

Research Article

Awareness and utilization of zoom application for learning among pre-services teachers in public colleges of education in Kwara State, Nigeria

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Abstract

This study investigated pre-service teachers' awareness and utilization of the Zoom application for instructional purposes in three Colleges of Education in Kwara State, Nigeria. Zoom, a cloud-based communication platform, enables interactive learning through video, audio, and chat across multiple devices. A descriptive survey design was adopted, with a sample of 263 pre-service teachers (139 males and 124 females) selected through stratified random sampling. Data were collected using a structured questionnaire, which was validated by experts in educational technology and achieved a reliability coefficient of 0.82 using Cronbach's alpha. Descriptive statistics (frequency counts, percentages, and mean scores) were employed to summarize responses, while inferential statistics (independent samples t-test) were used to examine gender differences in awareness and utilization levels. Findings revealed that pre-service teachers demonstrated low awareness and limited utilization of Zoom for learning activities. The analysis further indicated no statistically significant difference in awareness levels between male and female respondents ($p > 0.05$). The study concluded that inadequate exposure and insufficient institutional support hinder effective integration of Zoom into teaching and learning. It recommends that government and educational authorities strengthen ICT integration by providing digital infrastructure, capacity-building programs, and an enabling environment to enhance virtual learning engagement in Colleges of Education.

Keywords: Awareness, Utilization, Zoom App, Learning, Pre-service Teachers, Education

1. Introduction

The teaching and learning processes in higher education around the world have been profoundly altered by the use of information and communication technology (ICT). These days, digital technologies are essential for enabling communication, teamwork, and access to educational materials outside of the conventional classroom setting. During the COVID-19 epidemic, when many institutions were forced to switch from in-person instruction to remote learning platforms in order to maintain academic activities, the rapid growth of online learning became more apparent. In order to facilitate synchronous and asynchronous learning, higher education institutions have progressively embraced a variety of digital platforms, including Zoom, Microsoft Teams, and Google Classroom. Institutions are now able to provide students flexible learning options while maintaining instructional continuity because of these technology advancements (Christian, Onyema, & Akiti, 2019; Tomaro,

2018; Hamzat, 2025).

Higher education institutions have been prompted to incorporate digital platforms that provide both synchronous and asynchronous instructional approaches due to the increasing demand for flexible learning options. The Zoom app, which offers a cloud-based video conferencing system that permits real-time contact between instructors and students, is one of the most popular platforms for synchronous online learning. Zoom facilitates a number of interactive elements that improve instruction in virtual settings, such as screen sharing, breakout rooms, polls, chat capabilities, and collaborative file sharing. These tools enable teachers to provide lectures, set up group discussions, and lead cooperative exercises that mimic classroom communication. According to recent research, when interactive features are used effectively in online classes, synchronous Zoom-based learning can enhance students'

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understanding, engagement, and psychological comfort (Huey, 2024).

Improvements in student engagement and classroom interaction have also been associated with Zoom's growing use in education. According to research, Zoom's virtual meetings and interactive discussion capabilities help students and lecturers communicate and learn together (Siregar, Wahyuni, & Hutabarat, 2023). Studies have found that students generally have favorable opinions of the platform as a learning tool and believe it to be useful for participation and communication in online courses (Siregar, Wahyuni, & Hutabarat, 2023; Lie, Anwar, & Widiyati, 2023). Additionally, research indicates that when Zoom-based training encourages active contact between instructors and students during online sessions, it may improve students' motivation (Artanti, Nurlitasari, & Usman, 2025).

Despite the educational advantages of Zoom technology, there is still a lack of knowledge and effective use of the platform in many educational contexts. The degree to which instructors and students are aware of the characteristics, accessibility, and possible advantages of using digital learning resources to enhance instructional activities is referred to as awareness. Studies carried out at higher education institutions have shown that, despite the fact that many instructors and students are aware of Zoom technology, its use for teaching is frequently restricted because of a number of issues. For example, a study conducted among college students revealed that while they were highly aware of Zoom technology, they actually used it very little for academic purposes. This was primarily because of problems like expensive internet and poor technology infrastructure (Priscilla, Oboite & James, 2023). Another research conducted on lecturers at education colleges revealed that while most educators were aware of Zoom technologies, their use in the classroom remained relatively low, highlighting the need for institutional support and training (Enemuo & Muogbo, 2023).

The efficient use of Zoom applications in classroom interaction is influenced by a number of factors, including digital literacy, institutional support, and availability to dependable internet connections, in addition to infrastructure problems. According to Hamzat (2024), students' adoption and efficient use of online learning platforms are greatly influenced by their degree of awareness, perceived ease of use, and self-efficacy. Therefore, increasing the efficacy of technology-supported classroom interaction in higher education requires an understanding of students' awareness and use of Zoom apps. Analyzing these elements can offer insightful information

on how digital platforms might be more effectively incorporated into teaching methods to improve communication, collaborative learning, and overall academic results.

The following research questions were answered;

- i. What is the Pre-service teachers' awareness level of Zoom App for Education in Kwara State Colleges of Education?
- ii. What is the Pre-service teachers' utilization level of Zoom App for Education in Kwara State Colleges of Education?

Based on research questions above, the following null hypotheses were tested in this study.

H₀₁: There is no significant difference between male and female Pre-service teachers' awareness level of Zoom App for Education.

H₀₂: There is no significant difference among different ages of Pre-service teachers' utilization level of Zoom App for Education.

2. Methodology

A descriptive research design employing the survey method was adopted for this study to examine Pre-service Teachers' Awareness and Utilization of the Zoom Application for Learning in the three Colleges of Education in Kwara State, Nigeria. The study population comprised all pre-service teachers enrolled in these institutions, namely: Kwara State College of Education, Ilorin; Kwara State College of Education (Technical), Lafiagi; and Kwara State College of Education, Oro. A total of 263 pre-service teachers participated in the study, consisting of 139 males and 124 females, selected through simple random sampling. Data were collected using a researcher-designed questionnaire titled Pre-service Teachers' Awareness and Utilization of Zoom Application Questionnaire (PTAUZAQ). The instrument was subjected to content and face validation by two senior lecturers in the Department of Educational Technology, Imam Hamzat College of Education, Ilorin to ensure its suitability and clarity. Descriptive statistics such as mean and percentage were used to answer Research Questions 1 and 2, while Hypotheses 1 and 2 were tested using Independent Samples t-test and Pearson Chi-square at 0.05 level of significance.

3. Results

The analysis and results obtained from the data collected from respondents based on research questions and research hypotheses are as follows:

Table 1 shows that male formed the highest number of the respondents with 139 (52.9%).

Table 1: Percentage of Respondents Based on Gender

Gender	No. of Respondents	Percentage (%)
Male	139	52.9
Female	124	47.1
Total	263	100.0

Table 2: Percentage of Respondents Based on Age Difference

Age Differences	Frequency	Percentage (%)
Below 17 years	66	25.1
17-20 years	107	40.7
21years and above	90	34.2
Total	263	100.0

Table 3: Pre-service Teachers 'Awareness Level of Zoom App for Education. (N= 263)

S/N	Items	Mean ($\bar{X}$)
1	Zoom App for Education is a Communication App, Interactive App, Collaborate App, Messenger APP etc.	2.23
2	Zoom App is a conferencing platform that can be used for video conferencing meetings, audio conferencing, webinars, meeting recordings, and live chat.	2.04
3	Zoom is one of the most popular video conferencing software systems on the market because of its easy-to-use feature set and affordable pricing.	2.14
4	Zoom helps consolidate communications, connect people, and collaborate better together in the boardroom, classroom, operating room, and everywhere in between.	2.43
5	Zoom App for Education is a free to download app for users.	2.57
6	Zoom App for Education requires internet connectivity	2.46
Grand Mean ($\bar{X}$)		2.31

3.1. Answer to Research Questions

3.1.1. Research Question 1

What is the Pre-service teachers' awareness level of Zoom App for Education in Kwara State Colleges of Education?

Table 2 shows the percentage distribution of respondents. Pre-service teachers of age 21yrs and above formed the highest number of the respondents with 90 (34.2%).

Table 3 reveals the Pre-service teachers' awareness level of Zoom App for Education. All the items tested in table 3 show the awareness level of the Pre-service teachers.

However, the grand mean score was 2.31. Using 2.50 as the average benchmark, it can then be inferred that Pre-service teachers' awareness level of Zoom App for Education in Kwara State Colleges of Education is low.

3.1.2. Research Question 2

What is the Pre-service teachers' utilization level of Zoom App for Education in Kwara State Colleges of Education?

Table 4: Pre-service Teachers' Utilization Level of Zoom Apps for Education. (N=263)

S /N	Items.	Mean($\bar{X}$)
1	I use my Zoom App for Education every day.	1.71
2	I use my Zoom App to attend my online class almost all the times.	1.78
3	I connect with my Zoom App through internet connectivity.	1.85
4	I always get involved in online meetings through Zoom App.	1.03
5	I do collaborate online with my colleagues on educational issues through Zoom App.	1.63
6	I do present my assignment on Zoom app mostly.	1.56
	Grand Mean ($\bar{X}$)	1.59

Table 4 reveals the students' utilization level of Zoom Apps for Education for educational purposes. All items tested yielded negative responses. However, the grand mean score was 1.59. Using 2.50 as the average benchmark, it can then be inferred that Pre-service teachers' utilization level of Zoom app for educational purposes is also low.

3.2. Testing of Hypotheses

3.2.1. Hypothesis 1

H_{01} : There is no significant difference between male and female Pre-service teachers' awareness level on the existence of Zoom Apps for Education.

To determine null hypothesis 1, independent sample t-test was carried out. The result is as shown in Table 5.

Table 5: Independent sample t-test on Pre-service teachers' awareness level on the existence of Zoom App for education based on gender

Gender	N	X	SD	df	t	Sig. (2 tailed)	Decision
Male	139	3.12	0.33	261	-0.79	0.39	Not Rejected
Female	124	3.17	0.35				
Total	263						

Table 5 shows that there was no significant difference between male and female Pre-service teachers' awareness level on the existence of Zoom App for Education. This is reflected in the result: $t(261) = -0.79$, $p > 0.05$. Thus, the hypothesis was not rejected. By implication the stated null hypothesis was established thus: There is no significant difference between male and female Pre-service teachers' awareness level on the existence of Zoom app for education base.

gender.

3.2.2. Hypothesis 1

H_{02} : There is no significant difference among different ages of students' utilization level of Zoom App for Education.

To determine null hypothesis 2, Pearson chi-square analysis was carried out. The results are as shown in table 6. a. 46 cells (75.8%) have expected count less than 5. The minimum expected count is .02.

Table 6: Pearson Chi-square analysis on significant difference among different ages of pre-service teachers' utilization level of Zoom App for Education

	Value	Df	Asymp. Sig (2 sided)	Decision
Pearson Chi-square ^a	48.674	45	0.54	Not rejected
No of Valid Cases	263			

Table 6 shows that there was no significant difference among different ages of Pre-service teachers' utilization level of Zoom App for Education. This is reflected in the result: $X(45) = 48.67$ with an associated significance level of $P = .54$, since $P > 0.05$. Thus, the hypothesis was not rejected. By implication the stated null hypothesis was established thus: There is no significant difference among different ages of Pre-service teachers' utilization level of Zoom app for Education. This indicates that students across different age groups demonstrated similar patterns in their use of the Zoom application for academic activities.

4. Discussion

According to the study's findings, pre-service instructors at Kwara State Colleges of Education are not well aware that the Zoom app is available for instructional use. There is still a lack of enough exposure to these technologies among pre-service instructors. Inadequate institutional training, poor integration of digital platforms into teacher education programs, and limited access to technology resources could all be contributing factors to the low awareness level. According to earlier research, students' adoption or use of digital learning platforms for academic purposes is mostly dependent on their level of awareness (Hamzat, 2024, Christian, Peter, & Hendrik, 2018; Wang, et al. 2009). Therefore, the low understanding found in this study may make it more difficult for pre-service teachers to effectively use Zoom applications for classroom participation.

The survey also showed that pre-service instructors used the Zoom app for instructional reasons at a low rate. This suggests that students may not always actively use digital learning platforms for academic purposes, even if they are somewhat aware of them. This result is in line with the findings of Uden and Owayid (2019), who noted that despite the fact that many students are aware of online learning platforms; their actual use for academic purposes is still quite low because of infrastructure and technology limitations. In a similar vein, Awuah (2019) pointed out that students frequently face obstacles such inadequate internet connectivity, a lack of computer proficiency, and a lack of confidence when utilizing digital technologies, which may lower their use of e-learning platforms.

The study also looked at how gender affected pre-service teachers' awareness of the Zoom App for education. The results showed that there was no discernible difference in awareness between male and female students. This indicates that pre-service teachers who are male and female have comparable understanding of Zoom's instructional potential. The outcome supports Hargittai's (2018) assertion that the initial gender disparity in internet usage and adoption of digital technologies has progressively narrowed over time. Male and female students today have comparatively equal access to digital technology thanks to the growing

availability of mobile devices and internet services. Therefore, among students in higher education, gender may no longer be a significant factor in determining awareness of online learning resources. Furthermore, the study's results showed that pre-service teachers' use of the Zoom app for learning was not significantly impacted by their age. This suggests that students in various age groups used the Zoom app for educational purposes in comparable ways.

Although previous research suggested that older students may exhibit greater adoption of mobile learning technologies due to maturity and academic experience (Faqih & Jaradat, 2021), the current findings suggest that age differences may not significantly affect students' utilization of Zoom applications within the study context. This suggests that factors other than age, such as technological accessibility, digital literacy, and institutional support, may play a more significant role in determining the extent to which students utilize digital learning platforms.

5. Conclusion

Based on the findings of this study, it can be concluded that the level of awareness and utilization of the Zoom App for educational purposes among pre-service teachers in Kwara State Colleges of Education is generally low. This suggests that although digital learning technologies such as Zoom have the potential to enhance classroom interaction and improve teaching and learning processes, their benefits cannot be fully realized if students are not adequately aware of them or do not utilize them effectively. The study also revealed that gender does not significantly influence students' awareness of Zoom technology, while age does not significantly influence its utilization for educational purposes. These findings imply that the challenges associated with the awareness and utilization of Zoom applications are more likely related to institutional, infrastructural, and technological factors rather than demographic characteristics of the students. Therefore, there is a need for educational institutions to promote greater awareness and encourage effective utilization of digital learning platforms among pre-service teachers in order to improve technology-supported classroom interaction and prepare them for modern teaching practices.

Recommendations

The following recommendations were drawn:

1. To improve pre-service teachers' awareness and expertise of digital learning platforms like Zoom for educational purposes, Kwara State's colleges of education should host training sessions, workshops, and seminars.
2. To expose pre-service teachers to technology-supported teaching techniques, educational institutions should incorporate Zoom and other online learning platforms

within their teacher education programs.

3. To facilitate the efficient use of online learning resources, government and institutional authorities should upgrade the technology infrastructure, including dependable internet connectivity and digital device access.
4. To increase students' knowledge with Zoom, instructors in colleges of education should promote its use during class activities like virtual lectures, group discussions, and collaborative learning sessions.

Abbreviations

ICT	Information and Communication Technology
COVID-19	Corona Virus Disease Identified in year 2019

Author Contributions

Yekeen Iyanda Jimoh: Conceptualization, Investigation, Validation, Writing –Review & Editing, Project Administration, Methodology.

Nusirat Bolanle Yusuf: Data Curation, Investigation, Formal Analysis, Writing - original draft, Supervision.

Saheed Olamilekan. Yahya: Administration, Methodology, Supervision.

Conflicts of Interest

The author(s) declare that they have no known competing financial interests, professional affiliations or personal relationships that could have appeared to influence the work reported in this paper.

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