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UTILIZATION OF DIGITAL TOOLS AND KNOWLEDGE SHARING PRACTICES AMONG TEACHERS IN SECONDARY SCHOOLS IN OGOJA EDUCATION ZONE, CROSS RIVER STATE.

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ABSTRACT

Effective knowledge sharing among teachers is crucial for fostering a collaborative environment, enhancing teaching practices, and improving student outcomes. However, despite its importance, many secondary schools face significant challenges in implementing robust knowledge-sharing practices. The goal of this research was to investigate the Utilization of Digital Tools and Knowledge Sharing Practices among Teachers in Secondary Schools in Ogoja Education, Cross River State. A survey research design was used in the investigation. The population was 1,074 teachers. Stratified and simple random sampling technique was used to sample 249 respondents. An instrument titled "Utilization of Digital Tools and Knowledge Sharing Practices among Teachers Questionnaire (UDTKSPTQ)" validated by three experts was used for data collection. Its reliability coefficient of .83 to .85 was established through the Cronbach alpha formula. Data analysis was conducted using Simple and Multiple Linear Regression Analysis at .05 level of significance. The findings revealed that electronic libraries and Zoom technology play a significant role in enhancing knowledge-sharing practices among teachers. The study concluded that digital tools have a statistically significant impact on knowledge-sharing practices among teachers in public secondary schools in the Ogoja Education Zone, Cross River State, Nigeria. The study contributes to existing body of knowledge by providing valuable insights into how digital tools like electronic libraries and Zoom enhance collaborative learning and continuous professional development among teachers. Through its empirical evidence, the findings might inform policy decisions and supports the integration of technology in education, contributing to the broader understanding of improving teacher effectiveness and educational outcomes through digital means. This study is not confined to secondary schools; it may be applicable to other educational systems as well.

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Keyword: Digital Tools, Electronic libraries, Zoom technology, Knowledge Sharing, Practices, Teachers**,** Secondary Schools, Education Zone

Introduction

Secondary education is a critical phase of the educational system that is expected to provide the students with the skills needed to succeed in a rapidly evolving world. Stakeholders expect secondary schools not only to educate but also to support students' moral and social development, equipping them with the necessary skills to thrive in a rapidly changing world. Upon graduation, students should be well-prepared with the knowledge and abilities required for further education or employment (Etor et al., 2019). However, these goals cannot be achieved without the vital role of teachers, whose significance in educational institutions is undeniable. Teachers are key figures responsible for imparting knowledge, fostering critical thinking, guiding moral and social growth, and preparing students for academic and professional success. They are considered the most valuable assets and essential stakeholders in Nigerian secondary education, playing a critical role in its effective operation, delivering quality education, and promoting comprehensive student development (Obona & Etete, 2019; National Policy on Education (NPE, 2013). Enhancing teaching quality, supporting professional growth, and fostering a cooperative learning environment are all positively influenced by the practice of knowledge sharing among teachers.

In the contemporary world, knowledge is seen as a critical asset for both individuals and society. Knowledge sharing is a practice that drives innovation, increases efficiency, and enhances decision-making in modern organizations. It is a key component of knowledge management, ensuring the sustainability of the organization (Abdullah & Omar, 2020). Knowledge sharing practice involves the exchange of information, skills, and expertise within an organization, which enhances overall performance. A nation's success is largely determined by how much knowledge it has acquired and its ability to share that knowledge with others (Abdullah & Omar, 2020). According to Miller and Karakowsky (2010), organizational experts may view individual knowledge as intellectual property, which can provide a competitive advantage for the organization.

In the school system, knowledge sharing practice is critical for improving teaching quality, supporting professional development, and fostering a collaborative learning environment. Knowledge sharing refers to the exchange of information, skills, and expertise to improve teaching quality, encourage professional development, and create a collaborative and supportive educational environment. This practice is crucial for fostering an innovative learning environment, enhancing teaching quality, and promoting continuous professional development. It ensures that valuable expertise and best practices are shared among educators, which, in turn, improves student outcomes by providing teachers with a variety of strategies. Furthermore, knowledge

sharing helps preserve institutional knowledge, mitigates the negative impacts of staff turnover, and strengthens the educational community. Teachers with a wealth of knowledge are invaluable assets to any school, as they can boost productivity and overall performance. However, their expertise is of limited value if not shared with others. When teachers engage in knowledge sharing, it positively impacts the school by enhancing collective knowledge and improving overall effectiveness. If these knowledgeable teachers leave without sharing their insights, the school loses valuable resources, highlighting the importance of collaborative knowledge sharing.

Despite its benefits, knowledge sharing is often seen as unnatural, as Bhatt, cited in Abdullah and Omar (2020), notes. Poor knowledge sharing practices among teachers in schools are a significant concern, manifesting in ways that hinder educational quality and professional development. For instance, Müller et al. (2020) observe that in many schools, professional development sessions are conducted in isolation, where teachers attend workshops that do not promote collaboration or idea-sharing. This issue is compounded by the tendency of teachers to rely on traditional communication methods, such as face-to-face meetings, rather than utilizing digital platforms (Huang & Chang, 2019). This reliance on outdated methods fosters a mindset of self-reliance, where teachers feel they must solve challenges independently, reducing opportunities for professional growth and collaborative problem-solving (Ertmer & Ottenbreit-Leftwich, 2013). Additionally, a lack of trust among colleagues further hampers the open exchange of ideas and the development of a supportive community among educators (Eldridge, 2018). The absence of structured initiatives, such as regular team meetings or peer observation opportunities, also makes it difficult for teachers to engage in meaningful knowledge sharing, leading to missed opportunities for professional growth (Dron & Anderson, 2014).

These issues are particularly pronounced in secondary schools in Cross River State, where poor knowledge sharing practices are evident in the lack of collaboration during professional development, underutilization of digital platforms, a lack of trust among colleagues, and the absence of formal structures for collaboration. The failure to share knowledge within the school system leads to stagnation of ideas, decreased teaching quality, and missed opportunities for professional development. This ultimately affects student outcomes, as teachers are less equipped to apply diverse and innovative teaching strategies.

Incorporating digital tools might be an effective way to address these perplexing challenges. These tools, which include software applications, platforms, and technologies, have the potential to streamline tasks and processes electronically, leading to increased efficiency and productivity. These tools can improve communication, collaboration, and productivity across various sectors, including education. Examples of digital communication tools

include platforms like Yahoo, Gmail, and Microsoft Outlook for messaging and information sharing. Additionally, tools like Google Slides, Microsoft PowerPoint, WhatsApp, Facebook, YouTube Messenger, Google Drive, Dropbox, and Canvas play a significant role in digital communication. This study specifically examines tools such as electronic libraries and Zoom technology, which can simplify and enhance knowledge sharing, support collaborative efforts, and provide training resources to improve teachers' knowledge exchange skills.

Electronic libraries and knowledge sharing

Electronic libraries, commonly known as digital libraries, are virtual collections that offer access to various digital resources, such as books, articles, journals, images, audio recordings, and videos. These libraries provide a modern alternative to conventional physical libraries, enabling users to obtain information at any time and from any location, as long as they have an internet connection. Their incorporation into educational settings can revolutionize the way teachers' access, share, and utilize knowledge, making information more widely available and accessible. Dei and Asante (2022) emphasize the importance of academic libraries, including electronic libraries, in providing continuous access to educational resources, thus facilitating ongoing learning and research across various sectors. Electronic libraries are vital for facilitating knowledge sharing among users, such as teachers, by providing platforms for storing, organizing, and distributing information. They offer the flexibility of accessing information at any time, thereby promoting continuous learning and research without the limitations of time. Sinha and Bhardwaj (2023) further highlight the role of digital libraries in knowledge management and sharing, noting their capability to provide 24/7 access to information, which supports continuous educational and professional development.

Deng (2018) suggests that Electronic Libraries provide teachers with easy access to a vast array of resources, overcoming geographical and temporal barriers. This accessibility is crucial for continuous professional development and the enhancement of teaching practices. Kim and Abbas (2016) emphasize that Electronic Libraries contain diverse resources, including e-books, academic journals, and multimedia content, which are essential for comprehensive lesson planning and execution. Park (2017) indicates that Electronic Libraries can be more cost-effective than traditional libraries, reducing the need for physical space and materials. This cost efficiency allows educational institutions to allocate resources to other critical areas. Online forums and discussion groups hosted by Electronic Libraries enable teachers to exchange ideas and best practices. Joung (2017) notes that Electronic Libraries provide platforms for teachers to collaborate and share resources.

Research has shown the practical advantages of electronic libraries in educational environments. Smith and Jones (2018) explored how electronic libraries are utilized in American secondary schools and discovered that

teachers who regularly used these resources reported enhancements in lesson quality and student engagement. Patel (2019) conducted a comparative analysis of the adoption of electronic libraries in schools in India, Kenya, and the UK, concluding that these libraries play a vital role in bridging resource disparities and facilitating equitable access to educational materials. A study by Tan and Choo (2020) in Singaporean schools revealed that teachers who interacted with electronic libraries developed more innovative teaching methods and were better prepared to address the diverse needs of their classrooms.

Despite these advantages, there are challenges related to the use of electronic libraries for knowledge sharing among teachers. Zhao (2016) identified a significant digital divide that hampers equitable access to electronic libraries, pointing out that teachers in underfunded areas may lack access to essential technology and internet services. Matthews (2017) noted that not all electronic libraries implement rigorous peer-review processes, which can result in the distribution of low-quality materials. Additionally, Nguyen (2018) indicated that not all teachers are equally inclined to utilize electronic libraries, as factors such as limited digital literacy and resistance to change can hinder the effective use of these resources.

Zoom technology and knowledge sharing

The use of Zoom technology has been instrumental in creating collaborative learning spaces for both teachers and students. Its integration into educational settings has notably transformed the way knowledge is exchanged among educators. Since the onset of the COVID-19 pandemic, the reliance on online platforms like Zoom has surged, reshaping collaboration and professional growth within the education sector. As noted by Liu and Zhang (2020), Zoom offers a valuable platform for teachers to engage in professional learning communities, exchange instructional methods, and work together on curriculum planning. The platform's synchronous communication capabilities facilitate real-time interactions, enhancing the immediacy and depth of knowledge sharing.

One of Zoom's key strengths is its ability to connect educators across different locations, enabling participation in webinars, workshops, and conferences that might have been out of reach due to geographical barriers. Gupta and Maurya (2021) highlighted that this global access to a wide range of educational resources and expert insights has significantly enriched teachers' professional expertise, leading to improved educational practices. According to Sangeeta and Tandon (2022), this has fostered a more dynamic and interactive classroom environment, empowering teachers to better meet the diverse needs of their students. The technology has greatly influenced knowledge sharing among teachers by offering a platform for real-time collaboration, virtual meetings, and professional development. Through Zoom, educators can exchange resources, ideas, and best practices within an interactive online space, improving communication and fostering a strong sense of community

among teachers, no matter where they are located.

Studies have highlighted the evolving role of digital platforms in educational settings. In a study, Altarawneh, Allahawiah, and Mbaidin (2023) investigated the influence of e-learning tools on knowledge exchange at Karak University College during Covid-19. A descriptive analytical method was used in the investigation. 200 university students were chosen at random for the study, and questionnaires were distributed to them by e-mail. In Karak University, it was discovered that system quality, service quality, module, university culture, and infrastructure all had a substantial impact on the success of e-learning systems. Edobor, Solomon, and Omwanghe (2023) in their study sought to examine first, the level of awareness of zoom technology by undergraduates in public universities in Edo State. Second, to examine the level of utilization of zoom technology by undergraduates in public universities in Edo State. A descriptive survey research design was adopted for the study. The study population was 4,987 with a sample size of 380. The data was collected using a structured survey questionnaire. Data collected were analyzed using frequency counts, percentages (%), mean and standard deviation (SD). The finding revealed that the benefits of using zoom technology were to facilitate discussions between lecturers and students and to foster students' understanding of the interrelationships of students worldwide.

In another study, Enemuo and Muogbo (2022) examined the extent of awareness and adoption of zoom technology in teaching and learning among lecturers in colleges Education in Anambra State. Three research questions guided the study. A survey research design was adopted for the study. Population of the study was 1050 lecturers with a sample size of 50 lecturers in the two Colleges of Education (one State and one Federal) in Anambra State. The research instrument was a structured 4-point scale questionnaire validated by two experts in science Education and one from measurement and evaluation. The instrument was analyzed using mean and standard deviation. The study found out that the respondents were highly aware of Zoom technologies and adopt Zoom technologies for teaching and learning to a very low extent.

Despite numerous researches on the impact of digital tools on knowledge management in education, no much has been done on the role of digital tools on knowledge sharing among teachers in. Thus, there is a need to have a narrow focus on its impact on teachers in secondary schools. Other researches have a global regional viewpoint, but this research specifically focuses on teachers in public secondary schools in Ogoja Education Zone of Cross River State, Nigeria. There is great need to know how digital tools can be utilized to promote knowledge sharing practice among teachers. This research will also help to identify gaps in the use of digital tools to enhance knowledge sharing and identify ways to improve the practice for improved collaboration among teachers.

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Statement of the problem

Effective knowledge sharing among teachers in secondary schools is essential for fostering a collaborative environment, enhancing teaching practices, and ultimately improving student outcomes. However, in Ogoja Education Zone of Cross River State, many public secondary school teachers face significant challenges in terms of effective knowledge-sharing practices. One of the primary challenges is the demanding schedules that teachers face, which include heavy teaching loads, administrative responsibilities, and extracurricular activities. These time constraints severely limit opportunities for teachers to engage in knowledge-sharing activities, leaving them isolated in their classrooms and unable to benefit from the collective experiences and insights of their colleagues.

Additionally, many teachers lack the necessary training and support to effectively participate in knowledge-sharing practices. This problem is compounded by the absence of formal mechanisms or platforms in schools that could facilitate regular and systematic knowledge sharing among teachers. In some cases, schools even cultivate a culture of competition rather than collaboration, discouraging teachers from sharing their expertise and resources. Moreover, school administrators often fail to prioritize and promote knowledge-sharing initiatives, further hindering efforts to build a collaborative teaching environment. These shortcomings are significant has contributed to diminished teaching quality, as teachers miss out on exposure to best practices and innovative teaching strategies. More worrisome is the fact that it is the students who suffer the most, as they do not receive the highest quality education possible due to the lack of collaborative efforts among their teachers.

Given the urgency of this issue, it is imperative to explore potential solutions. One promising avenue is the integration of digital tools to enhance knowledge-sharing practices among teachers these schools. This raises the need for a study to investigate whether utilization of digital tools can provide a viable solution to the challenges faced by teachers in public secondary schools in Ogoja Education Zone of Cross River State, Nigeria. Such a study could offer valuable insights into how technology might bridge the gaps in current knowledge-sharing practices and improve educational outcomes.

Purpose of the study

This main purpose of the study was to investigate utilization of digital tools and knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone Cross River State, Nigeria. Specifically, the study investigated the contribution of:

i. Electronic libraries to knowledge sharing practices among teachers.
ii. Zoom technology to knowledge sharing practices among teachers.
iii. The Joint contribution of electronic libraries and zoom technology to knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone Cross River State, Nigeria.

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Research questions

i. To what extent does electronic libraries contribute to knowledge sharing practices among teachers?
ii. What is the contribution of zoom technology to knowledge sharing practices among teachers?

Research hypotheses

i. Electronic libraries do not contribute significantly to knowledge sharing practices among teachers.
ii. Zoom technology do not contribute significantly to knowledge sharing practices among teachers.
iii. Electronic libraries and zoom technology do not have any joint significant contribution to knowledge sharing practices among teachers in public secondary schools.

Research method

The study was conducted in Ogoja Education of Cross River State using survey research design. The study population included all 1,074 teachers in 90 public secondary schools in Ogoja Education Zone (Secondary Education Board, Cross River State, 2024). The stratified sampling technique was used to group schools into five or Local Government Areas. Simple random sampling technique was then used to select 20% of teachers from each secondary school, resulting in a total sample of 249 respondents as sample for the study. Data was collected using 18 item questionnaire designed on a four-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree) titled "Utilization of Digital Tools and Knowledge Sharing Practices among Teachers Questionnaire (UDTKSPTQ)." A cover letter explaining the study preceded the questionnaire. The instrument was divided into three sections: Section A (demographic data), Section B (independent sub-variables), and Section C (knowledge sharing practices). The questionnaire items were submitted for review to three experts. One in Educational Management as well as two from Measurement and Evaluation at the University of Calabar. The instrument's reliability was established through a trial test with 50 teachers found secondary schools in Calabar Education Zone. Using the Cronbach alpha formula, a reliability coefficient ranging from .83 to .85 was obtained. The researcher and two assistants administered the questionnaire after obtaining permission from the respective school authorities. Next, the researcher sorted the collected questionnaires to ensure all items were properly answered. The questionnaires were organized according to their variable, with positively worded items scored on a 4-point scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1), and negatively worded items scored in reverse. The scores were then transferred to statistical packages for analysis. Data analysis was based on the null hypotheses guiding the study and was conducted using Simple and Multiple Linear Regression Analysis.

Presentation of Results

Research question 1: To what extent does electronic libraries contribute to knowledge sharing practices among teachers? The responses to this research question are presented in Table 1.

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TABLE 1: Mean and standard deviation of the responses on the extent of the contribution of electronic libraries to knowledge sharing practices among teachers

S/N	Items	Mean	Std. Dev	Decision
1.	I regularly use electronic libraries to access educational resources for teaching.	2.45	.94	Low
2.	Electronic libraries have made it easier for me to share knowledge and resources with my colleagues.	2.60	.80	High
3.	The use of Google Scholar has improved my ability to collaborate with other teachers.	2.61	.87	High
4.	I find that Coursera provide a wide range of materials that support my professional development.	2.61	.89	High
5.	I feel more confident in sharing digital resources with other teachers through electronic libraries.	2.42	.87	Low
6.	Electronic libraries have enhanced my ability to stay updated with the latest educational trends and research.	2.32	.93	Low
7.	I believe that electronic libraries have facilitated a culture of knowledge sharing in my school.	2.42	.93	Low
8.	The availability of electronic libraries has reduced the time it takes for me to share relevant teaching materials with my colleagues.	2.61	.87	High
	Average Mean and Std. Dev.	2.51	.89	High

The result of the analysis in Table 1 shows that items item 2, 3, 4, and 8, have mean scores above the average mean of 2.50. This implies that the respondents' level of agreement to the contribution of electronic libraries to knowledge sharing practices among teachers was high. However, items 1, 5, 6 and 7 have mean scores below the average mean of 2.50. This implies also that the respondents' level of agreement to the contribution of electronic libraries to knowledge sharing practices among teachers was low. The standard deviation scores for all the items in the cluster are within the same range, indicating that the respondents are homogeneous in their responses.

Research question 2: What is the contribution of zoom technology to knowledge sharing practices among teachers? The responses to this research question are presented in Table 2.

TABLE 2: Mean and standard deviation of the responses on the extent of the contribution of zoom technology to knowledge sharing practices among teachers.

S/N	Items	Mean	Std. Dev	Decision
1.	I regularly use Zoom to participate in virtual meetings with my colleagues.	2.57	.81	High
2.	Zoom has made it easier for me to collaborate with other teachers, regardless of our physical locations.	2.61	.89	High
3.	I find that Zoom's screen-sharing feature is effective for sharing educational resources.	2.38	.85	Low
4.	The breakout room function on Zoom has enhanced small group discussions among teachers.	2.43	.81	Low

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5.	Zoom has improved my ability to share ideas with other teachers in real time.	2.51	.89	High
6.	I feel more connected to my colleagues through the use of Zoom.	2.45	.94	Low
7.	Zoom recordings have allowed me to share key points from meetings with other teachers	2.60	.80	High
8.	I use Zoom to share best practices with teachers from different schools.	2.61	.87	High
9.	The chat feature in Zoom helps me to exchange resources during virtual meetings.	2.61	.89	High
10.	I believe that Zoom technology has significantly contributed to a more collaborative teaching environment.	2.61	.89	High
	Average Mean and Std. Dev.	2.54	.87	High

The result of the analysis in Table 2 shows that items item 1, 2, 5, and 7-10, have mean scores above the average mean of 2.50. This implies that the respondents' level of agreement to the contribution of zoom technology to knowledge sharing practices among teachers was high. However, items 3, 4 and 6 have mean scores below the average mean of 2.50. This implies that the respondents' level of agreement to the contribution of zoom technology to knowledge sharing practices among teachers was low. The standard deviation scores for all the items in the cluster are within the same range, indicating that the respondents are homogeneous in their responses.

Hypothesis one

Electronic libraries do not contribute significantly to knowledge sharing practices among teachers in public secondary schools in Ogoja Education, Cross River State, Nigeria. The two variables in this hypothesis are electronic libraries and knowledge sharing practices among teachers. Simple Linear Regression analysis was used to test the hypothesis and the result of the analysis is presented in Table 1. Table 1 showed that electronic libraries have a significant contribution to knowledge sharing practices among teachers as shown by the simple linear regression coefficient (R) of .715 and a coefficient of determination (R^2) of .509 obtained. The R^2 (R^2=.509) meant that the variable of electronic libraries contributed 50.9% of the total variance in knowledge sharing practices among teachers in Ogoja Education of Cross River State while the remaining percentage score 49.1% was predicted by other external factors not accounted for by knowledge creation. This showed that the independent variable (electronic libraries) have significant contribution to the dependent variable (knowledge sharing practices among teachers), F257.991, p (.000) <.05. Referring to the coefficients in table 1, the unstandardized coefficient for electronic libraries is .707. This meant that for every point increase in knowledge sharing practices among teachers, there is .707 increase in electronic libraries scores from the questionnaire instrument used. Based on this result, the null hypothesis which stated that electronic libraries does not contribute significantly to knowledge sharing practices among teachers in Ogoja Education of Cross River State was rejected.

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Table 1: Simple linear regression analysis showing the contribution electronic libraries to knowledge sharing practices among teachers. (N=249)

Anova[a]

Model		Sum of Squares	df	Mean Square	F	Sig.	Decision
1	Regression	1265.664	1	1265.664	257.991	.000[b]	Rejected
	Residual	1211.742	247	4.906			
	Total	2477.406	248				

*Significant p<.05; R=.715; R^2 =.511; Adj. R^2=.509

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.158	.887		5.815	.000
	Electronic libraries	.707	.044	.715	16.062	.000

a. Dependent Variable: knowledge sharing practices among teachers
b. Predictors: (Constant), Electronic libraries

Hypothesis two

Zoom technology do not contribute significantly to knowledge sharing practices among teachers in secondary schools in public secondary schools in Ogoja Education, Cross River State, Nigeria. The two variables in this hypothesis are zoom technology and knowledge sharing practices among teachers. Simple Linear Regression analysis was used to test the hypothesis and the result of the analysis is presented in Table 2. Table 2 showed that zoom technology have a significant contribution to knowledge sharing practices among teachers as shown by the simple linear regression coefficient (R) of .400 and a coefficient of determination (R^2) of .157 obtained. The R^2 (R^2=.157) meant that the variable of zoom technology contributed 15.7% of the total variance in knowledge sharing practices among teachers in Ogoja Education of Cross River State, while the remaining percentage score 84.3% was predicted by other external factors not accounted for by zoom technology. This showed that the independent variable (zoom technology) have significant contribution to the dependent variable (knowledge sharing practices among teachers), F47.175, p (.000) <.05. Referring to the coefficients in table 2, the unstandardized coefficient for zoom technology is .365. This meant that for every point increase in knowledge sharing practices among teachers, there is .365 increase in zoom technology scores from the questionnaire instrument used. Based on this result, the null hypothesis which stated that zoom technology does not contribute significantly to knowledge sharing practices among teachers in public secondary schools in Ogoja Education of Cross River State was rejected.

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Table 2: Simple linear regression analysis showing the contribution zoom technology to knowledge sharing practices among teachers (N=249)

Anova[a]

Model		Sum of Squares	df	Mean Square	F	Sig.	Decision
1	Regression	397.289	1	397.289	47.175	.000[b]	Rejected
	Residual	2080.116	247	8.422			
	Total	2477.406	248				

*Significant p<.05; R=.400; R^2 =.160; Adj. R^2=.157

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	12.117	1.051		11.528	.000
	Zoom technology	.365	.053	.400	6.868	.000

a. Dependent Variable: Knowledge sharing practices among teachers
b. Predictors: (Constant), Zoom technology

Hypothesis three

Electronic libraries and zoom technology do not have any joint significant contribution to knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone, Cross River State, Nigeria. The Predictor variables in this hypothesis are the sub-variables of digital tools which are electronic libraries and zoom technology, while the criterion variable is knowledge sharing practices among teachers. Multiple Regression analysis was used to test the hypothesis and the result of the analysis is presented in table 3. Table 3 showed that the analysis of variance in the regression output produced an F-ratio of 139.717, which is statistically significant at .05 probability level. This indicated that the predictor variables of electronic libraries and zoom technology have a joint significant contribution to the criterion variable of knowledge sharing practices among teachers. This implied that digital tools are significantly potent in explaining the variance in knowledge sharing practices among teachers.

The result also showed that a multiple regression coefficients (R) of .729 and a coefficient of determination (R^2) of .528 were obtained. The (R^2=.528) meant that when the sub-variables of digital tools (electronic libraries and zoom technology) are taken together, they contributed 52.8% of the variance in knowledge sharing practices among teachers. This further implied that 47.2% of the variation in knowledge sharing practices among teachers could be attributed to other extraneous variables to the study. By this result, the F-value of 139.717 (p<.05), R and R^2 of .729 and .528, indicated a high positive relationship between the predictor variables and the criterion variable. Therefore, hypothesis three was rejected. This meant that digital tools have a statistically significant joint contribution to knowledge sharing practices among teachers in public secondary schools in

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Ogoja Education Zone of Cross River. However, to find out the relative contribution of digital tools sub-variables, a test of regression was performed. The result is presented in table 4. The result in table 4 showed that electronic libraries is the strongest predictor of the variance in knowledge sharing practices among teachers (t = 13.970). This is followed by zoom technology (t = 3.316).

Table 3: Summary of multiple regression analysis for the contribution of electronic libraries and zoom technology to knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone of Cross River

Model	SS	Df	MS	F ratio	Sig.
Regression	1317.522	2	658.761	139.717	.000
Residual	1159.884	246	4.715		
Total	2477.406	248			

*Significant p<.05; R=.729; R^2 = .532; Adj. R^2 = .528

a. Criterion: Knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone of Cross River
b. Predictors: Electronic libraries and Zoom technology

Table 4: Test of regression weight of digital tools sub-variables

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Rank
	B	Std. Error	Beta			
Constant	3.533	.998		3.540		
Electronic Libraries	.649	.046	.657	13.970	.000	1st
Zoom technology	.142	.043	.156	3.316	.000	2nd

Discussion

Hypothesis one which stated that, electronic libraries do not contribute significantly to knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone, Cross River State, was rejected while the alternate hypothesis was accepted. This showed that electronic libraries do contribute significantly to knowledge sharing practices among teachers. This is possibly because, there is provision and accessibility to online databases in the various schools. Libraries foster a lifelong learning culture, enhance knowledge management, and facilitate remote and hybrid learning environments. This accessibility allows teachers to share

and obtain information from any location. Moreover, the vast array of resources supports research and innovation, empowering educators to explore new teaching methods and exchange best practices, ultimately improving the quality of education.

The study finding agrees with the conclusion of Dei and Asante (2022) that academic libraries, including electronic libraries provide continuous access to educational resources, thus facilitating ongoing learning and research across various sectors. Electronic libraries are vital for facilitating knowledge sharing among users, such as teachers, by providing platforms for storing, organizing, and distributing information. The finding aligns with that of Sinha and Bhardwaj (2023) who highlight the role of digital libraries in knowledge management and sharing, noting their capability to provide 24/7 access to information, which supports continuous educational and professional development. The finding further corroborates the conclusion of Smith and Jones (2018) who investigated the use of Electronic Libraries in American secondary schools and found that teachers who frequently used Electronic Libraries reported improved lesson quality and student engagement. The findings however, is in contrast with that of Matthews (2017) who noted that not all electronic libraries implement rigorous peer-review processes, which can result in the distribution of low-quality materials. Additionally, Nguyen (2018) indicated that not all teachers are equally inclined to utilize electronic libraries, as factors such as limited digital literacy and resistance to change can hinder the effective use of these resources.

Hypothesis two, which stated that zoom technology do not contribute significantly to knowledge sharing practices among teachers in public secondary schools in Ogoja Education Zone, Cross River State, was rejected, and the alternate hypothesis was accepted. This showed that zoom technology does contribute significantly to knowledge sharing practices among teachers. This finding is possibly because zoom technology plays a crucial role in enhancing knowledge-sharing practices among teachers by offering a versatile and user-friendly platform for live communication and collaboration. It allows educators to engage in virtual meetings, webinars, and workshops, promoting the exchange of ideas, resources, and best practices, regardless of their location. This increased connectivity supports a more interactive learning environment, enabling teachers to regularly update their skills and teaching strategies.

This finding is in line with the submission of Liu and Zhang (2020), that zoom offers a valuable platform for teachers to engage in professional learning communities, exchange instructional methods, and work together on curriculum planning. The platform's synchronous communication capabilities facilitate real-time interactions, enhancing the immediacy and depth of knowledge sharing. It is in agreement with the conclusion of Sangeeta and Tandon (2022), that zoom fostered a more dynamic and interactive classroom environment, empowering teachers to better meet the diverse needs of their

students. The technology has greatly influenced knowledge sharing among teachers by offering a platform for real-time collaboration, virtual meetings, and professional development. The findings is similar to that of Enemuo and Muogbo (2022) who examined the extent of awareness and adoption of zoom technology in teaching and learning among lecturers in colleges Education in Anambra State. The study found out that the respondents were highly aware of Zoom technologies and adopt Zoom technologies for teaching and learning to a very low extent.

The implication is that through Zoom, educators can exchange resources, ideas, and best practices within an interactive online space, improving communication and fostering a strong sense of community among teachers, no matter where they are located.

Conclusion

Based on the study's findings, it was revealed that electronic libraries and Zoom technology play a significant role in enhancing knowledge-sharing practices among teachers. The study concluded that digital tools have a statistically significant impact on knowledge-sharing practices among teachers in public secondary schools in the Ogoja Education Zone, Cross River State, Nigeria. This means that digital tools enhance collaborative knowledge sharing among teachers by providing easy access to research papers, case studies, and professional materials. This access helps teachers stay informed about the latest trends and teaching strategies, thereby contributing to the achievement of educational goals in Cross River State and across Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Secondary school management should invest in digital infrastructure, including reliable internet connectivity and training on digital platforms, to ensure that all teachers can effectively use these tools for knowledge sharing.
2. School administrators should encourage the formation of online collaborative learning communities among teachers, using digital tools to facilitate the regular exchange of knowledge and teaching strategies, thereby enhancing overall educational outcomes.
3. Educational authorities in Cross River State should incorporate digital tools like electronic libraries and Zoom technology into teachers' professional development programs to provide continuous access to up-to-date teaching resources and improve pedagogical skills.

Contribution to knowledge

The study provides valuable insights into how digital tools like electronic libraries and Zoom enhance collaborative learning and continuous professional development among teachers. By offering empirical evidence on their impact, the study informs policy decisions and supports the integration of technology in education, contributing to the broader understanding

of improving teacher effectiveness and educational outcomes through digital means.

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All participants gave consent for their data to be used in publication.

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