



DIGITALIZATION OF SCHOOL ENVIRONMENT: A PANACEA FOR EFFECTIVE PUBLIC UNIVERSITY ADMINISTRATION IN RIVERS STATE

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Cite this article:

Nwuke Hames & Ihua
Nwovuhoma (2023), Digitalization
of School Environment: A Panacea
for Effective Public University
Administration in Rivers State.
International Journal of Education
Leadership and Development
Research, 1(2), 11269.

DOI: [10.13140/RG.2.2.11121.25445](https://doi.org/10.13140/RG.2.2.11121.25445)

Manuscript History

Received: 14 Jun 2023

Accepted: 05 Jul 2023

Published: 08 Aug 2023

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ABSTRACT

The emergence of modern technology has become a crucial tool in facilitating the transformation of public universities in Rivers State through digitalization. This paper tends to explore the impact of digitalization on school environments and assess its efficacy in enhancing the administrative operations of public universities in Rivers State. The paper further emphasised the various digital tools that enhance the educational environment, such as Wifi connectivity, school records management, online payments, and E-teaching platforms. The paper identified several challenges associated with digitization, such as infrastructure, cost, technological literacy, security, resistance to change, and the digital divide, among others. The article highlighted the transformative potential of digitization in the administration of public institutions in Rivers State. However, it emphasised the need for appropriate measures to be implemented in order to ensure the effective implementation of digitalization. The paper suggested that public universities in Rivers State should have the potential to enhance their operations by implementing cloud-based systems for the storage, management, and retrieval of various types of data and information. These include, but are not limited to, students' personal information, academic records, financial records, and course materials. The use of cloud servers for data storage significantly streamlines the process of retrieving crucial documents, thereby enhancing the organisation of students' records. It was further suggested that universities should have the capability to use learning management systems such as Blackboard, Canvas, and Moodle as tools for developing online courses, disseminating lecture videos, distributing assignments, managing grade submissions, and facilitating the sharing of various forms of digital content.

Keywords: Wifi connectivity, School Records Management, Online Payments, E-teaching Platforms



INTRODUCTION

To enhance the administration of public universities in Rivers State, it is imperative for the state to adopt the digitalization of the school environment. The implementation of digital technology in universities holds the capacity to enhance various aspects such as efficiency, productivity, accuracy, transparency, and coordination. The concept of "digitalization of the school environment" refers to the integration of contemporary digital technologies and applications into existing educational practises. Ugur (2020). Computers, iPads, projectors, and online learning management systems are among the technological tools employed in this particular educational setting.

Koca, Tuncay, and Sisman (2021) proposed a new learning ecosystem that involves the integration of digital technologies in school environments and fosters personalised instruction, collaborative endeavours, and individualised instruction. The authors proposed the adoption of a learner-centred approach in schools that integrates digital resources to effectively cater to the diverse needs of students. The process of digitising the school environment has significant implications for the methods employed by educators to create and distribute information, as well as for the learning experiences of students. Lee and Kim (2020), the integration of digital resources within the educational setting enhances the level of connectivity, collaboration, and involvement between students and teachers in a synchronous manner. Students' record management facilitates the efficient handling and accessibility of various records, including personal information, admissions status, academic transcripts, and test scores. Consequently, the likelihood of information loss will be reduced, thereby facilitating students' seamless retrieval of their transcripts as needed.

The implementation of a digital admissions procedure enables applicants to electronically submit their application and accompanying materials. This approach will reduce the necessity of printing and distributing application documents, thereby mitigating the associated financial and logistical risks involved in carrying files and other administrative responsibilities of the institution.

The internet provides access to a variety of educational resources, such as textbooks, electronic books, academic journals, and films, enabling students to engage in flexible and independent study opportunities. Digital payment solutions, such as mobile money, payments through school portals, and online banking, possess the capacity to enhance the efficiency, facilitate ease, and augment the security of the payment procedure. The use of a digital learning management system facilitates the creation and dissemination of course materials, assignments, quizzes, and examinations in a digital format. The implementation of remote learning will foster a more interactive and immersive educational environment, thereby promoting student engagement and active participation.



There exists a dearth of comprehensive understanding regarding the extent of digitalization in public universities in Rivers State, despite the widespread use of digital technology in education. The implications of this transition to digital modalities for student learning remain uncertain. Hence, the objective of this study is to examine the potential enhancements in education that may arise from the integration of technology within educational institutions.

Theoretical Framework

Diffusion of Innovation Theory

Rogers' theory of the diffusion of innovations was postulated, as referenced in the work of Nwuke (2022). The theory posits that the process of individuals, organisations, or communities embracing a novel innovation unfolds gradually. The theory provides a comprehensive explanation of the mechanisms through which novel concepts or ideas are communicated and adopted within a specific population. The process consists of five fundamental phases, specifically knowledge acquisition, persuasion, decision-making, implementation, and confirmation.

1. **Knowledge:** The individual acquires knowledge of the innovation through focused and concise practise. During this first stage, individuals are exposed to the innovation for the first time, gaining awareness of its presence and cultivating a basic understanding of its purpose and potential benefits that will accrue from the innovation
2. **Persuasion:** The individual develops an inclination towards the innovation and actively pursues additional information. During this stage, individuals develop a favourable attitude towards the innovation. The individuals evaluate the advantages of the subject being assessed and compare it with existing alternatives, considering multiple factors such as cost, suitability for their needs, and potential risks.
3. **Decision Making:** The process of decision making involves the careful evaluation of the strength and weaknesses associated with the adoption of the innovation, leading to a conclusive determination to adopt it. Individuals partake in a purposeful procedure to ascertain the feasibility of embracing or dismissing the innovation. The decision-making process is susceptible to various internal and external factors, encompassing personal perceptions, societal norms, and the perspectives of influential individuals.
4. **Implementation:** The individual starts using the novel concept (Innovation). Once individuals have made the decision to accept, they proceed with the implementation of the innovation in their respective daily lives or work environments. This may involve the acquisition of knowledge related to the product, the adjustment of established routines, or the alteration of processes to accommodate the innovation..
5. **Confirmation:** Confirmation is the stage in which the individual assesses the outcomes of adopting the innovation and makes a determination regarding its ongoing utilisation. The concept involves the continuous adoption and application of the innovation by



individuals, leading to either the validation or dismissal of their initial choice. If the innovation successfully meets the users' expectations and effectively delivers the desired benefits, there is a strong likelihood that it will be embraced and spread through informal channels of communication

Nwuke (2022) considered the usage of a virtual reality learning platform as an example, using the various stages. In respect to the first stage, knowledge acquisition, educators and learners become aware of the availability and potential benefits of utilising a virtual reality learning platform. It has been found that this technology has the capability to provide captivating and interactive educational experiences, thereby enhancing students' interest and comprehension across various academic fields. During the second stage of persuasion, educators evaluate the advantages of incorporating a virtual reality learning platform into their instructional methodologies. Factors such as enhanced student motivation, the potential for experiential learning, and alignment with instructional goals are considered in their evaluation. In order to enhance their understanding and gain additional insights, individuals may consider engaging in discussions with colleagues or attending professional development events such as workshops and conferences.

The determination of whether to incorporate the virtual reality learning platform into the curriculum is made by educators and educational administrators during the decision-making phase. The decision-making process is influenced by various factors such as financial constraints, infrastructure needs, training obligations, and perceived alignment with educational objectives. The implementation phase immediately follows the adoption stage of the virtual reality learning platform. Educators undergo training to effectively employ technology within the educational setting, integrate it into instructional strategies, and provide students with the necessary technical support. Through the use of the platform, individuals have the capability to generate novel virtual learning experiences or modify preexisting educational resources.

During the confirmation phase, educators and learners acquire knowledge regarding the benefits and challenges associated with the implementation of virtual reality as a learning platform within an educational setting. Educators are inclined to persist in utilising and advocating for the integration of technology within their instructional settings, provided that it enhances students' comprehension, fosters higher levels of engagement, and yields improvements in learning outcomes. In order to enhance the efficacy of the virtual reality learning platform, it is advisable for educators to engage in collaborative endeavours, conduct research, and disseminate accounts of successful implementation. However, in the event of significant impediments or limitations, such as technological challenges or insufficient access to necessary resources, educators may choose to discontinue its utilisation, leading to the rejection of the innovation within that particular educational context.

The diffusion process exhibits non-linear characteristics, allowing individuals to potentially bypass certain phases or engage in a cyclical progression. Adoption rates can also be influenced by factors such as social influence, perceived risks, adherence to prevailing norms, and perceived

advantages. Rogers in Nwuke (2022) posited that the rate of adoption of an innovation is influenced by five key factors, namely relative advantage, compatibility, complexity, trialability, and observability. Various factors have the potential to influence an individual's inclination towards either embracing or dismissing an innovation.

The application of the Diffusion of Innovation theory holds significant relevance in the context of digitalizing the school environment to enhance the administrative efficiency of public universities in Rivers State. The theory elucidates the manner in which individuals, encompassing university administrators, are subject to the influence of specific factors when making decisions regarding the adoption of a novel innovation. The theory underscores the significance of effective communication and the involvement of early adopters in facilitating the diffusion of innovation within the organisation. The successful implementation of digitalization initiatives necessitates the establishment of efficient communication channels that facilitate the dissemination of information, fostering awareness, comprehension, and expertise regarding emerging technologies among relevant stakeholders. Therefore, the applicability of the diffusion of innovation theory in the context of digitalizing the school environment for efficient administration of public universities in Rivers State is significant. This theory offers a conceptual framework that facilitates comprehension of the adoption process and enables the formulation of strategies to enhance its effectiveness.

Conceptual Framework

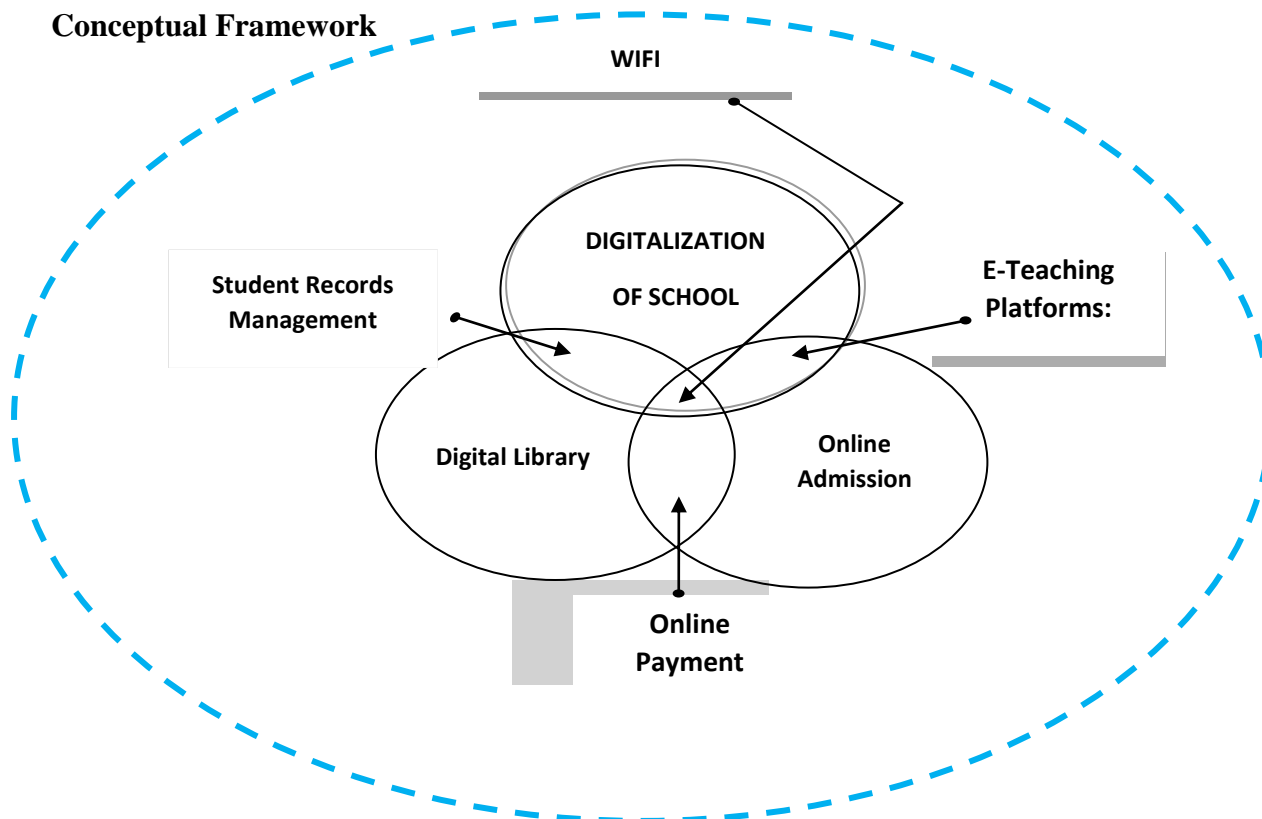


Diagram Illustrating the Various Digitalization Platforms



Digitalization of the School Environment

In recent years, researchers have expressed a strong interest in the digitalization of school environments due to the rapid advancements in technology. Currently, there is a growing interest among public universities in Rivers State to adopt digital technologies as a means to enhance their administrative efficiency. Nwuke (2022), the integration of digital tools within educational settings has the potential to significantly enhance the quality of educational experiences by facilitating improved communication, organisation, and accessibility to resources that's geared towards administrative effectiveness.

Onwuka and Edem (2020), the integration of digital technology in higher education represents a significant shift in the prevailing paradigm. This shift enables the dissemination and acquisition of knowledge to extend beyond the traditional confines of the classroom. The utilisation of digital tools has the potential to enhance various aspects of education, including teaching, learning, and the administrative operations and decision-making processes within universities. The incorporation of digital technologies is imperative for universities, given their widespread presence in contemporary society. Echeruo, Ogadi, and Dimkpa (2019), contemporary students can be characterised as "digital natives" due to their upbringing in a technologically advanced environment. Consequently, there is a growing demand for institutions of higher education to provide a modern and applicable curriculum. In order to effectively implement digitalization, universities must possess a comprehensive understanding of its advantages and disadvantages. The management of data privacy, security, and accessibility is imperative. The adoption of digitalization in educational settings is an imperative measure for public universities in Rivers State to effectively respond to the evolving technological landscape. In the pursuit of efficient administration, university administrators must prioritise the adoption of digital technologies. A comprehensive comprehension of the adoption process and a well-defined strategy are necessary to address the challenges that arise in this context.

The Transformative Potential of Digitization in the Administration of Public Institutions in Rivers State

In the contemporary era of technological advancements, the process of digitization holds immense promise for transforming the management and operations of public institutions. The implementation of digitalization in public institutions within Rivers State has the potential to optimise operational efficiency, enhance the quality of service provision, and promote transparency. In a study conducted by Zhang (2016), the author examined the potential for transformation brought about by digitization in the effective administration of public institutions.

1. Improved Efficiency and Service Delivery: The implementation of digitization has the potential to greatly optimise administrative procedures, resulting in heightened efficiency within public institutions. In a study conducted by Adabayo and Kolajo (2018), it was found that the process of digitization has the potential to enhance workflow management, optimise document management systems, and automate laborious tasks, resulting in a reduction of both time and



effort expended on administrative duties. The implementation of this streamlined approach enhances overall operational efficiency, thereby enabling public institutions in Rivers State to deliver expedited and more efficient services to the general populace.

2. Transparent and Accountable Governance: The transformative potential of digitization is evident in its ability to enhance transparency and accountability in the management of public institutions. In the context of Rivers State, the implementation of digitised platforms has the potential to facilitate convenient access to information and services for its citizens. The promotion of transparency is emphasised by Azubuike (2019), who argues that digitization plays a crucial role in enabling the monitoring of public funds utilisation, mitigating corruption, and enforcing the responsibility of public officials for their conduct.

3. Enhanced Data Management and Decision-Making: The process of digitization has the potential to improve data management within public institutions, thereby facilitating the formulation of evidence-based policies and enhancing decision-making processes. Etieyibo & Oghojafor (2018) asserted that the process of digitization facilitates the acquisition, retention, and examination of extensive quantities of data, thereby affording valuable perspectives for the effective distribution of resources and the adoption of decision-making practises grounded in empirical evidence. This, in turn, can yield advantageous outcomes for public institutions situated within Rivers State.

4. Enhancing Accessibility and Inclusivity in Service Provision: The utilisation of digitization has the potential to enhance accessibility and inclusivity in the delivery of services by public institutions. The implementation of citizen-centric digital services, such as online portals has the potential to facilitate convenient access to public services for residents, including those residing in remote areas. The enhanced accessibility provided by this feature is especially advantageous for individuals who have disabilities or face limitations in their mobility. Ellwangga et al., (2020), highlighted the significance of digitization in addressing the digital divide and promoting equitable access to public services within Rivers State.

5. Challenges and Considerations: Although the potential for transformation through digitization is substantial, it is imperative to acknowledge and tackle the accompanying challenges. Inadequate infrastructure, cybersecurity risks, and the digital divide pose potential obstacles to the successful implementation of digitization initiatives within public institutions in Rivers State. The importance of fostering awareness and enhancing the capabilities of public officials, along with promoting collaboration among various stakeholders, has been emphasised by Akinmusuru et al. (2021) as essential for addressing these challenges.

The Use of Wifi Connectivity in Schools

In recent years, there has been an increased reliance on the digitization of school environments by the administration of Rivers State Public Universities. The process of digitalization necessitates a reliable and consistent WiFi connection. The presence of WiFi connectivity is of



utmost importance for facilitating effective communication, fostering collaboration, and promoting the acquisition of knowledge (Karaarslan & Sali, 2020). In order to facilitate research, data processing, and management, it is imperative for scholars and university administrators to have access to efficient and reliable WiFi (Oloniniyi et al., 2018). The provision of WiFi connectivity enables students to utilise digital tools and resources for the purposes of communication, organisation, and information retrieval (Karaarslan & Sali, 2020). Babatunde K., & Babatunde Y., (2021), the implementation of WiFi connectivity has been found to enhance administrative procedures, facilitate decision-making processes, and enable easier access to data and analytics. It is imperative for public universities in Rivers State to prioritise the provision of WiFi connectivity in order to facilitate the process of digitalization. Nevertheless, establishing a WiFi connection poses challenges. Enhance connectivity by effectively addressing challenges related to bandwidth limitations and infrastructure deficiencies. Zhang et al. (2017), the utilisation of big data analytics has the potential to enhance the performance of wireless networks in university settings. The digital transformation in the field of education is confronted with challenges pertaining to the availability of wifi connectivity and financial constraints in remote areas.

Lindaah (2020), various factors such as cultural expectations, academic responsibilities, and personal convenience have been identified as influential factors in the utilisation of campus WiFi among university students. The achievement of successful digitalization necessitates the presence of advanced WiFi system technology, robust infrastructure, adequate funding, and well-defined user policies, all of which collectively contribute to enhancing wireless network coverage and performance.

The Use of School Record Management in Schools

The relevance of digitalizing school environments has grown significantly in the context of effectively managing public universities in Rivers State. The utilisation of digital tools and resources has the potential to augment communication, facilitate organisational management, and improve accessibility to resources. The records or files maintained by school management encompass various aspects such as admissions, examinations, student performance data, attendance records, and staff records. The process of digitising these records has the potential to facilitate efficient monitoring of student performance and offer valuable insights for enhancing university administration.

Research has demonstrated that the digitization of school management records enhances operational efficiency, enables more informed decision-making, and fosters effective communication among administrators, faculty members, and students. Adekunle et al. (2020), the implementation of digitalization in public institutions in Rivers State can play a crucial role in expediting administrative processes, reducing inefficiencies, and facilitating enhanced decision-making among university administrators.

Moreover, the implementation of digitization in the management of school administration records has the potential to enhance data security by mitigating the likelihood of loss or theft.



The process of digitalization has the potential to enhance the ease of record-keeping and retrieval, thereby diminishing the necessity of maintaining physical storage of information (Okeowo and Oyelude, 2021). Adekunle et al. (2020), the process of digitising school management records provides university administrators with instantaneous access to crucial information, thereby empowering them to make informed decisions and efficiently respond to the evolving needs of their institutions.

Furthermore, the implementation of digital technology in school administration can enhance communication and foster transparency among university staff and students. The utilisation of digital records has the potential to enhance accessibility of certain data sets to the general public, thereby promoting transparency and integrity in the management of universities (Tirumala, 2020). However, it is imperative to surmount various challenges in order to ensure the successful implementation of digitization initiatives in the realm of school management records. Ensuring the confidentiality and integrity of sensitive information stored in digital records is a significant concern that may require increased investments in cybersecurity measures. Furthermore, it may be imperative to provide staff with additional training due to the implementation of digitization and the incorporation of digital workflows into the existing administrative protocols (Akinsolu and Popoola, 2019).

The implementation of digital technology for the management of administrative documents in public universities in Rivers State has the potential to enhance efficiency and effectiveness in university administration. This opportunity provides university personnel, students, and administrators with the potential to enhance operational efficiency, decision-making processes, and communication strategies. Although there may be various challenges that could impede the progress of digitization initiatives, it is crucial to emphasise the importance of meticulous planning and execution due to the numerous benefits associated with such endeavours.

The Use of E-Teaching Platforms in Schools

The advent of e-teaching platforms has provided a potential avenue for the transformation of education through digitalization. E-teaching platforms provide distinct educational prospects, including the facilitation of remote learning, enhanced access to a diverse array of learning resources, and improved student-teacher collaborations. Sabagh et al. (2020), the utilisation of e-teaching platforms has the potential to augment teaching and learning encounters through the facilitation of educators in generating interactive and captivating lessons for students. Additionally, these platforms offer students the opportunity to receive feedback in real-time, thereby fostering their engagement and collaboration in the learning process.

Within the realm of public universities in Rivers State, the utilisation of e-teaching platforms holds significant importance as it serves to streamline administrative procedures, diminish inefficiencies, and facilitate enhanced decision-making capabilities for university administrators. Kouzi and Faulkner (2018), e-teaching platforms have the potential to assist universities in delivering courses to students who are unable to physically attend classes. These platforms allow students to access course materials and participate in classes remotely. Furthermore, in light of



the prevailing COVID-19 pandemic, the significance of e-teaching platforms has been further emphasised as they play a crucial role in enabling remote learning and fostering digital classroom engagements. Dumford and Miller (2018), the integration of e-teaching platforms can facilitate the transition of universities towards a digital learning environment. This is achieved through the provision of continuous access to course materials and the establishment of avenues for real-time interaction between students and instructors.

There are multiple challenges that necessitate attention in order to achieve complete implementation of e-teaching platforms in public universities in Rivers State. The challenges encompass various aspects such as the requirement for dependable internet connectivity, availability of pertinent e-teaching tools, provision of faculty training on effective platform utilisation, and fostering student engagement to promote inclusivity and accessibility for all students (Sabagh et al., 2020).

E-teaching platforms offer a distinct opportunity to enhance the quality of education and facilitate efficient administrative processes in public universities located in Rivers State. Despite encountering various obstacles, such as limited access to pertinent resources and difficulties in engaging students, the process of digitalization holds the capacity to profoundly transform the field of education and augment the overall student experience.

The Use of Digital Libraries in Schools

Digital libraries provide an online platform wherein students and faculty can conveniently access an extensive array of information resources that are pertinent to their academic and research requirements. Khoo and Liew (2019), the implementation of digital libraries has the potential to improve the availability, accessibility, and efficiency of university libraries. This is achieved through the facilitation of quick access to digital and multimedia resources, as well as the provision of online support services for students and researchers. The implementation of digital libraries offers a multitude of advantages for both students and university administration. The accessibility of required research materials for students is facilitated, and the university's operational efficiency is improved through the digitalization of the library, which effectively streamlines administrative tasks. Digital libraries can also facilitate the dissemination of research materials for universities, enabling researchers to share their work with broader audiences, including international collaborations that are not constrained by geographical boundaries.

Furthermore, the implementation of digitalization in school libraries has the potential to significantly improve the overall student experience. Isah et al. (2019), remote access to library resources allows students to conveniently utilise these resources without the requirement of being physically present in the library. This accessibility is particularly beneficial for students who are geographically distant from the educational institution. Nevertheless, the implementation of digital libraries is not without its obstacles. The successful implementation of digital libraries may face obstacles, such as the constraint of financial resources for procuring digital materials and the limited computer literacy among both students and staff (Ezema et al., 2020). However, the advantages associated with the implementation of digital libraries in the



context of institutional administration and research underscore the importance of adopting digital libraries as a crucial means of improving pedagogical practises and facilitating efficient administration in public universities located in Rivers State.

The adoption of digital libraries has been significantly expedited by the COVID-19 pandemic, as students and faculty increasingly depend on virtual means to access library resources and services (Ogbuyi and Olumuyiwa, 2020). The COVID-19 pandemic has underscored the necessity of digital resources in order to guarantee the continuous execution of academic activities and research. Digital libraries have the capacity to significantly enhance administrative efficiency within public universities located in Rivers State. Despite potential obstacles, the utilisation of digital libraries is indispensable for efficient administration and pedagogical excellence due to their advantages in terms of accessibility, efficiency, and operational transparency.

The Use of Online Admission Process in Schools

The utilisation of digital technology in online admission processes facilitates the management and automation of the entire admission procedure, encompassing the stages from application submission to enrollment. This integration of technology ensures a smooth and uninterrupted experience for students. Tonta (2018), the implementation of online admission processes in universities can have several benefits, including improved accessibility, efficiency, and transparency in administrative operations. This digital approach allows for the effective utilisation of resources and the optimisation of administrative procedures. The implementation of online admission procedures offers a multitude of advantages for both students and university administration. Students have the convenience of being able to easily apply for admission from any location and at any time, without the need for physical presence. This not only reduces the expenses and time associated with travel, but also eliminates geographical constraints. Online admission processes offer a secure, dependable, and effective means of overseeing student records, encompassing academic transcripts and standardised test scores, while also diminishing processing duration. The utilisation of online admission processes also results in a reduction in the requirement for administrative personnel, thereby decreasing the financial burden on universities in terms of recruiting supplementary staff for administrative duties.

The digitalization of admission processes in a school environment has the potential to significantly improve the overall student experience. This is primarily achieved by facilitating timely and error-free application submissions, as well as enabling university administrators to effectively monitor and track applications, thereby expediting the admission process (Yusuf and Ogunbode, 2018). Nevertheless, the implementation of online admission systems is not without its challenges. The successful implementation of online admission processes may face obstacles such as power outages, restricted internet connectivity, and limited computer literacy among students and staff (Oguntimehin and Olowoyo, 2020). However, the advantages of implementing online admission procedures in the management of educational institutions render it a crucial



instrument for efficient admission processes and an enhanced student experience in public universities within Rivers State.

Furthermore, it has been observed that the COVID-19 pandemic has expedited the implementation of the online admission procedure. A significant number of universities have embraced the online admission process as a means to minimise face-to-face contact and guarantee the well-being of both applicants and personnel (Tariq et al., 2020). In summary, the implementation of digital admission processes presents significant opportunities for efficient administrative practises within public universities in Rivers State. Despite potential challenges, the adoption of online admission processes is crucial for effective administration due to the numerous benefits it offers, including enhanced accessibility, improved efficiency, and increased operational transparency. This makes online admission an indispensable tool for facilitating swift and streamlined admission procedures.

The Use of Online Payment Systems in Schools

Online payment systems are digital platforms that facilitate the collection of payments for various academic expenses, such as tuition fees, registration fees, library fines, and other related fees, from students and parents. Payment systems play a crucial role in the digitalization of educational settings by offering a convenient, secure, and efficient means for students and parents to make fee payments remotely, eliminating the need for physical presence at the university campus. Adepoju et al. (2021), the implementation of online payment systems has the potential to improve the transparency, efficiency, and accessibility of university administration. This is achieved through the facilitation of real-time transaction tracking, reduction of overhead expenses, and enhancement of financial management.

The implementation of online payment systems offers a multitude of advantages for both students and university administration. Tuition fees can be securely paid by students and parents from any location worldwide, eliminating the necessity for physical presence. Suhartono et al. (2020), the implementation of online payment systems has the potential to decrease processing durations, enabling university administrators to efficiently and promptly handle payments. Consequently, this can result in a streamlined experience for both students and parents.

Furthermore, the implementation of digital financial transactions within a school setting has the potential to improve overall financial management through the reduction of errors and fraudulent activities, as well as the facilitation of more effective budgeting and planning (Owolabi et al., 2019).

Nevertheless, the adoption of online payment systems is not without its challenges. The successful adoption of online payment systems can be impeded by various obstacles, including security concerns and adoption costs (Agboola et al., 2019). However, the advantages associated with the adoption of digital payment systems in the administration of institutions make it an indispensable tool for efficient administration and financial management in public universities in Rivers State.



The implementation of digital payment systems presents significant opportunities for efficient management within public universities in Rivers State. Despite potential obstacles associated with the implementation of online payment systems, the advantages, including enhanced accessibility, improved efficiency, and heightened financial transparency, establish online payment as a crucial instrument for efficient administrative processes.

Challenges to the digitalization of school environments for the effective administration of public universities

1. The digitalization of educational settings necessitates the presence of appropriate technological infrastructure, encompassing a consistent power supply, fast internet connectivity, and dependable hardware and software systems. The absence of these resources may impede the adoption and implementation of digital tools and services.
2. The financial burden of technology equipment, software, and maintenance can present a significant obstacle for universities, particularly those with constrained fiscal means.
3. Technological literacy encompasses the essential components of digitalization, which extend beyond the mere availability of technological resources. In addition to the provision of such resources, the presence of proficient personnel and students possessing the necessary technological competency is imperative to effectively harness the full capabilities of these resources. The deficiency in computer literacy among both staff and students has the potential to impede the integration and utilisation of digital technologies.
4. The integration of technology in educational institutions also presents a notable security concern, specifically pertaining to the protection of data privacy and the susceptibility to cyber-attacks. In order to safeguard their systems, data, and the confidentiality of faculty and students, universities must establish comprehensive security protocols.
5. Resistance to change is a common phenomenon observed when schools undergo digitalization, as it introduces novel modifications that may encounter opposition from stakeholders who are accustomed to conventional or archival modes of operation.
6. The digital divide pertains to the uneven allocation of technological resources and computer literacy across various demographic groups, impeding the widespread adoption and utilisation of digital tools and services.
7. The integration of digital technologies with pre-existing administrative and academic systems presents a challenge that stems from technical disparities, compatibility concerns, and a reluctance to embrace change.
8. Maintenance and Upkeep: Regular maintenance and upgrades are necessary for the proper functioning of any digital infrastructure. It is imperative for universities to allocate resources and manpower towards the regular maintenance, updates, and future-proofing of their digital systems and tools.
9. The absence of a standardised framework or guideline for the digitalization of the school environment may impede the efficient implementation and adoption of digital tools and services.



10. **Accessibility Barriers:** Individuals with disabilities, whether they are students or staff members, may face challenges related to accessibility when utilising digital tools and services. These barriers have the potential to restrict their ability to fully utilise and benefit from such tools and services.

11. The digitalization of the educational setting results in the generation of substantial volumes of data, thereby emphasising the importance of effective data management. It is imperative to establish and implement strategies that effectively ensure the security and efficient management of data, encompassing aspects such as privacy, storage, and analytics.

12. In order to ensure adherence to local regulations and policies pertaining to data security, privacy, ethics, and intellectual property rights, digitalization initiatives within universities must be conducted in compliance with these governing frameworks.

Conclusions

The implementation of digitalization in the educational setting is of utmost importance in ensuring the efficient management of public universities in Rivers State. The use of digital tools and platforms has become increasingly prevalent in academic contexts due to the emergence of technology. This adoption has proven to be a more effective means of managing academic processes and enhancing the overall quality of education. The integration of digitalization within the administrative framework of public universities in Rivers State has the potential to enhance both student enrollment and retention rates. Furthermore, it can streamline various administrative tasks, foster transparency, improve data management, and facilitate effective communication among stakeholders. Hence, it is crucial for public universities within the state to adopt the digital era and effectively leverage the potential advantages of technology in order to enhance educational outcomes.

Suggestions

The following suggestions are provided for the purpose of digitising the educational settings in order to enhance the administrative processes of public universities in Rivers State:

1. Public universities in Rivers State should have the potential to enhance their operations by implementing cloud-based systems for the storage, management, and retrieval of various types of data and information. These include, but are not limited to, students' personal information, academic records, financial records, and course materials. The use of cloud servers for data storage significantly streamlines the process of retrieving crucial documents, thereby enhancing the organisation of students' records.
2. Universities should have the capability to utilise learning management systems such as Blackboard, Canvas, and Moodle as tools for developing online courses, disseminating lecture videos, distributing assignments, managing grade submissions, and facilitating the sharing of various forms of digital content.



3. Universities should establish digital library platform tailored to the needs of students that allows students to conveniently access educational content using their personal devices.
4. The University administrators should implement online admissions and registration system to facilitate a streamlined process for students to submit applications and enrol in courses. The implementation of this solution is expected to yield significant benefits, such as a notable reduction in the workload of administrators as well as the elimination of lengthy queues and the associated stress experienced by students during registration periods.
5. Universities should have the option of utilising digital communication channels such as email and chat platforms to facilitate interaction between students and administrators. This enables the seamless exchange of information and facilitates the receipt of feedback.

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