Knowledge Sharing in Higher Institution: A Nigeria Post-Secondary Technical Institution Case Study

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Abstract

In the ever-changing landscape of education, the integration of Information and Communication Technologies (ICT) has emerged as a transformative force, reshaping traditional teaching methods and enhancing learning experiences. This study delves into the complexities of ICT adoption in Nigerian higher education, focusing on post-secondary technical education programs or National Diploma and Higher National Diploma (ND/HND) awarding institutions. The significance of this study lies in addressing challenges faced by developing nations like Nigeria, where harnessing ICT-driven education could resolve pressing issues in the educational sector. The study identifies multifaceted challenges hindering ICT adoption, such as inadequate funding, lack of infrastructure, and resistance from faculty members. It emphasizes the pivotal role of knowledge sharing in higher education, underlining its significance in fostering continuous learning, collaboration, critical thinking, and innovation. Integrating ICT tools, supported by a robust digital infrastructure and tailored training programs, can mitigate these challenges. The study explores prominent knowledge-sharing models and theories, comprehensively understanding knowledge dissemination within post-secondary technical institutions. It emphasizes collaborative learning environments, ICT integration, and supportive policies as critical factors in enhancing knowledge exchange. The findings underscore the urgent need for policies that empower, technologies that enable, and mindsets that inspire. By addressing these challenges comprehensively, policymakers, educators, and stakeholders can create an educational landscape where every student and educator can thrive in the digital age. The insights from this research guide the evolution of post-secondary technical institutions in Nigeria and offer universal principles for educational institutions worldwide. The vision of a future with equal access to quality education for all is attainable through collaborative efforts and a commitment to embracing the potential of technology in higher education.

Keywords: Higher Education, ICT, National Diploma and Higher National Diploma, Nigeria

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1. Introduction

In the rapidly evolving education landscape, the integration of Information and Communication Technologies (ICT) has emerged as a transformative force, reshaping traditional teaching methods and enhancing learning experiences. This study delves into the complexities of ICT adoption in Nigerian higher education, focusing on a community college setting. The significance of this study is underscored by the fact that Nigeria, like many other developing nations, is at a critical juncture where harnessing the potential of ICT-driven education could pave the way for addressing significant challenges in the educational sector.

Nigeria stands on the cusp of a digital revolution in education, yet the country still needs to fully embrace the possibilities offered by ICT-driven learning (Idowu & Esere, 2013). Access to education remains a pressing issue, and ICT has the potential to bridge this gap, offering solutions to challenges in the educational system (Poudel, 2022). However, the successful integration of ICT in education is hindered by various factors such as inadequate funding, lack of infrastructure, and training gaps (Evroro & Okumoku-Evroro, 2014). This study aims to shed light on these challenges within the unique context of post-secondary technical institutions in Nigeria.

In the Nigerian educational landscape, the challenges related to ICT adoption are multifaceted. A complex web of barriers must be comprehensively understood from the lack of e-learning infrastructures in tertiary institutions (Achuonye & Diseph, 2021) to the resistance faculty members face in utilizing ICT tools (Alharbi & Lally, 2017). Furthermore, the socio-economic constraints, infrastructural challenges, and attitudinal factors concerning Nigeria compound the issue (Eze et al., 2018; Ibrahim et al., 2018). Addressing these challenges is vital for the progress of education in Nigeria and ensuring that the nation's youth are prepared to thrive in the digital age.

Several studies have explored the ICT landscape in education in Nigeria and globally. From examining teachers' perspectives on ICT curriculum effectiveness in the UAE (Lahiani et al., 2023) to understanding the factors influencing students' use of e-learning facilities in private higher education institutions in Nigeria (Eze et al., 2020), a wealth of research exists. These studies highlight the transformative potential of ICT in education, yet they also underscore the barriers that impede its seamless integration.

Against this backdrop, this conceptual study comprehensively analyzes the challenges and opportunities

related to ICT integration in a Nigerian community college. By delving into the intricate web of factors hindering the adoption of ICT tools, this study aims to contribute valuable insights that can inform policies and strategies for post-secondary technical institutions and the broader Nigerian higher education sector. In doing so, it seeks to pave the way for a more inclusive, accessible, and effective educational system in Nigeria, aligning with the global trend of harnessing ICT for educational advancement.

2. The Concept of Knowledge Sharing

Knowledge sharing in higher education institutions is a multifaceted concept encompassing the exchange, dissemination, and collaborative creation of knowledge among individuals within a community college setting (Ganguly et al., 2019). Knowledge sharing involves transmitting information, expertise, experiences, and skills among educators, students, and staff members. It is a vital process that fosters a culture of continuous learning and innovation. In a community college context, where diverse knowledge backgrounds converge, knowledge sharing becomes even more significant, as it enriches learning experiences and nurtures a supportive academic community (Swanson et al., 2020).

Knowledge sharing in higher institutions is fundamental for several reasons. It enhances the quality of education by allowing educators to draw upon a collective pool of expertise, ensuring a well-rounded and comprehensive learning experience for students (Akram et al., 2020). Similarly, it promotes collaboration and teamwork, encouraging students and faculty members to collaborate on projects, research endeavors, and academic initiatives. Also, it cultivates critical thinking and problem-solving skills, as exposure to different perspectives and ideas challenges individuals to analyze and evaluate information effectively (Ahmad & Karim, 2019). Moreover, knowledge sharing stimulates innovation and creativity, enabling the development of new teaching methods, research methodologies, and solutions to educational challenges.

In the contemporary digital age, technology is pivotal in facilitating knowledge sharing within higher education institutions (Prasad & Gupta, 2020). Online platforms, collaborative tools, and digital repositories provide accessible and efficient channels for sharing educational resources, research findings, and innovative teaching techniques. These technologies transcend geographical boundaries, allowing for global knowledge exchange and collaboration. Moreover, social media platforms and online forums create interactive spaces where students and educators can engage in discussions, share insights, and participate in collaborative learning communities, fostering a culture of active knowledge sharing.

While knowledge sharing is essential, it has challenges (Afsar et al., 2019). One significant challenge is the resistance to change and traditional hierarchical structures within academic institutions, which might hinder the free flow of information. Additionally, intellectual property rights and data security concerns often arise in the context of knowledge sharing. Overcoming these challenges requires a proactive approach, emphasizing the importance of creating a supportive organizational culture that values and rewards knowledge sharing. Implementing clear policies, providing training programs, and promoting awareness about the benefits of knowledge sharing can mitigate these challenges and create an environment conducive to open collaboration.

Therefore, knowledge sharing is a cornerstone of practical education in higher institutions, fostering an environment of mutual learning, collaboration, and innovation. Embracing technology and cultivating a culture that promotes knowledge sharing can significantly enhance the educational experience for both educators and students. Moving forward, institutions must invest in robust digital infrastructure, provide training for faculty and staff on effective knowledge-sharing practices, and encourage the development of interdisciplinary collaborations. By nurturing a culture of knowledge sharing, post-secondary technical institutions can prepare students for future challenges, equipping them with the skills and insights needed to thrive in a rapidly changing world.

3. Knowledge-Sharing Models and Theories

In the conceptual study, exploring Knowledge Sharing Models and Theories is crucial for understanding the dynamics of knowledge dissemination and utilization within educational institutions (Swanson et al., 2020). Knowledge-sharing models and theories provide frameworks to comprehend how knowledge is created, shared, and applied in organizational settings, such as post-secondary technical institutions. This discussion will delve into five prominent knowledge-sharing models and theories, shedding light on their significance in the study context.

Social Exchange Theory posits that individuals engage in a reciprocal relationship where they share knowledge based on the expectation of receiving benefits in return. In the context of the community college case study, this Theory suggests that faculty members and students share knowledge within the institution expecting support, recognition, or intellectual stimulation. By understanding the social exchanges underlying knowledge sharing, the study can identify the motivations and incentives that drive individuals to disseminate knowledge within the community college setting.

Communities of Practice theory emphasizes the role of social interactions and shared interests in knowledge sharing (Anthony et al., 2020). Different departments, faculties, and student groups within a community college can be considered distinct communities of practice. Understanding how these communities form, share knowledge,

and develop expertise is vital. This Theory helps identify the informal networks and collaborative spaces where knowledge is exchanged, enabling the study to explore the dynamics of knowledge sharing within these communities.

The Knowledge Management Cycle involves knowledge creation, capture, storage, dissemination, and application (Afsar et al., 2019). This model is pertinent to understanding the systematic flow of knowledge within a community college. By mapping out how knowledge is generated (research, teaching), stored (databases, documents), and disseminated (lectures, seminars), the study can identify potential bottlenecks and inefficiencies in knowledge-sharing processes. Implementing effective knowledge management strategies can enhance the overall knowledge ecosystem of the community college.

Information-processing Theory focuses on how individuals acquire, store, and use information (Vuong et al., 2022). In the context of a post-secondary technical institution, this Theory can be applied to understand how students and faculty process knowledge. The study can uncover barriers that hinder effective knowledge sharing by exploring cognitive processes, such as attention, encoding, storage, and retrieval. Understanding these cognitive aspects can aid in designing interventions and educational strategies that facilitate better knowledge dissemination and retention among students and faculty.

Innovation Diffusion Theory explores how new ideas and innovations spread within a social system (Centobelli et al., 2023). In the context of technical colleges, this Theory can be applied to understand the adoption of innovative teaching methods, technologies, and educational practices. The study can identify the drivers and barriers to knowledge sharing related to cutting-edge educational approaches by examining the factors influencing the institution's acceptance and integration of innovative ideas. This understanding can inform community college administrators and educators on fostering a culture of innovation and knowledge sharing.

By integrating these knowledge-sharing models and theories into the conceptual study, researchers can comprehensively understand the intricate processes involved in knowledge dissemination within the community college setting. Analyzing these frameworks will provide valuable insights into the motivations, social structures, cognitive aspects, and innovative practices underpinning knowledge sharing, thereby enhancing educational experiences and outcomes within the institution.

4. Knowledge Sharing in Higher Education

Knowledge sharing in higher education, particularly in developing countries like Nigeria and Nepal, faces numerous challenges and opportunities, especially with integrating Information and Communication Technologies (ICT). Studies by Idowu Esere (2013) and Poudel (2022) highlight the potential of ICT in addressing educational challenges, improving access, and enhancing the quality of education. Despite these possibilities, various barriers, such as lack of infrastructure, inadequate funding, and limited teacher training, hinder the effective implementation of ICT-driven education.

Several studies, including those by Evroro & Okumoku-Evroro (2014) and Achuonye & Diseph (2021), emphasize the existing challenges in implementing ICT in tertiary institutions, including insufficient facilities, unreliable power supply, and lack of enabling environments. These challenges hinder effective teaching and learning. Adequate funding, supportive policies, and investments in teacher training are essential solutions suggested by researchers to overcome these obstacles and facilitate the integration of ICT in higher education.

As discussed in studies like Lahiani et al. (2023) and Dambo and Uranta (2018), teacher perspectives play a crucial role in ICT integration. These perspectives range from the effectiveness of technology use in classrooms to awareness and utilization among students. Addressing these perspectives through professional development, innovative teaching methods, and accessible ICT resources is vital in ensuring successful knowledge sharing in higher education institutions. Studies such as Pavel et al. (2015) and Linus (2019) underscore the transformative impact of ICT on teaching and learning processes. ICT enhances engagement, motivation, and skills acquisition among students. Additionally, it shifts the role of teachers from content experts to guides and mentors. However, the ethical use of ICT tools and the need for a stable power supply are crucial considerations in this technological evolution.

Looking ahead, continuous research and investment are essential to address the challenges outlined in various studies. Policymakers, educators, and stakeholders must collaborate to create supportive environments for ICT integration in higher education. Emphasizing user-friendly interface training programs and addressing infrastructural constraints can significantly enhance knowledge sharing in higher education institutions. Moreover, adopting a student-centered approach and integrating ICT tools effectively into the curriculum can ensure that future generations benefit from a technologically enriched educational experience.

5. Factors Influencing Knowledge Sharing in Higher Education

Knowledge sharing in higher education institutions, particularly in post-secondary technical institutions, is influenced by many factors shaping the landscape of information dissemination and educational practices. This discussion will delve into five key factors identified in various studies, focusing on the Nigerian and global higher

education contexts. Firstly, the integration of ICT plays a pivotal role in facilitating knowledge sharing in higher education. Idowu and Esere (2013) emphasized the importance of ICT in enhancing access to education, especially in developing countries like Nigeria. The availability of ICT tools and infrastructure and the skills needed to use them effectively is crucial for teachers and students. Challenges related to access, infrastructure management, technological skills, and curriculum alignment must be addressed to fully leverage ICT for knowledge sharing (Poudel, 2022; Evroro & Okumoku-Evroro, 2014; Talebian et al., 2014).

Equally, adequate funding and a supportive policy environment are imperative for promoting knowledge sharing in higher education. Idowu and Esere (2013) emphasized the need for sound policies and financial support for ICT-driven initiatives. Moreover, Lahiani et al. (2023) highlighted the importance of professional development opportunities and cooperation between institutions. These factors create an enabling environment for teachers to integrate technology effectively into their classrooms. Also, the availability of educational resources, both digital and physical, is a critical factor influencing knowledge sharing. Achuonye and Diseph (2021) found that the need for e-learning infrastructures hindered effective teaching and learning in tertiary institutions. Efforts to provide access to course materials, libraries, and digital resources are essential for knowledge dissemination. In the same vein, the attitudes of both faculty and students significantly impact knowledge sharing. Eze et al. (2018) highlighted that traditional teaching methods and resistance to change are prevalent in Nigerian tertiary institutions. Faculty training and cultivating positive attitudes toward technology adoption are essential for successful knowledge sharing.

Furthermore, the usability of ICT tools and the availability of technical support are key factors affecting knowledge sharing. Ibrahim et al. (2018) emphasized the importance of user-friendly e-learning software and hardware. Providing technical assistance to students and faculty members contributes to effectively utilizing technology for educational purposes. Hence, knowledge sharing in higher education institutions, particularly in the context of post-secondary technical education (ND/HND awarding institutions), is influenced by a complex interplay of factors. Integration of ICT, institutional support, access to resources, attitudes, and technology usability and support all contribute to the success of knowledge dissemination. Addressing these factors comprehensively is essential for creating a conducive environment for effective and quality education in higher institutions.

6. Collaborative Learning Environments and Knowledge Exchange

In the contemporary landscape of higher education, integrating Information and Communication Technologies (ICT) has become pivotal in addressing challenges post-secondary technical institutions face, particularly in developing countries like Nigeria and Nepal. The insights provided by various studies shed light on the transformative potential of ICT-driven education, emphasizing collaborative learning environments and knowledge exchange. For instance, as Idowu and Esere (2013) highlighted, Nigeria needs more funding and policy frameworks to integrate ICT into education. However, collaborative learning environments in these institutions can bridge this gap. By addressing challenges related to infrastructure and skills, these institutions can leverage ICT tools, facilitating collaborative learning experiences. As suggested by Poudel (2022), adequate training and support mechanisms are crucial in empowering educators and students to navigate the digital landscape effectively.

The study by Lahiani et al. (2023) in UAE emphasizes the importance of teachers' roles in integrating technology effectively. Professional development, school cooperation, and teacher autonomy are critical to creating collaborative learning environments. Post-secondary technical education institutions can adopt similar strategies, fostering a culture of innovation and collaboration among educators, thereby enhancing knowledge exchange. Similarly, Evroro & Okumoku-Evroro (2014) highlight the infrastructural hindrances in ICT integration within tertiary institutions. Post-secondary technical institutions must advocate for adequate funding to overcome challenges such as unreliable electricity supply and lack of ICT facilities. Addressing these infrastructural issues is fundamental to creating an environment conducive to collaborative learning and knowledge exchange.

Achuonye and Diseph's (2021) study underscores the importance of e-learning facilities in tertiary institutions. To enhance collaborative learning environments, post-secondary technical institutions should focus on upgrading their websites, providing diverse learning materials, and fostering a student-friendly interface. Engaging and interactive platforms can encourage students to actively participate, collaborate, and exchange knowledge with peers and educators. Similarly, Paiko's (2021) assessment of e-learning technologies in Nigeria highlights the potential for student-driven learning. Post-secondary technical institutions can leverage this trend by empowering teachers as facilitators and mentors, guiding students in collaborative learning journeys. By embracing student-centered approaches, these institutions can enhance engagement and foster a culture of knowledge exchange.

The studies by Pavel et al. (2015) and Talebian et al. (2014) emphasize the role of policy frameworks and supportive environments. Post-secondary technical institutions must advocate for policies encouraging ICT and e-learning integration. Additionally, addressing the specific needs of fields like agriculture, as highlighted by Talebian et al. (2014), requires tailored approaches, ensuring that collaborative learning environments cater to diverse disciplines within these tertiary institutions. Hence, collaborative learning environments in these

institutions can thrive through the strategic integration of ICT tools. By addressing challenges, empowering educators and students, and advocating for supportive policies, these institutions can create dynamic spaces for knowledge exchange, fostering a generation of well-equipped individuals prepared for the challenges of the modern world.

7. Challenges and Barriers in Knowledge Sharing

Knowledge sharing in higher institutions, especially in developing countries like Nigeria and Nepal, faces numerous challenges and barriers, hindering the effective integration of Information and Communication Technologies (ICTs) in education. One significant challenge is the need for ICT infrastructure and funding. Studies by Idowu & Esere (2013) and Evroro & Okumoku-Evroro (2014) highlighted the need for more ICT facilities in tertiary institutions, unreliable electricity supply, and inadequate funding. These limitations hinder the widespread adoption of ICT tools for teaching and learning, creating a digital divide among students and educators. Another barrier is limited access and skills. Poudel (2022) emphasized the challenges faced in Nepal regarding access to ICT tools and the skills required to use them effectively. Similarly, Eze et al. (2018) found that adequate internet facilities and training hinder the adoption of e-learning facilities in Nigerian tertiary institutions. Insufficient training and technical expertise among educators further limit the successful implementation of ICT-driven education methods.

Attitudes and Resistance also pose significant challenges. Alharbi & Lally (2017) and Ibrahim et al. (2018) identified faculty members' Resistance to adopting ICT in teaching practices. Resistance often stems from a lack of familiarity with technology, fear of change, or skepticism about the effectiveness of ICT tools. This Resistance can impede the integration of e-learning technologies into the curriculum, limiting their potential benefits for students. Inadequate Policy Support further exacerbates the challenges faced in knowledge sharing. Pavel et al. (2015) mention that the need for more supportive policies and frameworks hampers the effective implementation of ICT in education systems. With clear guidelines and policies to promote the integration of ICT, institutions can harness the full potential of technology for teaching and learning.

Socio-economic factors also play a role. Galagedarage and Indrasena (2023) highlighted economic challenges, such as the cost of data and lack of ICT tools, making it difficult for students to participate in e-learning activities. Additionally, the socio-economic disparities among students affect their ability to access and benefit from ICT-driven educational resources, creating an inequality in learning opportunities. Equally, Traditional Teaching Methods and Mindsets hinder the shift towards digital learning. Eze et al. (2018) pointed out that traditional teaching and assessment methods are still prevalent in Nigerian tertiary institutions, posing a barrier to adopting e-learning facilities. The mindset that traditional methods are more effective than digital ones can deter educators from exploring innovative ICT-driven teaching techniques.

Therefore, addressing these challenges requires a multi-faceted approach, including increased investment in ICT infrastructure, comprehensive training programs for educators, initiatives to change attitudes and mindsets, formulation of supportive policies, and efforts to bridge the socio-economic gap among students. Overcoming these barriers is essential to fostering effective knowledge sharing and enhancing the quality of education in higher institutions.

8. Conclusion

Despite the potential transformative power of ICT, this study has delved deep into the multifaceted complexities inhibiting its seamless adoption. The barriers are formidable, from inadequate funding and lack of infrastructure to entrenched attitudes and resistance among faculty members. However, within these challenges lies the opportunity for growth and progress. This study serves as a critical milestone in understanding the intricacies of ICT integration within these institutions and across the broader spectrum of Nigerian higher education. By recognizing these barriers and comprehensively addressing them, policymakers, educators, and stakeholders can pave the way for a future where knowledge sharing is not just a goal but a lived reality. The findings underscore the urgent need for supportive policies, substantial investments, targeted training programs, and a cultural shift within academic institutions. The path forward demands collaboration, innovation, and a resolute commitment to creating an educational landscape where every student and educator can thrive in the digital age.

In the broader global context, the challenges and opportunities outlined in this study echo the sentiments shared by developing nations worldwide. The struggle to bridge the digital divide, confront resistance to change, and navigate the complexities of integrating ICT into education is a universal endeavor. As we conclude this study, it is imperative to recognize that the journey toward effective knowledge-sharing in higher education is ongoing. It requires continual adaptation, collaboration, and a collective willingness to embrace the potential of technology. By learning from the insights provided by this research, not only can post-secondary technical institutions in Nigeria evolve, but the lessons drawn can also serve as guiding principles for educational institutions globally. The vision of a future where everyone, regardless of their socioeconomic background, has equal access to quality education is attainable. It is a future shaped by policies that empower, technologies that enable, and mindsets that

inspire. In the tapestry of higher education, knowledge sharing must be woven into the fabric of institutional culture, fostering an environment where ideas flow freely, collaboration knows no boundaries, and learning becomes a truly transformative experience.

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