	1.750	2	.875	4.034	.021	S
State	27	3.40	Within Groups	18.441	85	.217			
Private	41	3.13							
Total	88	3.20	Total	20.191	87				

Key: S = Significant, NS = Not Significant.

The analysis of the data presented in Table 5 above shows $F(2, 87) = 4.034$ and $P = 0.021 < 0.05$. With a significant P value (0.021), which is less than the 0.05 alpha values at which it has been tested; therefore, the null hypothesis was rejected and the alternative upheld. With this result, there is a significant difference in the mean responses of lecturers in private, state, and federal colleges of education in Enugu State on the PowerPoint skill needs of lecturers in colleges of education in Enugu State.

Table 6: Post-hoc analysis of the direction of significant difference in the mean ratings of lecturers in private, state and federal colleges of education in Enugu State, on PowerPoint skill needs of lecturers in Colleges of Education in Enugu State

(I) Category		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Federal	State	-.35329*	.13741	.041	-.6957	-.0109
	Private	-.08279	.12704	.809	-.3993	.2337
State	Federal	.35329*	.13741	.041	.0109	.6957
	Private	.27050	.11544	.070	-.0171	.5581
Private	Federal	.08279	.12704	.809	-.2337	.3993
	State	-.27050	.11544	.070	-.5581	.0171

*. The mean difference is significant at the 0.05 level.

Post-hoc analysis with Scheffe test of multiple comparisons in Table 6 was used to show the direction of the significant difference in the mean ratings of the responses of the three groups of respondents on the grand mean of Table 2. The result of the post-hoc revealed that there was a significant difference in the mean responses of lecturers in federal and state colleges of education, while there was no significant difference in the mean responses of lecturers in federal and private colleges of education in Enugu State.

Discussion of findings

The study found that business education lecturers in colleges of education need skill improvement in Zoom, Google Meet, and Microsoft Teams. The skills include the

ability to: download Zoom application; set a random meeting ID; prevent participants from screen sharing during meetings; schedule a Google Meet; send an invitation to guests; conduct a meeting; send a chat message; record a meeting, among others. In addition, the study found a significant difference in the mean responses of lecturers in private, state, and federal colleges of education in Enugu State on the video conferencing skill needs of lecturers in colleges of education in Enugu State. The findings are in line with Archibald et al. (2019), who stated that a key advantage of Zoom is its ability to securely record and store sessions without recourse to third-party software. The host informs the participants of a meeting by sending them a Zoom invite, including the meeting's join link and details. Additionally, the Google Meet video conferencing platform offers several facilities for teaching: sharing teaching materials with pupils or students, sharing screens, using a virtual whiteboard, accessing documents, computer or internet educational clips, and sharing and editing word files (Google in Kristóf, 2020). Furthermore, supporting the finding, Thorp-Lancaster (2018) opined that within the Teams application, lecturers and students can set up channels. Users can reply to messages with text, images, GIFs, or even custom memes.

The study also found that Business Education lecturer in Colleges of Education need skill improvement in PowerPoint skills. The skills include the ability to: Design a linear multi-media or hypermedia presentation; Produce electronic slides in a presentation; Add new slides; among others. The study also found a significant difference in the mean responses of lecturers in private, state and federal colleges of education in Enugu State, on PowerPoint skill needs of lecturers in Colleges of Education in Enugu State. Austin (2010) in support to the finding opined that most PowerPoint presentations are created from a template, which includes a background colour or image, a standard font, and a choice of several slide layouts. Additionally, according to Ezech (2018), some of the capabilities of PowerPoint include the following: choosing, using, and modifying a template; designing and producing a linear multimedia or hypermedia presentation; designing and producing a non-linear multimedia or hypermedia presentation; creating a presentation outline; and producing electronic slides in a presentation; define or edit the colour scheme; arrange the slides; add appropriate transitions; make use of good design elements; add graphics, sounds, and/or video; make use of appropriate navigation; and correctly use the terms linear, non-linear, multimedia, and hypermedia.

Conclusion

The purpose of the study was to determine the computer aided instruction skill needs of business education lecturers in colleges of education in Enugu State. Based on the findings of the study, it was concluded that improvement is needed in the areas of videoconferencing (Zoom, Google Meet, and Microsoft Teams) skills and PowerPoint skills of lecturers of business education in colleges of education in Enugu State. The result implies that if lecturers and students are encouraged and the CAI facilities are made available, the lecturers would go a long way towards acquiring more skills to teach business education courses, and the students would be subjected to making use of the CAI facilities and acquiring skills themselves.

Recommendations

Based on the findings of the study, the following recommendations are being made:

1. Lecturers should embrace modern technology such as Zoom, Google Meet, Microsoft Teams, Skype, and PowerPoint, which would enable them to align with the modern trends in education.
2. Workshops and seminars should be organised by the National Commission for Colleges of Education (NCCE) in collaboration with the Ministry of Education to enlighten institution administrators on the need to organise retraining programmes for the lecturers on a regular basis so as to assist them in developing their desired skills required for designing standard CAI packages for teaching and learning in colleges of education in Enugu State and beyond.
3. NCCE should also initiate policy actions that would stimulate lecturers to participate in professional development programmes on a yearly basis to enable them to acquire the relevant skills needed to improve CAI packages effectively and efficiently.

References

- Agboh, C. (2015). Effects of computer assisted instructional technique on students' achievement in financial accounting in Colleges of Education in Southeast Nigeria. *Research Journal of Finance and Accounting*, 6(20), 31-38.
- Archibald, M., Ambagtsheer, R., Casey, G., & Lawless, M. (2019). Using Zoom videoconferencing for qualitative data collection: perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods* 18, 1-8. <https://doi.org/10.1177/1609406919874596>
- Austin, D. (2009). *Beginnings of PowerPoint*. Retrieved May 21, 2023 from <https://web.archive.org/web/20141112105359/http://archive.computerhistory.org/resources/access/text/2012/06/102745695-01-acc.pdf>
- Clopper, A., Beccei, E., & Sel, T. (2020). *An evaluation of Zoom and Microsoft Teams Videoconferencing Software with Network Packet Loss and Latency Software with Network Packet Loss and Latency*. Retrieved from: <https://digitalcommons.wpi.edu/iqp-all/5687>.
- Ezeh, P. (2018). Computer skill needs of office technology and management lecturers in polytechnics in north central States of Nigeria. Department of Business education. Faculty of vocational education. University of Nigeria Nsukka.
- Isaac, A., & Oname, I. (2020). Application of social media and videoconferencing in smart library services. *Library Philosophy and Practice*, 1, 1-13.
- Kagan, J. (2022). *Videoconferencing: How it works, how to use it, top platforms*. Retrieved May 21, 2023 from <https://www.investopedia.com/terms/v/video-conferencing.asp>
- Kristóf, Z. (2020). International trends of remote teaching ordered in light of the Coronavirus (COVID-19) and its most popular video conferencing applications that implement communication. *Central European Journal of Educational Research*, 2(2), 84-92.
- Ohakwe, S. (2008). ICT PowerPoint presentation sub-skills required by business educators to reform the delivery system. *Business Education Journal*: 6(2), 96-111.

- Rotua, A. (2017). Strategies for improving teachers' quality in business education programme in Nigerian colleges of education. *International Journal of Innovative Education Research*, 5(2), 16-22.
- Singh, R., & Awasthi, S. (2020). Updated comparative analysis on video conferencing platforms- Zoom, Google Meet, Microsoft Teams, WebEx Teams and GoToMeetings. *EasyChair Preprint*, 4026, 1-9.
- Thorp-Lancaster, D. (2018). *Microsoft teams for education celebrates first year with batch of new features*. Windows Central. <https://www.windowcentral.com/microsoft-teams-education-celebrates-first-year-batch-new-features>.
- Ugbe, A. (2018). Availability of teaching facilities in business education departments in colleges of education North-West Nigeria. *Journal of Education and Practice*, 9(36), 21-27.
- Veres, S., Magdas, I., Ilovan, O., Dulama, M., & Ursu, C. (2020). Valorization of educational platforms in teaching-learning-evaluation in Romania. Comparative study. In *Proceedings of the 15th International Conference on Virtual Learning* (pp. 86-93).