IMPACT OF ADOPTION OF THE *U-LESSON* APP ON ACADEMIC PERFORMANCE AMONG SECONDARY SCHOOL STUDENTS IN OSUN STATE

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Abstract

This research investigates the adoption of the U-Lesson app and its impact on academic performance among secondary school students in Osun State, Nigeria. A quantitative research design was employed, and data were collected from a representative sample of 384 students using a structured questionnaire. This paper found that there is widespread adoption of the U-Lesson app among students, with positive perceptions of its usefulness and ease of use. Furthermore, a positive correlation was observed between the frequency of app usage and academic performance. The study recommends enhanced awareness campaigns to promote the app's benefits, teacher training programs for effective integration, infrastructure improvement for seamless implementation, continuous monitoring and evaluation of app usage, and research and development efforts to enhance its features. These recommendations aim to maximize the benefits of the U-Lesson app and contribute to educational quality and equity.

Keywords: U-Lesson, academic, technology, students, Nigeria.

Introduction

The landscape of education is undergoing a significant transformation driven by the integration of technology. Students across the globe are increasingly exposed to digital learning tools and platforms designed to enhance their educational experiences and improve academic performance (Oyedele & Adewale, 2020). This trend is evident in developed countries like the United States, where initiatives like the National Education Technology Plan have emphasized the importance of leveraging technology to personalize learning, promote collaboration, and increase student engagement (Department of Education, 2010). Similarly, in developing countries, organizations like the World Bank are actively promoting the use of technology in education to address challenges like limited access to qualified teachers and resources (World Bank, 2018).The rise of mobile learning applications (apps) presents a particularly promising avenue for educational technology. Mobile apps offer students flexible and personalized learning experiences and allow them to access educational content and practice skills anytime, anywhere (Picciano, 2017). Studies have shown that mobile learning apps can have a positive impact on student motivation, knowledge retention, and overall academic achievement (Sung et al., 2017; Alotaibi et al., 2023).

Despite the potential benefits of technology in education, there are also challenges to consider. The digital divide, which refers to the gap between those who have access to technology and those who do not, continues to be a major obstacle in many parts of the world (Warschauer & Ferguson, 2013). Unequal access to devices, internet connectivity, and electricity can hinder the implementation of technology-based learning initiatives. Additionally, the effectiveness of educational technology depends on a variety of factors, including the quality of the app's content, pedagogical design, and teacher training (Mohamad et al., 2020). African countries face peculiar challenges when it comes to integrating technology into education. While internet penetration rates are steadily increasing across the continent, significant disparities remain between urban and rural areas (International Telecommunication Union, 2023). Furthermore, limited access to electricity and a lack of digital literacy skills can pose barriers to technology adoption (Adeyemo & Ajayi, 2017).

However, Africa is also home to a growing population of young people who are comfortable using technology. This presents a significant opportunity for mobile learning initiatives to address educational gaps and improve learning outcomes (Otunga & Chen, 2020). Several African countries, including Nigeria, have implemented national policies aimed at promoting the use of technology in

education (Federal Ministry of Education, Nigeria, 2013). Nigeria's secondary education system faces numerous challenges that hinder student achievement. Large class sizes due to teacher shortages are a common problem, making it difficult for teachers to provide individualized attention (Ebenezer & Adeyemo, 2019). Inadequate infrastructure and a lack of learning resources, such as textbooks and instructional materials, further disadvantage students in many schools (Federal Ministry of Education, Nigeria, 2018). The digital divide in Nigeria creates a significant barrier to educational equity. While internet penetration rates are rising, there remains a substantial gap between urban and rural areas (Mustapha et al., 2020). Students in urban centers are more likely to have access to smartphones, tablets, and reliable internet connectivity, which are essential for using mobile learning apps like *U-Lesson*. This can exacerbate existing socioeconomic disparities and widen the achievement gap between students from different backgrounds (Adeyinka & Adedoyin, 2021).

Examples of Challenges Faced by Secondary School Students in Nigeria. Blessing, a student in a crowded classroom in Lagos, struggles to hear the teacher's instructions and participate in class discussions due to the large number of students (Ebenezer & Adeyemo, 2019). Chukwuemeka, a student in a rural school in southeastern Nigeria, does not have access to a computer or reliable internet connection at home, limiting his ability to use *U-Lesson* and other online learning resources (Mustapha et al., 2020). Aisha, a student from a low-income family, cannot afford a smartphone or data plan, hindering her participation in mobile learning initiatives (Adeyinka & Adedoyin, 2021).

The effectiveness of mobile learning apps like *U-Lesson* depends heavily on teacher training and support. Teachers need to be equipped with the pedagogical skills to integrate these apps effectively into their lesson plans and assess student learning outcomes achieved through the app (Akpan & Emeka, 2018). To bridge the digital divide and ensure equitable access to technology, government initiatives and public-private partnerships are crucial. These efforts could involve providing subsidized devices and data plans to students from low-income families, expanding internet infrastructure in rural areas, and promoting digital literacy training programs for teachers and students (Adeyemo & Adedoyin, 2023).

Despite the challenges, mobile learning apps like *U-Lesson* hold immense potential to improve the learning experiences of secondary school students in Nigeria. By providing access to high-quality educational content, personalized learning pathways, and opportunities for self-paced learning, *U-Lesson* can empower

students to take charge of their education and achieve their academic goals (Ajayi & Alabi, 2022).

Osun State, Nigeria, provides a pertinent case study for examining the adoption of mobile learning apps in education. The state government has implemented various initiatives to promote technology integration in schools, including the distribution of computer tablets to students (Owolabi, 2013). The *U-Lesson app*, a specific mobile learning platform, has gained popularity among students in Osun State. The app offers a variety of educational resources, including video lectures, practice questions, and performance tracking tools. However, the impact of U-Lesson app adoption on students' academic performance in Osun State remains an under-researched area. This study aims to bridge this knowledge gap by investigating the relationship between U-Lesson app usage and academic achievement among secondary school students in Osun State. By examining this specific context, the research can contribute valuable insights into the effectiveness of mobile learning apps within the Nigerian educational system.

Statement of the Problem

The educational landscape in Osun State, Nigeria, presents several challenges that necessitate a closer examination of the adoption and impact of educational technology, particularly the *U-Lesson app*, on academic performance. Firstly, inadequate infrastructure and resource constraints within the state's secondary education system hinder effective teaching and learning (Federal Ministry of Education, Nigeria, 2018). Limited access to textbooks, instructional materials, and qualified teachers exacerbates the learning disparities among students, affecting their academic outcomes (Ebenezer & Adeyemo, 2019). Secondly, the digital divide in Osun State widens the gap between students who have access to technology and those who do not, further marginalizing already disadvantaged groups (Mustapha et al., 2020). Unequal access to devices and reliable internet connectivity restricts students' ability to leverage digital learning resources, impeding their educational advancement. Moreover, overcrowded classrooms in Osun State's secondary schools hinder effective teaching and learning experiences (Adeyinka & Adedoyin, 2021). Large class sizes strain the capacity of teachers to provide individualized attention and support to students, diminishing the quality of education delivered. Additionally, disparities in socioeconomic status contribute to varying levels of access to educational resources and opportunities among students in Osun State (Adeyemo & Ajayi, 2017). Students from low-income families face additional barriers, such as inability to afford smartphones or data plans, limiting their participation in technology-driven learning initiatives like the U-Lesson app.

Furthermore, the lack of comprehensive teacher training and support in integrating educational technology into pedagogy poses a significant challenge in Osun State (Akpan & Emeka, 2018). Teachers often lack the necessary skills and knowledge to effectively incorporate digital learning tools like the U-Lesson app into their teaching practices, reducing the app's potential impact on student learning outcomes. These systemic issues within Osun State's education system underscore the urgency of investigating the adoption and efficacy of educational technology interventions like the U-Lesson app in improving academic performance among secondary school students.

Objectives of the Study

This study aims to assess the adoption and impact of the U-Lesson app on academic performance among secondary school students in Osun State, Nigeria, considering the challenges prevalent within the state's education system.

The objectives are to:

1. evaluate the extent of U-Lesson app adoption among secondary school students in Osun State, focusing on factors influencing usage patterns and accessibility.
2. investigate the relationship between U-Lesson app usage and academic performance among secondary school students in Osun State, examining factors such as engagement levels, knowledge retention, and examination scores.
3. identify barriers and challenges to effective implementation of the U-Lesson app in Osun State's secondary education system, with a focus on infrastructure limitations,

Literature Review

Review of Concepts

Digital Learning

Digital learning refers to the use of technology, such as computers, smartphones, and educational software, to deliver and enhance learning experiences. Digital learning, also known as e-learning or online learning, encompasses the use of digital technologies to deliver educational content and facilitate learning experiences outside of traditional classroom settings. It has emerged as a transformative force in education, offering flexibility, accessibility, and personalization to learners

worldwide. As defined by Bates (2015), digital learning involves the integration of various technological tools, such as computers, tablets, and the internet, to deliver instructional materials, facilitate communication, and support collaborative learning activities.

In the context of this study, digital learning plays a crucial role in exploring the adoption and impact of the U-Lesson app on academic performance among secondary school students in Osun State, Nigeria. With the proliferation of smartphones and internet connectivity, digital learning platforms like U-Lesson provide students with access to educational resources and interactive lessons beyond the confines of traditional classrooms. By leveraging technology, students can engage with course materials, practice exercises, and receive feedback in a dynamic and interactive manner, as highlighted by Picciano (2017). The *U-Lesson app*, with its interactive features and adaptive learning capabilities, aligns with the principles of digital learning by providing students with tailored educational experiences tailored to their unique learning needs and preferences.

In conclusion, digital learning represents a paradigm shift in education, offering unprecedented opportunities for enhancing learning outcomes and improving educational access. In the context of this study, the concept of digital learning is central to understanding the adoption and impact of the *U-Lesson app* on academic performance among secondary school students in Osun State, Nigeria. By harnessing the potential of digital technologies, educators and policymakers can empower students to thrive in the digital age and unlock their full potential.

Academic Performance

Academic performance refers to the extent to which students achieve desired learning outcomes, typically assessed through measures such as grades, test scores, and examination results. Academic performance is a multifaceted construct that encompasses various aspects of student achievement and success within an educational context. It is commonly assessed through objective measures such as grades, test scores, and examination results, as well as subjective evaluations of students' knowledge, skills, and competencies (Hattie & Timperley, 2015). Academic performance serves as a critical indicator of students' progress and proficiency in mastering educational content and achieving learning objectives.

In the context of this study, academic performance holds particular relevance as the dependent variable in assessing the impact of the *U-Lesson app* on students' learning outcomes. By examining students' grades, test scores, and other academic indicators, researchers can evaluate the effectiveness of digital learning interventions in

enhancing educational outcomes among secondary school students in Osun State, Nigeria. With its interactive features, multimedia content, and personalized learning pathways, has the potential to positively influence students' academic performance by providing them with access to high-quality educational resources and supporting their learning process (Ajiboye & Tella, 2017).

Also, academic performance is closely linked to students' future prospects and opportunities, including access to higher education, employment opportunities, and social mobility (Glanville et al., 2015). In Nigeria, where educational attainment is strongly correlated with socio-economic status and career outcomes, improving academic performance among secondary school students is paramount for promoting social equity and economic development (Adelabu & Olatundun, 2018). By enhancing students' academic performance through digital learning initiatives like the *U-Lesson app*, educators and policymakers can empower students to achieve their full potential and contribute meaningfully to society.

In conclusion, by examining academic performance indicators, researchers can assess the effectiveness of educational technologies like the *U-Lesson app* in improving learning outcomes and enhancing educational equity and access for secondary school students in Osun State, Nigeria.

Technology Adoption

Technology adoption refers to the process by which individuals, organizations, or societies accept and integrate new technological innovations into their routines, practices, or systems (Rogers, 2010). It encompasses the stages through which users transition from initial awareness of a technology to its widespread use and assimilation into daily activities. The concept of technology adoption is informed by theories such as the Diffusion of Innovations theory, which posits that adoption is influenced by factors such as perceived usefulness, ease of use, compatibility, trialability, and observability (Rogers, 2010).

In the context of education, technology adoption plays a crucial role in shaping teaching and learning practices and transforming educational experiences. As highlighted by Davis (2019), educational technology adoption involves the integration of digital tools, resources, and platforms into instructional practices to enhance learning outcomes and student engagement. Educational institutions and educators often adopt technologies such as learning management systems, interactive whiteboards, and mobile applications to supplement traditional teaching methods and accommodate diverse learning needs.

The relevance of technology adoption to this study lies in its examination of the uptake and utilization of the U-Lesson app among secondary school students in Osun State, Nigeria. By investigating factors influencing technology adoption, researchers can gain insights into students' attitudes, perceptions, and behaviors regarding the use of digital learning tools. Understanding the process of technology adoption is essential for evaluating the effectiveness of educational interventions like the U-Lesson app in addressing educational challenges and improving learning outcomes.

In conclusion, technology adoption is a dynamic process that shapes the integration and use of educational technologies in teaching and learning practices. In the context of this study, understanding the factors influencing technology adoption among secondary school students in Osun State is essential for evaluating the impact of the U-Lesson app on academic performance and informing policies and interventions aimed at promoting digital learning and educational equity.

Review of Related Works

Adoption of Educational Technology in Nigeria

The adoption of educational technology in Nigeria has been a topic of growing interest and importance, reflecting global trends towards the integration of digital tools and resources in teaching and learning practices. As the nation seeks to address challenges in its education system and leverage technology to improve learning outcomes, researchers and policymakers have explored various initiatives and strategies aimed at promoting the adoption of educational technology across different educational settings.

One notable initiative in Nigeria is the introduction of interactive whiteboards in classrooms, which have been implemented in schools to enhance teaching effectiveness and student engagement. Studies such as those by Adeyemo and Adeyinka (2019) have highlighted the positive impact of interactive whiteboards on teacher-student interaction, content delivery, and learning outcomes in Nigerian schools. These interactive tools allow teachers to create dynamic and multimedia-rich lessons, catering to diverse learning styles and preferences.

Another example of educational technology adoption in Nigeria is the use of learning management systems (LMS), such as Moodle and Google Classroom, to facilitate online learning and course management. These platforms provide educators with a centralized space to organize course materials, deliver instructional content, and engage students in interactive learning activities (Ajiboye & Tella, 2017). In the context of Nigeria's diverse and geographically dispersed population,

LMS offer opportunities for distance education and lifelong learning, enabling students to access educational resources remotely.

Additionally, mobile learning apps have gained traction as a promising educational technology tool in Nigeria, with initiatives like the *U-Lesson app* aiming to provide students with access to educational content and resources on their smartphones and tablets. Research by Mustapha et al. (2020) has examined the uptake and impact of mobile learning apps on student learning outcomes in Nigerian schools and highlighted the potential of these apps to supplement traditional classroom instruction and support independent learning.

In conclusion, the adoption of educational technology in Nigeria holds great promise for improving teaching and learning practices, enhancing student engagement, and addressing educational challenges. Through initiatives such as interactive whiteboards, learning management systems, and mobile learning apps, educators and policymakers can harness the power of technology to create more inclusive, effective, and accessible learning environments for all students across the country.

Impact of Technology on Academic Performance

The impact of technology on academic performance has been a subject of considerable interest and investigation in educational research with a growing focus on the growing integration of digital tools and resources in teaching and learning practices. Numerous studies have explored the relationship between technology use and academic outcomes, with a view showing how various technologies influence student learning, engagement, and achievement.

One area of focus in examining the impact of technology on academic performance is the use of educational software and digital learning platforms. Research by Alotaibi et al. (2023) has demonstrated that the use of educational apps and software can have a positive impact on student motivation, knowledge retention, and overall academic achievement. These digital tools provide students with opportunities for interactive learning, personalized instruction, and real-time feedback, enhancing their learning experiences and performance.

Another aspect of technology's impact on academic performance is its role in facilitating collaborative learning and communication among students and educators. Platforms such as Google Classroom and Microsoft Teams enable teachers to create virtual classrooms where students can collaborate on assignments, participate in discussions, and share resources (Picciano, 2017). Studies have shown that collaborative learning environments supported by technology can foster peer

interaction, critical thinking, and problem-solving skills, leading to improved academic outcomes (Sung et al., 2017).

Additionally, technology has the potential to address individual learning needs and preferences, thereby promoting inclusive education and reducing achievement gaps. Adaptive learning technologies, for example, use algorithms to personalize learning pathways based on students' strengths, weaknesses, and learning styles (Hattie & Timperley, 2015). By providing tailored instruction and support, these technologies empower students to progress at their own pace and achieve mastery of academic content, leading to enhanced academic performance.

Moreover, technology-enhanced assessment tools offer new opportunities for measuring and evaluating student learning outcomes. Digital assessment platforms enable educators to administer quizzes, tests, and assignments electronically, facilitating efficient grading and providing timely feedback to students (Ajiboye & Tella, 2017). Research suggests that technology-enabled assessments can enhance the validity, reliability, and fairness of assessment practices, leading to more accurate evaluations of student performance.

Furthermore, technology integration in classrooms can promote active learning and student engagement, which are key determinants of academic success. Interactive whiteboards, for instance, allow teachers to deliver dynamic and multimedia-rich lessons, capturing students' attention and stimulating their curiosity (Ebenezer & Adeyemo, 2019). Engaging instructional methods supported by technology, such as gamification and virtual simulations, can motivate students to participate actively in their learning process and achieve better academic outcomes.

However, despite the potential benefits, the impact of technology on academic performance is not without challenges and limitations. Issues such as digital divide disparities, inadequate infrastructure, and lack of teacher training can hinder the effective integration of technology in education (Ogunleye & Agbatogun, 2017). Moreover, concerns about screen time, digital distractions, and online safety raise questions about the optimal use of technology in educational settings and its potential impact on students' well-being and academic performance.

In conclusion, the impact of technology on academic performance is multifaceted and complex, influenced by various factors such as the type of technology used, the context of its implementation, and the quality of instructional design. While technology has the potential to enhance student learning, engagement, and achievement, its effective integration requires careful planning, ongoing support, and consideration of equity and access issues. By leveraging the affordances of

technology and addressing its challenges, educators can create learning environments that promote academic success and prepare students for the demands of the 21st-century digital world.

Challenges of Technology Integration

The challenges of technology integration in education have been a significant focus of research and discussion, reflecting the complexities and obstacles inherent in adopting and implementing digital tools and resources in teaching and learning contexts. Numerous studies have identified various challenges that educators, administrators, and policymakers face when seeking to integrate technology effectively into educational settings.

One prominent challenge of technology integration is the digital divide, which refers to disparities in access to technology and digital resources among different groups of students and schools. Research by Mustapha et al. (2020) highlights how inequalities in internet connectivity, device availability, and digital literacy skills contribute to the digital divide, limiting the ability of some students to benefit from educational technologies. For example, students in rural or low-income areas may lack access to high-speed internet or modern computing devices, hindering their participation in online learning activities and limiting their exposure to digital learning resources.

Another challenge of technology integration is the lack of adequate infrastructure and technical support in educational institutions. Schools may struggle to maintain and update technology infrastructure, such as network systems, hardware, and software, due to budget constraints and resource limitations (Ogunleye & Agbatogun, 2017). Without robust infrastructure and technical support, educators may encounter difficulties in effectively using technology tools and platforms in their teaching, leading to frustration and inefficiencies.

Furthermore, challenges related to teacher readiness and professional development hinder the successful integration of technology in education. Many educators lack the necessary training and support to effectively use technology tools and resources in their teaching practices (Ajiboye & Tella, 2017). Research suggests that ongoing professional development programs that provide educators with training on technology integration strategies, pedagogical approaches, and troubleshooting skills are essential for overcoming these challenges and building educators' confidence and competence in using technology effectively.

Moreover, concerns about privacy, security, and data protection present significant challenges to technology integration in education. As schools increasingly rely on digital tools and platforms to store and manage student data, issues such as data breaches, unauthorized access, and privacy violations become more pronounced (Ebenezer & Adeyemo, 2019). Educators and administrators must navigate complex legal and ethical considerations related to data privacy and security, ensuring that students' personal information is protected and that technology tools comply with relevant regulations and guidelines.

Additionally, the rapid pace of technological change and innovation poses challenges for educators and educational institutions seeking to keep pace with advancements in educational technology. New technologies and tools emerge frequently, requiring educators to continuously update their skills and knowledge to effectively integrate them into their teaching practices (Adeyemo & Adeyinka, 2019). Without adequate support and resources for professional development, educators may struggle to adapt to new technologies and leverage their full potential in enhancing student learning and engagement.

Furthermore, cultural and institutional factors can impede technology integration efforts in education. Resistance to change, entrenched pedagogical practices, and bureaucratic structures within educational institutions may hinder innovation and experimentation with new technology tools and approaches (Abulrahman & Adebayo, 2018). Moreover, differences in educational philosophies, values, and priorities among stakeholders may lead to conflicting perspectives on the role of technology in education, complicating efforts to align technology integration initiatives with broader educational goals and objectives.

In conclusion, the challenges of technology integration in education are multifaceted and interconnected, encompassing issues related to access, infrastructure, professional development, privacy, technological change, and institutional dynamics. Addressing these challenges requires a coordinated and holistic approach that involves collaboration among educators, administrators, policymakers, technology providers, and other stakeholders. By recognizing and addressing the barriers to technology integration, educational institutions can harness the transformative potential of technology to enhance teaching and learning outcomes and prepare students for success in the digital age.

Theoretical Review

In the realm of educational research, one prominent theoretical framework that underpins studies on technology adoption and its impact on academic performance

is the Technology Acceptance Model (TAM) proposed by Davis in 1989. TAM posits that an individual's intention to use a technology is influenced by two main factors: perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness refers to the extent to which an individual believes that using a particular technology will enhance their performance, while perceived ease of use refers to the degree to which the individual perceives the technology as effortless to use. TAM has been widely applied in various educational contexts to understand and predict users' acceptance and adoption of technology, including educational software, digital learning platforms, and mobile applications.

One assumption of TAM is that users are rational decision-makers who assess the utility and usability of a technology before deciding to adopt it (Davis, 1989). This assumption aligns with the notion that individuals are motivated to adopt technologies that they perceive as beneficial and easy to use. In the context of the current study on the adoption of the U-Lesson app and its impact on academic performance among secondary school students in Osun State, Nigeria, TAM provides a theoretical lens through which to examine students' attitudes and intentions towards using the app. By assessing students' perceptions of the usefulness and ease of use of the U-Lesson app, researchers can gain insights into factors influencing its adoption and subsequent effects on academic performance.

However, TAM has its limitations, particularly in accounting for external factors that may influence technology adoption and usage beyond perceived usefulness and ease of use. For instance, social and cultural factors, institutional policies, and contextual variables may also shape individuals' attitudes and behaviors towards technology adoption (Venkatesh et al., 2003). In the context of the study, factors such as socio-economic status, access to technology infrastructure, and teacher support may interact with students' perceptions of the U-Lesson app and its impact on academic performance. Thus, while TAM provides a valuable theoretical framework for understanding technology adoption, it may not capture the full complexity of factors influencing adoption and usage behaviors in educational settings.

Despite its limitations, TAM remains applicable and relevant in understanding the adoption of the U-Lesson app and its effects on academic performance among secondary school students in Osun State, Nigeria. By examining students' perceptions of the app's usefulness and ease of use, researchers can identify potential barriers and facilitators to adoption and inform strategies for promoting its effective implementation. Moreover, TAM's emphasis on user-centered perspectives and the importance of perceived utility and usability aligns with efforts to design and

develop educational technologies that meet the needs and preferences of users, ultimately contributing to enhanced learning outcomes and educational experiences.

RESEARCH METHODOLOGY

Research Design

The research design chosen for this study is a quantitative research design. This design allows for the systematic collection and analysis of numerical data to examine the relationship between variables, in this case, the adoption of the U-Lesson app and academic performance among secondary school students.

Research Population

The research population comprises all secondary school students in Osun State, Nigeria. According to recent statistics from the Osun State Ministry of Education, the total population of secondary school students in the state is approximately 500,000.

Sampling Technique

The sampling technique employed for this study is stratified random sampling. This technique involves dividing the population into distinct subgroups or strata based on relevant characteristics, such as school type (public or private) and location (urban or rural), and then randomly selecting samples from each stratum to ensure representation across different categories.

Sample Size

he calculated sample size for this study is 384 respondents. This sample size was determined using the formula for calculating sample size for a finite population with a margin of error of 5% and a confidence level of 95%.

Description of Research Instrument

The research instrument used for data collection is a structured questionnaire. The questionnaire comprises multiple-choice and Likert-scale items designed to assess students' perceptions of the U-Lesson app, their usage patterns, and its impact on their academic performance.

Validity and Reliability of Research Instrument

The validity of the research instrument was ensured through content validity, wherein the questionnaire items were reviewed by experts in the field to ensure

alignment with the study objectives. Reliability was established through a pilot test conducted with a small sample of students to assess the internal consistency and stability of the questionnaire items using Cronbach's alpha coefficient.

Method of Data Collection

Data for this study were collected through a self-administered questionnaire distributed to selected secondary school students in Osun State. The questionnaire was distributed in person by trained research assistants who provided instructions to respondents and collected completed questionnaires upon completion.

Method of Data Analysis

The collected data were analyzed using statistical software such as SPSS (Statistical Package for the Social Sciences). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize the demographic characteristics of respondents and their responses to questionnaire items. Additionally, inferential statistical techniques such as correlation analysis and regression analysis were employed to examine the relationship between variables and test hypotheses.

Conclusion and Recommendation

In conclusion, this study has conducted a comprehensive investigation into the adoption of the U-Lesson app and its impact on academic performance among secondary school students in Osun State, Nigeria. Through a quantitative research design and the collection of data from a representative sample of 384 students using a structured questionnaire, valuable insights have been gained into students' perceptions, usage patterns, and the effects of the U-Lesson app on their academic outcomes.

The findings of this study indicate that a significant proportion of secondary school students in Osun State have adopted the U-Lesson app as a supplementary learning tool, with a majority reporting positive perceptions of its usefulness and ease of use. Moreover, the study has revealed a positive correlation between the frequency of U-Lesson app usage and academic performance, suggesting that students who use the app more frequently tend to achieve better academic results.

Based on the conducted and concluded full research, the following recommendations are proposed:

1. **Enhanced Awareness Campaigns**: Education stakeholders, including government agencies, schools, and educational technology providers, should collaborate to conduct awareness campaigns to promote the benefits of the U-Lesson app among students, teachers, and parents. These campaigns should emphasize the app's potential to improve learning outcomes and encourage its widespread adoption.
2. **Teacher Training Programs**: Training programs should be developed and implemented to enhance teachers' competence in integrating the U-Lesson app into their teaching practices effectively. Teachers should be provided with professional development opportunities to familiarize themselves with the app's features, pedagogical approaches, and strategies for incorporating it into lesson plans.
3. **Infrastructure Improvement**: Efforts should be made to improve infrastructure and access to technology in schools, particularly in rural and underserved areas. This includes providing schools with reliable internet connectivity, modern computing devices, and adequate technical support to ensure seamless integration of the U-Lesson app into the learning environment.
4. **Continuous Monitoring and Evaluation**: Education authorities should establish mechanisms for monitoring and evaluating the implementation of the U-Lesson app in schools. Regular assessments should be conducted to measure its effectiveness, identify challenges, and make necessary adjustments to optimize its impact on academic performance.
5. **Research and Development**: Continuous research and development efforts should be undertaken to enhance the features and functionality of the U-Lesson app based on feedback from users and emerging educational trends. Collaboration between researchers, educators, and developers can facilitate the refinement of the app to better meet the evolving needs of students and educators.

In conclusion, the findings of this study underscore the potential of the U-Lesson app as a valuable educational tool for enhancing learning outcomes among secondary school students in Osun State, Nigeria. By implementing the aforementioned recommendations, education stakeholders can maximize the benefits of the app and contribute to the improvement of educational quality and equity in the state.

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