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DIGITALIZATION OF SCHOOL ENVIRONMENT FOR EFFECTIVE TEACHING DELIVERY IN PUBLIC UNIVERSITIES IN RIVERS STATE

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Abstract
This research work investigated digitalization of school environment for effective teaching in public higher institutions in Rivers State. The inquiry was descriptive study in nature. The population consisted of two (2) public universities in Rivers State (Rivers State University and Ignatius Ajuru University of Education) and 3,000 teaching staff members in these public universities were used, Stratified sampling technique was used to separate the male and female respondents of these universities and a number of participants of 400 was established by means of Taro Yamane formula. A self - structured questionnaire titled "Digitalization of School Environment for Effective Teaching in Public Universities in Rivers State" was the instrument for the inquiry. Mean and standard deviation were used to answer all research questions while the z-test was used to test all hypotheses at a 0.05 level of significance. 398 copies of the instruments were disseminated, retrieved and evaluated using the Software Statistical Digital Package for the social Sciences (SPSS). Findings of the results showed that there are various digital facilities available for effective teaching in public universities in Rivers State. The research also showed that the respondents had an agreement on the extent utilization of digitals facilities for effective teaching delivery in universities in public universities in Rivers State. Furthermore, finding of results also showed that the factors incumbering the adoption of digital environment in universities were multi-factorial in nature. The study hypothesized no considerable difference on the mean rating of the respondents on the various types of digitals facilities available in schools, extent of digital facilities utilization and on the challenges confronting the adoption of digital environment in public universities in Rivers State. The study concludes that digitalizing the school environment for effective teaching in universities in Rivers State was indeed high since all ten items in table I were all accepted by the respondents though there are countless challenges confronting the espousal of digital environment which include lack of power supply, lack of fund, poor access to internet etc. It was however recommended amongst others that adequate funding for digital facilities by private and cooperate bodies should be encouraged, seminars for capacity- building should be steered for digital skills enhancement of university educators etc.

Keywords: Digitalization, School Environment, Effective Teaching Delivery, Public Universities.

Introduction

Globally, the education sector is characterized by a number of overarching trends, including the adoption of digital systems in educational settings, particularly following the peak of the COVID-19 pandemic, when institutions were urged to switch to online learning as an alternative to conventional face-to-face learning in an effort to reduce physical contact and slow the spread of the Coronavirus. Rapid changes in technology, the economy, and politics are likely to result from the growth of these systems, as well as the need for specialized labor primarily for capacity building.

The process of producing digital images and displaying them on computers, local area networks, or the Internet is known as digitization. It could also refer to the conversion of a printed, manuscript, image, sound, film, or video recording from one format to another. It typically entails scanning or photographing actual physical items and documents to turn them into digital files that can be stored electronically and accessed by computers. Digitization can simply be said as the technological conversion of analog information into digital information which involves the transfer of text, images, video, and music into digital format using equipment that may be used with a computer, including a laptop, the internet, mobile devices, a scanner, a digital camera, a projector, and a printer (Bejinaru, 2019).
The quality of teaching and learning has been significantly impacted by the digitalization of the educational system. In fact, it can be argued that the digitalization of the educational environment can boost students' cognitive domain, enhance teaching and learning, and improve innovation during the past ten years. On this point, McNulty (2021) asserts that curriculum that are taught in a digitalized environment enable students to develop their knowledge, improve in ability, use information, media, and technology, as well as improve in their life on the job skills.

Based on the aforementioned, it is conceited to affirm that digitalizing the educational setting could aid in school expansion, improve teaching and learning, empower students, and ensure system progress in order to ensure that the goals and objectives of higher education are achieved. The quick access to information, self-learning, autonomy, communication, increased engagement, increased student creativity, effective performance evaluation, etc. are also seen when a school system is digitalized. When used as a teaching tool, technology improves knowledge and experience between educators and students, gives students quick access to information, and encourages greater levels of engagement and dedication, all of which help students realize their own personal growth and improvement. It is subtly for university lecturers to note a student's strengths and flaws in a school that has gone digital. No wonder Jain International Residential School (2021) asserts that students who indulge in the use of digital devices while learning end up becoming effective and efficient learners.
Sadly, despite the advantages of digitizing the educational setting, the digitization of universities in Rivers State faces a number of difficulties. These can include a lack of resources, insufficient manpower, a lack of electricity, etc.

Theoretical Review
The 1962 Rogers Diffusion of Innovation Theory serves as the foundation for this paper. It is a theory thatelucidates how, why, and how quickly new ideas and technologies spread.
The notion of Diffusion of Innovation Theory holds that:
• There will always be a difference in the rate and timing at which individuals within a social system adapt new concepts, methods, and technologies, just as there is in the classroom.
• Early adopters of innovations will inevitably outperform those who adopt them later (Ayodele, 2012; Odu, 2017; George-Amadi, 2018).
Due to its relevance to the study's subject (the digitalization of the school environment), this theory was chosen. Accordingly, this theory affirms that institutions and organizations who implement digital innovations early have improved organizational processes, effectiveness, and efficiency compared to their counterparts that rely on the conventional system of operations.
High productivity mostly depends on internal drive, but educators' productivity is also affected by internal elements including the required knowledge, mental aptitude, and resources to execute the job.
The persistently low academic success of students at tertiary institutions has raised serious concerns among those who are involved with those institutions. The manner of instruction used by lecturers as well as the conventional setting in which students and lecturers find themselves have both been largely blamed for the issue. One may feasibly claim that the environment (workplace) in which lecturers work has not received enough attention, and that their access to resources that could improve their teaching methods has also been neglected.

Consequently, there is a felt need to improve on lecturer's work environment by digitalizing the school system with digital tools, gadgets and equipment so as to make teaching and learning interesting. In order to ensure that educators' productivity meets the requisite requirements, educational organizations are therefore required to provide suitable working conditions. This can only be accomplished through digitalizing the workplace for efficiency and effectiveness.

This study aims to investigate the impact of digitalizing school environments for effective teaching in public higher institutions in Rivers State. Could this be the case for universities in Rivers State? Could lecturers be able to work at their best for effectiveness and efficiency in this new era that is brought about by digitalization of schools?

Research Questions

The following research questions were posed to guide the study;

1) What are the various types of digital facilities available for effective teaching in Public Universities in Rivers State ?

2) What is the extent of digital facilities utilization for effective teaching in public universities in Rivers State?

3) What are the challenges confronting the adoption of digital work environment for effective teaching in Universities in Rivers State?

Hypotheses

The following null hypotheses were tested at 0.05 alpha level of significant

Ho1 There is no significant difference on the mean rating of male and female lecturers on the various types of digital facilities available for effective teaching in Universities in Rivers State.

Ho2 There is no significant difference on the mean rating of male and female lecturers on the extent of digital facilities utilization for effective teaching work environment in public Universities in Rivers State

Ho3 There is no significant difference on the mean rating of male and female lecturers on the challenges confronting the adoption of digital work environment for effective teaching in public Universities in Rivers State.

Literature Review

Digitalization

Digitalization occurs when information is converted from an analog format to a digital format through the electronic process. It might be described as the process of converting text, images, video, and music into digital format using equipment that can be used with computers, such as laptops, the internet, mobile devices, scanners, cameras, projectors, and printers. It is on this note that Machekhina (2017) defined digitalization as a system that converts all information types, including text, audio, photos, and video from various sources into a digital language.Ile and Makele-Ndimele (2021) see digitization as the creation of a digital image and subsequent presentation of that image via a computer, local area network, or the Internet. In essence, we may say that digitalization refers to the conversion of a written, manuscript-based, visual, aural, or visual presentation into a digital format. The process often entails taking actual physical objects and documents that have been photographed or scanned with digital cameras and turning them into digital files that can be stored electronically and retrieved with the aid of computers.

Digitalization of school environment

The integration of digital environment into the educational system has gone past the technological apparatuses which are used in the teaching students. It has made learning procedure to go past the traditional teaching method. The technological apparatuses have helped in imparting knowledge much better than the old methodsIrele,(2022).

The term "digitalization" refers to the "acquisition, representation, processing, presentation, security, interchange, transfer, management, organization, storage, and retrieval of data and information" (NIGICTIE, 2019 in Irele, 2022). This covers all equipment, strategies, tactics, routines, concepts, guiding principles, and scientific disciplines applied to the performance of information operations. Digitalization of the school

environment has to do with integrating all the disjointed electronic applications used within the company and allowing employees such as Lecturers to access necessary work tools and data through a single platform. With digitalization teams orlecturerscan conveniently work from the same physical location or from remote locations around the world and this can course close collaboration and coordination with each other which could results to optimum productivity.
It is preferable to think of the workplace's digitalization if which the school setting is inclusive as a natural evolution. The process of "digitalizing" a learning environment includes all available and future technology that individuals utilize to complete tasks in educational institutions.
Email, instant messaging, business social media platforms, and virtual meeting tools are just a few examples. It also includes your HR software and essential business apps. You typically do not need to develop the digital workplace from scratch because the majority of firms already use many of these components. In fact, you might be closer to running a digital workplace than you think if employees send emails from smartphones, check their payonline, or digitally pay bills online. However, even in situations where new technology are necessary, the advantages continue to exceed the disadvantages. While infrastructure and technology are crucial factors, people and problem-solving strategies are what make a digital workplace successful. While firms strive to implement the newest technologies, many neglect to address the crucial cultural shift that is required to alter employee thinking that is essential for the success of digital workplaces. Since an organization's culture serves as the core cornerstone of every digital effort, leaders of institutions must give both the cultural and technological aspects equal attention.Initiatives for a digital workplace can be slowed or delayed, when employees ininstitutions like the school system are stuck in rigid mindset.

Digital workplace encompasses a variety of technologies, platforms, and tools in the digital workplace to deliver educational results. It consists of tools like corporate intranet platforms, knowledge management platforms, communication and messaging apps, cloud storage tools, tools for sharing and collaborating on content both internally and externally, tools for mobile device integration, tools for cloud storage, tools for sharing and storing documents, and content management systems.

For a Digital Workplace to enhance effectiveness, it should:

1. Provide comprehensive integration with current work apps.
2. Offereasy information sharing and collaboration
3. Provide a consistent user encounter in the workplace.
4. Maintain coherence and simplify distant work
5. Regardless of location, provide for mobility and accessibility.

Advantages of a digital workplace

The introduction of digital environments and techniques has given teaching and learning a new look and made it more engaging and fascinating for both students and lecturers. Recent high-tech advancements have led to more dynamic and captivating learning experiences.
Recent research has actually shown how significantly the digital world has an impact on the educational system. On that note, Jain International Residential School (2021), in Akeyemi, Amechi, and Etor (2022) listed the following as the advantages of digitizing the educational setting: supports one-on-one learning, allows learners to proceed at their own speed, fosters the development of smart learners, and students become effective when they use digital tools and technology. Self-motivation, limitless information, smart classes, digital updates, high learning engagement, information sharing that's easy, real-time assessment, as well as performance reports generated by the system all help to increase assessment openness (Ajay, 2020) and provide for a wide range of learning chances.
The digitalized environment benefits lecturers and students of all categories since it enables them to have access to extension resources, which increases knowledge and proficiency by engaging in support activities and working on related tasks. Currently, one can say that the advantages of utilizing digital tools in a digital school environment contributes to the growth of such institution. It is on this note that Salami(2003) highlighted that digital tools contributes to the growth of universities in the following ways; assist in the conduct of transparent and effective admission, transformed the method of salary and

fee payment from automated to digital, transformed the method of communication especially the dissemination of information between staff and students, revolutionized the process of registration of both staff and students as well as the enhancement of storage and retrieval of information using digital gadgets. With this, the administration of the school system becomes very effective and efficient.

Challenges on Digitalization of school environment

Numerous obstacles and problems have made it difficult for many organizations to become tech-institutions, especially those that are part of the country's educational system. Institutional digitization has been hampered by a number of technical and educational problems.

These include a lack of funding, lack of electricity and frequent power outages, bad network, bad technology infrastructure, Internet connectivity issues, low bandwidth, inadequate and unsuitable software, and a lack of human capital to teach these digital technologies, which results in a dearth of people with the necessary skills. There are insufficient computers in schools in the country. Most computer labs are either not available or equipped properly. Moreover, there is a lack of technical know-how in terms of maintenance of the equipment. Bingimlas (2009) opined that challenges militating against digitalization of schools are varied. These according to Bingimlas (2009) include; lack of electricity, poor network, insufficient fund, poor maintenance culture, lack of experienced staff, no training of staff, low internet penetration, high cost of digital tool. This position also corroborates that of Edsembli (2021),whoaffirms that the following problems prevented secondary schools in Nigeria from becoming fully digital: Teachers frequently find it difficult to adapt to new technological advancements. gaining knowledge of new digital platforms, instructors using unsupported apps, frequent device failures, a lack of communication students become disinterested connecting socially with friends, etc.

For Imogie (2002), digitization schools in Nigeria are hampered by the following factors include:

i. Insufficient funding and resources for digital technology at the university level, which leads to a lack of facilities, tools, and supplies.
ii. Majority of classrooms are not set up to accommodate audio-visual devices, this mean that there is no enough room to accommodate instructional materials in the school system. No wonderOlolube, Ubogu, and Egbezor (2007) assert that Nigerian universities lack the ICT infrastructure and facilities necessary to deliver teaching.
iii. Organizational structuresthat are bureaucratic bottleneck in nature that prevents innovation and uphold the status quo.
iv. An unstable power source: Nigeria's efforts to digitize schools have also been hampered by a lack of stable electrical supply and high electricity costs.
v. The majority of subject areas lack adequate educational resources, including computers, Internet cafés, access to the internet and email, equipment for teleconferences and videophones, fax and wireless applications, electronic libraries, e-classrooms, multi-media platforms, as well as the challenge of creating online courses with video.
vi. The lack of professionalism in online learning. According to Nwana (2012), "there is a dearth of facilities, infrastructures, and equipment, as well as a paucity of teachers who are educated for e-learning.
vii. The emphasis on testing and certification in Nigeria's educational system limits the usage of digital technology in the classroom.

For Albert (2016), the obstacles to using a digitally enabled environment effectively fall into three categories: infrastructural, capacity-building, and financial related obstacles.

Infrastructure-related difficulties: This has to do with buildings and structures that can host ICT facilities. The national telecommunications and infrastructure facilities of a nation has at its disposal determined by the available educational technology infrastructure of that nation. To this reason, policymakers and planners need to carefully examine the buildings or structures that will house the available ICT facilities, availability of electricity, and ambiguities regarding forms of ICT before any ICT-enabled program is implemented. Since most technical facilities depend on electricity to operate, the availability of a power supply is equally crucial.

Capacity building related challenges:The technical abilities of instructors, educational administrators, technical support specialists, and content developers are all included in this list of capabilities.
Finance related challenges: Balancing educational objectives with economic realities is a significant obstacle to the incorporation of digitally enabled programs in educational institutions for successful instruction. Higher education institutions must make significant capital investments to integrate a digital environment.

Review of Related Literature
Numerous studies have been undertaken on the availability and usage of digital facilities in secondary schools, according to a survey of related literature.
Fidelis and Daniel (2021) in a study titled "The availability of ICT facilities and teachers' proficiency with ICT use among public secondary schools in Ngara, Tanzania" where the subjects of the study. The study used a hybrid research methodology to get its data. 525 participantsthat cut across 31 secondary schools participated in the study, including instructors, the DEO, the WEO, and leaders of schools. Four randomly chosen schools provided the sample of 84 respondents, which was determined utilizing both purposeful sampling and simply random sampling. Themes were used to evaluate the qualitative data, whereas the quantitative data was analyzed using a descriptive approach.The study's findings showed that there were no ICT facilities or internet connections. The study also revealed that schools faced a limited supply of electricity and a limited budget for facility maintenance. Additionally, a sizable number of teachers lacked proficiency in computers. In essence, very few educators had strong internet skills, and even fewer had hardware and programming experience.

Bada &Jita (2022) is a work titled "E-Learning Facilities for Teaching Secondary School Physics: Awareness, Availability and Utilization,". Thestudy aimwas to investigate howpost-primary school physics teachers in Ondo, Nigeria, felt about having access to and using e-learning resources. Data collection employed a checklist. There were solutions to three research questions. The study's conclusions showed that while most e-learning resources are known to physics professors, very few of them are really available for use in the classroom. This survey also showed that secondary school physics teachers only employed one of these E-learning resources, a desktop computer. This study's findings suggest that e-learning tools were not employed in classroom instruction.Additionally, the survey discovered that all of the e-learning items on the checklist to include desktop computers, flash drives, interactive whiteboards, modems, phones, and photocopiers etc. were available for use in classroom instruction.
Ile and Mekuri-Ndimele,(2022)in a work titled Instructional Delivery Digitalization and Job Performance of lecturers in business education at the Ignatius Ajuru University of Education in Port Harcourt, Rivers State. The aim of the study was to investigate how business education teachers at the Ignatius Ajuru University of Education in Port Harcourt, Rivers State, Nigeria, performed at their jobs. The goal of the study was to determine how much digitalization of aspects of instructional delivery, such as networks and e-libraries, facilitates measurements of lecturer performance. The study also looked at how the institution's technological sophistication influenced the relationship between lecturers' effectiveness and the digitalization of education. The research design used in the study was a descriptive survey. There were 22 lecturers working in the business education department at the Ignatius Ajuru University of Education in Port Harcourt. The data was analyzed using mean and standard deviation. The study's findings demonstrated how digitization of aspects of educational delivery, such as networks and e-libraries, facilitates measurements of lecturers' effectiveness, such as the control of student seminars, projects, and industrial training. According to the study's findings, Ignatius Ajuru University of Education teachers perform better in business education as a result of digitalizing instructional delivery.

Methodology
The study espouses a descriptive survey design. This design was adopted since it provides a descriptive overview of the data that would be used to elicit information from the respondent (Ubulom, 2008). So, all necessary data was be collected using questionnaire upon which inferences were drawn for the study. The study population consist of two (2) government owned universities in Rivers State(Rivers State University and Ignatius Ajuru University of Education) and 3000 teaching staff members in these public universities

were used, Stratified sampling technique was used to separate the male and female educators of these universities and Taro Yamane formula was used to determine the sample size of 400 respondents.A self-structured questionnaire titled "Digitalization of School Environment for Effective Teaching in Public Universities in Rivers State" was the tool used to collect the data.Two sections made up the questionnaire. section 'A' sought for demographic information about the respondents whereas 25 items related to the specific objectives of the study were found in section B, The questionnaire's structure was based on a 4-point scale with the options Not at all (1), Low Extent (2), Moderately Extent (3), and High Extent (4). Any item's mean estimated for each of these variables that was less than 2.50 indicated a negative response or one of low extent, whereas any item's mean calculated for each of these variables that was greater than 2.50 indicated a positive response or one of high extent. The z-test statistics were used to evaluate the hypotheses at a significance level of 0.05.

Results and Findings of the study

Research Question 1

What are the various types of digital facilities available for effective teaching in Public Universities in Rivers State ?

Table 1: Summary of mean and standard deviation on the various types of digital facilities available for effective teaching in public universities in Rivers State.

S/N	Items	Academic staff male(n=112)		Female academic staff (n=288)		Aggregate Score		Remark
		Mean	SD	Mean	SD	Mean	SD	
1	Audio tapes	3.00	0.21	3.60	0.21	3.33	0.21	High extent
2	CD writer	3.40	0.22	3.77	0.31	3.58	0.27	High extent
3	Desktop computer	3.25	0.74	3.21	0.31	3.23	0.53	High extent
4	E-mails	3.45	0.34	3.33	0.33	3.39	0.34	High extent
5	Flash drive	3.33	0.22	3.40	0.41	3.37	0.32	High extent
6	Hard disk drive	3.33	0.21	3.10	0.26	3.21	0.24	High extent
7	Interactive white board	3.20	0.71	3.10	0.04	3.15	0.38	High extent
8	Laptop computer	3.33	0.23	3.33	0.32	3.33	0.26	High extent
9	Photocopier machine	2.50	0.64	3.24	0.33	2.87	0.49	High extent
10	Printer	3.00	0.04	3.00	0.44	3.00	0.24	High extent
	Aggregate score	3.18	0.36	3.31	0.55	3.24	0.33	High extent

Source:field survey (2023)

According to Table I, the male and female respondents, with respective means of 3.18 and 3.33,agreed that Items 1 -10 on the table represented the digital facilities available in universities in Rivers State. An aggregate mean of 3.24, however, which is higher than the criterion mean of 2.50, led to a high extent rating. This shows that items 1 to 10 above are the numerous digital facilities available for efficient teaching in Rivers State's public Universities.

Research Question 2:
What are the extents of digital facilities utilization for effective teaching in public universities in Rivers State?
Table 2: Summary of mean and standard deviation on the extent of digital facilities utilization for effective teaching in public universities in Rivers State.

S/N	Item	Male academic staff n=112		Female academic staff n=288		Aggregate		Decision
		Mean	SD	Mean	SD	Mean	SD	
11	Self-motivation	3.04	0.22	2.65	0.41	2.85	0.32	High extent
12	Endless Information	3.33	0.46	3.00	0.26	3.17	0.33	High extent
13	Digital Update	3.20	0.10	2.89	0.30	3.05	0.20	High extent
14	High learning engagement	2.50	0.33	3.90	0.40	3.20	0.37	High extent
15	Information sharing	4.00	0.46	3.39	0.21	3.70	0.34	High extent
16	Ease communication	3.36	0.89	3.00	0.33	3.18	0.61	High extent
17	Enhancement of knowledge	3.20	0.90	3.20	0.10	3.20	0.50	High extent
	Aggregate mean	3.23	0.48	3.15	0.71	3.19	0.38	High extent

Source: field survey (2023)

With mean scores of (3,23 and 3.15) for the male and female respondents, Table 2 above demonstrates that both respondents agreed that items 11–17 above shows the extent of digital facilities utilization for effective teaching in public institutions in Rivers State. However, with an overall mean of 3.19, which is higher than the 2.50 criteria mean, were assessed as high extent. This is an indication that public universities in Rivers State are utilizing digital facilities to a high extent for efficient teaching.

Research Question 3
What are the challenges confronting the adoption of digital work environment for effective teaching in universities?

Table 3: summary of mean and standard deviation on challenges confronting the adoption of digital work environment for effective job performance in public universities in Rivers State

S/N		Male Academic staff n=118		Female Academic Staff n=288		Aggregate		Decision
		Mean	SD	Mean	SD	Mean	SD	
18	Inadequate funding	3.20	0.20	3.10	0.94	3.15	0.57	High extent
19	Lack of facilities	3.30	0.21	3.20	0.91	3.25	0.56	High extent
20	Inexperienced teachers	2.50	0.22	3.30	0.21	4.15	0.22	High extent
21	Poor network	4.00	0.10	3.40	0.10	3.70	0.10	High extent
22	Poor maintenance culture	4.01	0.14	3.30	0.12	3.66	0.18	High extent
23	High cost of digital tools	3.00	0.18	3.10	0.14	3.05	0.16	High extent
24	Non supportive apps	3.20	0.20	3.26	0.03	3.23	0.12	High extent
25	Insufficient power supply	3.30	0.33	3.20	0.14	3.25	0.24	High extent
	Average mean	3.31	0.20	3.23	0.32	3.42	0.27	High extent

Source: field survey (2023)

Table 3 above, indicates that both male and female respondents had mean scores that were higher than the criterion mean of 2.50, at 3.31 and 3.23, respectively. However, with an overall mean of 3.42, which is higher than the 2.50 criteria mean, they were classified as being of high extent. This shows that the respondents generally acknowledged that the various items above are the challengesconfronting the adoption of a digital work environment for effective teaching in universities in Rivers State.

Hypothesis 1

There is no significant difference between respondent on the various types of digital facilities available in public universities in Rivers State.

Table 4: t-test results of the difference in mean rating between respondents on the various types of digital tools in universities in Rivers State.

Respondents	N	Mean	SD	DF	Level of sign	z-cal	z-tab	remark
Male	118	3.31	0.20	398	0.05	0.35	1.44	Not sign
Female	288	3.23	0.32					

Table 4 above shows that at 0.05 level of significance with a 398 degree of freedom, the calculated t-value of 0.35 which is less than the tabulated value of 1.44. Consequently, the researcher fails to reject the null hypothesis. This implies that there is no significant difference between respondents mean rating on the various digital facilities available in Rivers State public universities.

Hypothesis 2

There is no significant difference between respondents on the extent of digital facilities utilization for effective teaching in public universities in Rivers State.

Table 5: z-test of difference in mean rating between respondents on the extent of digital facilities utilization for effective teaching in public universities in Rivers State.

Respondents	N	Mean	SD	DF	Level of sign	z-test	2-Tab	Remark
Male	118	3.23	0.48	398	0.05	0.028	1.44	Not Sign
Female	288	3.15	0.71					

Table 5 above shows that the computed z-value of 0.028 is lower than the tabulated z-value of 1.44 at 0.05 level of significance with 398 degrees of freedom. Hence, the researcher fail to reject the null hypothesis, meaning that there is no significant difference in mean rating of the respondents in the extent of digital facilities utilization for effective teaching in public universities in Rivers State.

Hypothesis 3

There is no significant difference between the respondents on the challenges confronting the adoption of digital work environment for effective teaching in public universities in Rivers State.

Table 6: z-test of results of the differences in mean rating between respondents on the challenges confronting the adoption of digital environment for effective teaching in universities in Rivers State.

Respondents	N	Mean	SD	DF	L.sign	z-cal	z-tab	Remark
Male	118	3.31	0.20	398	0.05	0.014	1.44	Not sign
Female	288	3.23	0.32					

The statistics in table 6 above show that the calculated z-value of 0.014 is smaller than the calculated value of 1.44 at 0.05 level significance with 398 degrees of freedom. Since there is no statistically significant difference in the respondents' mean ratings of the difficulties in implementing a digital environment for efficient teaching in public universities in Rivers State, the researcher is unable to reject the null hypothesis.

Discussion Of Findings

Based on the responses to study question one (1) regarding the various digital facilities available at Rivers State's public universities. Both male and female respondents expressed strong agreements on the numerous digital facilities in Rivers State's public universities. These results corroborate Bada &Jita's (2022) assertion that teaching could be done using e-learning tools such desktop computers, flash drives, interactive whiteboards, phones, modems, and photocopiers.

Findings from research question two (2) show that both male and female academic staff members strongly agreed that digital tools are used for efficient instruction in public universities in Rivers State. This result is in line with that of Akeyemi, Amechi, and Etor (2022), who aver that digital tools are effective in teaching because they promote self-motivation, limitless information, individualized instruction, smart classrooms, high levels of student participation, easy information exchange, etc. This result concurs with McNurlty (2021) who aver that digital learning helps both students and lecturers since it permits their knowledge and skill to access extension of materials from the internet.

The results of research question three (3) showed that both respondents hand an agreement that the items on table 3 were the challenges hampering adoption of a digital work environment in universities in Rivers State. This finding is in line withImogie (2002), who opined that the problems with digitization of schools in Nigeria include a lack of classroom space and teaching materials, inadequate funding, a lack of power, a bureaucratic backlog, etc.

The results of the hypothesis also show that there is no significant difference between the responses of the male and female teaching staff regarding the various types of digital facilities used in public universities,utilization of digital facilities in universities in Rivers State, and the difficulties associated with the adoption of digitalenvironments in universities in Rivers State.

Conclusion

With this study, one can affirm that digitalizing the school environment for effective teaching in universities in Rivers State is indeed high. The ten items in table I were all accepted by the respondents as the various types of digital facilities used for effective teaching in public universities in Rivers State.

Similarly, all outline items in table 2 were also accepted by the male and female respondents as the extent of digital facilities utilization for effective teaching in public universities in Rivers State.The study also identified the main obstacles hindering the adoption of digital work environment for efficient instruction in universities in Rivers State.

Recommendations

1. Private and public organizations should provide sufficient money for digital infrastructure.
2. To improve university educators' knowledge on the desire to use digital tools, capacity-building workshops should be held regularly.
3. The government should hire experts who can handle the digital facilities and gadgets.
4. To improve education, administrators and planners in schools should incorporate the use of digital tools.

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