



E-LEARNING PLATFORMS AND MENTAL RESOURCEFULNESS IN NIGERIA

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Abstract

The emerging demand for online learning platforms in Nigeria has become increasingly evident in recent years. This rise in popularity can be attributed to the lack of access to traditional education methods in many parts of the country. As a result, e-learning platforms have become a crucial resource for individuals seeking to further their education. This study examined E-Learning Platforms and Mental Resourcefulness in Nigeria. This study used theoretical approach to examine the various e-learning platforms in Nigeria such as uLesson, National Open University of Nigeria (NOUN) E-Learning Portal, Coursera and edX (Nigeria-based Access), Alison Nigeria, LearnAtEase, Tuteria, ScholarX, Udemy (Nigeria-based Users), TeachMe.ng, Gopius E-Learning, Roducate and EduFirst.ng. The study also examined the advantages of e-learning platforms in Nigeria such as accessibility and convenience, cost-effectiveness, flexible learning schedules, diverse course offerings, enhances digital and technological skills, Interactive and engaging learning experience, access to expert Instructors and global learning, supports continuous learning and career advancement, reduces overcrowding in traditional schools and promotes lifelong learning. Despite the growing adoption of e-learning in Nigeria, several challenges hinder its effectiveness. These challenges such as poor internet connectivity, high cost of digital devices, inconsistent power supply, limited digital literacy, lack of engagement and motivation, inadequate government support and policies, cybersecurity and online safety concerns, digital dividing between urban and rural areas, lack of standardized e-learning curriculum and financial constraints for students. The study Explores the impact of e-learning platforms on the mental resourcefulness of students in Nigeria and provide



valuable insights into the need for mental support for students in the digital education era. The study recommended that government and private sector should invest in expanding broadband infrastructure to ensure stable and affordable internet access, especially in rural areas. Schools and universities should introduce digital literacy programs for students, teachers, and parents to improve their ability to use e-learning platforms effectively.

Keywords: E-learning, mental, platform, resourcefulness

Introduction

In the evolving landscape of education, e-learning platforms have emerged as powerful tools for delivering knowledge and fostering lifelong learning. These platforms leverage the power of digital technology to provide accessible, flexible, and cost-effective learning opportunities for diverse populations. In Nigeria, the shift towards e-learning has been accelerated by the global push for digital transformation and the challenges posed by the COVID-19 pandemic, which necessitated alternative modes of instruction. Consequently, e-learning has become an integral component of the country's educational strategy, particularly in higher institutions and professional training sectors (Adeniyi, et al,2024). Despite the promise of e-learning platforms, their adoption in Nigeria is met with mixed outcomes. While some learners thrive in digitally mediated environments, others struggle to keep pace due to factors such as limited digital literacy, poor internet connectivity, and lack of motivation. This variability in outcomes draws attention to the role of mental resourcefulness—the ability to cope with academic demands, solve problems creatively, and adapt to challenging situations—in determining how learners engage with and benefit from e-learning platforms (Abdullateef, 2022). Mental resourcefulness encompasses cognitive and emotional capacities that enable individuals to regulate their thoughts, emotions, and behaviors effectively. It is closely linked to self-directed learning, problem-solving skills, resilience, and intrinsic motivation. In a digital learning environment, where learners are often required to take initiative and manage their learning independently, mental resourcefulness becomes a crucial determinant of academic success and personal development (Savchenko, et al, 2023).

In the Nigerian context, where infrastructural deficits and socio-economic disparities pose significant barriers to effective learning, the interplay between e-learning and mental resourcefulness assumes greater importance. Students who demonstrate high levels of mental resourcefulness are more likely to navigate these challenges successfully and harness the benefits of digital education. Conversely, those lacking in such psychological competencies may experience disengagement, stress, and diminished academic performance (Love-Okon & Magaji, 2025).

Several studies have explored the technological and infrastructural aspects of e-learning in Nigeria, but there is a dearth of research focusing on the psychological



dimensions that underpin successful digital learning experiences. Understanding how mental resourcefulness interacts with the use of e-learning platforms can offer deeper insights into learners' behavior, academic outcomes, and overall well-being in a technology-driven educational environment. Moreover, the integration of e-learning platforms in the Nigerian educational system necessitates a re-examination of pedagogical approaches and support structures. Institutions must not only provide access to digital tools but also cultivate the mental capacities required for effective engagement with these platforms. This includes promoting mental resilience, goal setting, self-regulation, and adaptive learning strategies among students (Giwa, 2022).

Given the diversity in learners' psychological readiness and digital skills, it is essential to identify factors that enhance or hinder mental resourcefulness in the context of e-learning. Doing so will help stakeholders develop targeted interventions aimed at improving students' capacity to learn autonomously and thrive in a digital academic environment. The role of guidance counselors, teachers, parents, and policymakers is critical in fostering a holistic learning culture that integrates both technological access and psychological empowerment (Bou-Hamad & El Danaoui, 2024). This study therefore seeks to investigate the relationship between e-learning platforms and mental resourcefulness among Nigerian learners. It aims to explore the extent to which digital education influences students' cognitive and emotional adaptability, the challenges they encounter, and the strategies that can be employed to enhance their digital learning experience. The outcome of this research is expected to inform educational policy and practice in Nigeria's journey toward a more inclusive, resilient, and effective e-learning system.

Concept E-Learning Platforms

According to Ouadoud, et al (2021) E-learning platforms are digital systems or software applications designed to facilitate the delivery, management, and evaluation of educational content and learning activities through the internet or other electronic means. E-learning platforms refer to virtual learning environments that support the teaching and learning process by providing tools for communication, content sharing, assessment, and collaborative learning between instructors and students (Mugizi, & Nagasha, 2025). E-learning platforms are structured digital spaces that enable learners to access educational resources at their own pace, interact with instructors and peers, and develop knowledge and skills through interactive and multimedia content (Adeniyi, et al, 2024). E-learning platforms are institutional digital infrastructures used by educational organizations to implement remote and blended learning strategies, track learners' progress, and ensure inclusive and continuous education regardless of geographical or physical limitations (Dritsas & Trigka, 2025). E-learning platforms are digital environments or software systems designed to deliver educational content, facilitate learning



activities, and support interaction between instructors and learners through electronic means, particularly the internet. These platforms provide a virtual space where students can access lectures, course materials, assignments, assessments, and multimedia resources anytime and from any location, thus promoting flexibility and self-paced learning. They often include features such as discussion forums, video conferencing tools, quizzes, grading systems, and collaborative tools to enhance the teaching-learning process. E-learning platforms are used across all levels of education—from primary to tertiary institutions—as well as in professional development and corporate training settings. In addition to improving access to education, they support the development of digital literacy, self-regulated learning, and critical thinking skills. In contexts like Nigeria, where traditional classroom infrastructure may be limited, e-learning platforms offer a viable alternative for expanding educational opportunities and addressing barriers related to geography, time, and cost.

Types of E-Learning Platforms

There are several e-learning platforms in Nigeria such as uLesson, National Open University of Nigeria (NOUN) E-Learning Portal, Coursera and edX (Nigeria-based Access), Alison Nigeria, LearnAtEase, Tuteria, ScholarX, Udemy (Nigeria-based Users), TeachMe.ng, Gopius E-Learning, Roducate and EduFirst.ng (Abdulkadir & Mohammed, 2021; Asuquo & Godwin, 2021; Jimoh, et al, 2024; Popoola, et al, 2024; Nkemdilim, et al, 2024; Oladokun, et al, 2024).

1. uLesson

uLesson is a Nigerian-based mobile learning platform primarily designed for secondary school students preparing for WAEC, NECO, and JAMB. It delivers engaging and interactive video lessons, quizzes, and practice tests aligned with the Nigerian curriculum. The platform supports both online and offline access, making it highly suitable for regions with limited internet access. With its intuitive interface and focus on core subjects like Math, English, Physics, and Biology, uLesson helps students revise and master topics at their own pace (Jimoh, et al, 2024).

2. National Open University of Nigeria (NOUN) E-Learning Portal

The NOUN E-Learning Portal is a digital learning management system used by the National Open University of Nigeria to facilitate distance education. It enables students to access course materials, attend virtual lectures, submit assignments, and take computer-based tests. NOUN provides a flexible academic schedule for students who work or live far from learning centers. The platform supports undergraduate and postgraduate programs, fostering self-paced learning for a broad student population.



3.Coursera and edX (Nigeria-based Access)

Coursera and edX are global MOOC (Massive Open Online Course) platforms that are widely accessed by Nigerians for educational advancement and professional skill development. Through these platforms, learners in Nigeria can enroll in courses offered by top universities like Harvard, MIT, and Stanford, often earning certificates or even degrees. Nigerian users benefit from these platforms through self-paced learning, free and paid course options, and content in diverse areas including technology, business, health, and education.

4.AlisonNigeria

Alison is a free online learning platform offering diploma and certificate courses in areas such as IT, business, health, and personal development. In Nigeria, Alison is popular among job seekers and professionals looking to improve their CVs or gain new skills. Its accessibility and affordability make it a top choice for people with limited resources who still want to improve. The platform's courses are self-paced, allowing learners to complete them according to their schedule.

5.LearnAtEase

LearnAtEase is a Nigerian e-learning and tutor-matching platform that provides video tutorials, live virtual classes, and customized learning solutions. It enables educators and institutions to create and sell courses online, while learners can register for lessons that suit their academic or personal needs. The platform is designed to promote localized content and address curriculum-based learning, serving both individuals and academic institutions.

6.Tutertia

Tutertia is an innovative Nigerian platform that connects students with qualified tutors for both academic and skill-based learning. Users can search for tutors based on subject, skill, or location, and lessons can be held either online or in-person. The platform ensures quality by vetting tutors and collecting feedback from students. Tutertia covers a broad range of topics including school subjects, languages, and vocational skills, making it suitable for learners of all ages.

7.ScholarX

ScholarX is a Nigerian education technology platform that started as a scholarship-finding tool and has evolved into a skills development hub through its "LearnAM" initiative. LearnAM provides digital and vocational skills training in local languages, making it accessible to people with low literacy levels. The platform addresses unemployment and poverty by empowering young Nigerians with employable skills, especially in underserved communities.



8.Udemy(Nigeria-basedUsers)

Udemy is a global e-learning marketplace that offers thousands of video-based courses across subjects like programming, design, business, and personal development. In Nigeria, many individuals use Udemy to gain professional certifications or acquire new skills relevant to the job market. Its flexibility, affordability, and lifetime access to purchased courses make it a valuable tool for continuous learning and self-improvement among Nigerians.

9.TeachMe.ng

TeachMe.ng is a Nigerian e-learning platform that allows educators to create and monetize their online courses. It provides a space for local experts to develop content that is culturally and academically relevant, while learners can access these courses for personal or professional development. The platform supports diverse subjects and integrates learning tools that enhance virtual education for both tutors and students.

10.Gopius-E-Learning

Gopius is a learning management system that provides customized e-learning solutions to Nigerian schools, universities, and organizations. It helps institutions digitize their curriculum, conduct virtual training, and monitor learner progress. Gopius is known for its adaptability to different educational needs and is often used in formal education and corporate training. It supports a blended learning approach combining online and face-to-face interactions.

11.Roducate

Roducate is a Nigerian mobile and web-based learning platform designed to provide students with curriculum-aligned educational content from primary to tertiary levels. It offers interactive lessons, past questions, and practice quizzes, and has received endorsements from governments and educational bodies. The platform is particularly beneficial for remote learning in underserved areas, with offline access features that allow students to study without constant internet connectivity.

12.EduFirst.ng

EduFirst.ng is an educational technology platform that combines school administration with e-learning tools. It provides virtual classrooms, e-testing, academic analytics, and teacher-student collaboration features. EduFirst supports both public and private schools in digitizing their operations and enhancing learning outcomes. It promotes smart learning environments where education is accessible, structured, and engaging.



Advantages of E-Learning Platforms

E-learning platforms have revolutionized the education system by offering flexible and accessible learning opportunities beyond the traditional classroom setting. In Nigeria, these platforms have become increasingly important in bridging educational gaps and providing learners with diverse resources to enhance their academic and professional development. This advantages according to Akhter, et al(2021); Al Rawashdeh et al(2021) and Stecuła and Wolniak 2022) include the following

1. Accessibility and Convenience

E-learning platforms provide unparalleled accessibility and convenience, enabling learners to access educational materials from any location with an internet connection. This removes barriers related to geography, transportation, and classroom availability, allowing students, professionals, and lifelong learners to study at home, at work, or even while traveling. The ability to learn on-demand ensures that education can fit into various lifestyles, especially for those balancing school with family or job responsibilities.

2. Cost-Effectiveness

One of the most attractive features of e-learning is its cost-effectiveness. It eliminates many expenses associated with traditional learning such as transportation, accommodation, textbooks, and facility maintenance. Many online courses are free or offered at a fraction of the cost of in-person programs, making high-quality education more affordable and accessible to a wider population. This financial flexibility allows institutions and learners to invest resources in other productive areas.

3. Flexible Learning Schedules

E-learning platforms support flexible learning schedules, allowing individuals to learn at their own pace and choose study times that best suit their daily routines. This flexibility benefits students who may have work, family, or personal commitments, as well as those in different time zones. It also empowers learners to spend more time on difficult subjects and move quickly through familiar material, thereby enhancing comprehension and performance.

4. Diverse Course Offerings

Online learning platforms offer a vast array of courses across multiple disciplines and skill levels—from academic subjects like mathematics and science to technical skills, languages, arts, and personal development. This diversity enables learners to pursue interests, upgrade skills, or change careers without the limitations of traditional school curricula. Additionally, learners can easily switch between different subjects or institutions, customizing their learning journey to meet personal and professional goals.



5. Enhances Digital and Technological Skills

Using e-learning platforms naturally helps learners develop essential digital and technological skills. Interacting with learning management systems, video conferencing tools, discussion forums, and digital assignments cultivate proficiency in modern technologies. These skills are increasingly in demand in today's digital economy, giving e-learners an advantage in the job market and preparing them to thrive in technology-driven environments.

6. Interactive and Engaging Learning Experience

Modern e-learning platforms use a variety of multimedia tools—including videos, animations, simulations, quizzes, and discussion boards—to make the learning process more interactive and engaging. These features cater to different learning styles and help maintain student interest and motivation. Additionally, gamification elements such as badges and leaderboards can enhance participation, reinforce learning, and create a more enjoyable educational experience.

7. Access to Expert Instructors and Global Learning

E-learning platforms break geographical boundaries, giving learners access to expert instructors and renowned institutions from around the world. Students can learn from leading professionals and scholars without relocating or paying exorbitant fees. This global exposure fosters diverse perspectives and encourages international collaboration, enriching the learning experience and expanding professional networks.

8. Supports Continuous Learning and Career Advancement

Online learning platforms enable individuals to continuously upgrade their knowledge and skills in a fast-evolving world. Whether seeking certifications, learning new technologies, or preparing for career shifts, e-learning offers resources for ongoing professional development. Employers increasingly value continuous learners, and e-learning provides a convenient way to stay current, competitive, and capable of meeting industry demands.

9. Reduces Overcrowding in Traditional Schools

By offering an alternative to physical classrooms, e-learning helps reduce overcrowding in traditional educational institutions. This is particularly important in densely populated regions or countries with limited infrastructure. With more learners participating online, schools and universities can better manage their physical resources, maintain smaller class sizes, and improve the overall quality of education delivery.

10. Promotes Lifelong Learning

E-learning fosters a culture of lifelong learning by making education readily available to people of all ages and backgrounds. Whether a person wants to explore a new interest, learn a new language, or acquire professional skills later in life, online platforms provide the tools and opportunities. This adaptability encourages



curiosity, personal growth, and a proactive approach to learning throughout an individual's lifetime.

Challenges of E-Learning Platforms in Nigeria

Despite the growing adoption of e-learning platforms in Nigeria, several challenges continue to hinder their effectiveness and accessibility. These challenges according to Samuel (2021); Eli-Chukwu, et al(2023); Mbato and Osigwe (2024); Aondover and Ademosu (2025) include the following

Poor Internet Connectivity

Poor internet connectivity is one of the most significant challenges facing e-learning, particularly in rural and underdeveloped areas. Inconsistent or slow internet access hampers the ability to stream video lectures, participate in live classes, or download educational materials. This can lead to frequent disruptions, reduced comprehension, and frustration among learners, ultimately affecting the quality and continuity of education delivered through online platforms.

2. High Cost of Digital Devices

Access to e-learning requires digital devices such as laptops, tablets, or smartphones, which can be prohibitively expensive for many students, especially those from low-income backgrounds. The high cost of purchasing and maintaining these devices creates a barrier to entry, preventing a large segment of the population from benefiting from online education. This financial burden also limits the ability to replace or upgrade outdated equipment.

3. Inconsistent Power Supply

In many developing regions, inconsistent or unreliable power supply poses a major obstacle to effective e-learning. Frequent power outages disrupt online sessions, hinder assignment completion, and discourage regular participation. Students and educators often struggle to maintain a stable learning environment, which negatively impacts academic performance and undermines the benefits of digital education.

4. Limited Digital Literacy

Many learners and even some educators lack the necessary digital literacy to navigate e-learning platforms effectively. Limited knowledge of how to operate software, troubleshoot technical issues, or utilize digital tools can hinder participation and reduce the efficiency of online learning. Without targeted training and support, users may feel overwhelmed or excluded from the learning process.

5. Lack of Engagement and Motivation

E-learning can sometimes lead to a lack of student engagement and motivation, especially in the absence of physical interaction, peer support, or teacher supervision. Learners may feel isolated, distracted, or disconnected from the material. This can result in lower completion rates, reduced academic achievement, and a diminished overall learning experience, particularly for younger or less self-disciplined students.



6. Inadequate Government Support and Policies

In many regions, the success of e-learning is hindered by inadequate government support, lack of strategic policies, and minimal investment in digital infrastructure. Without clear national guidelines, funding, and coordinated efforts to promote digital education, the development and implementation of effective e-learning systems remain limited, particularly in public schools and underserved communities.

7. Cybersecurity and Online Safety Concerns

E-learning platforms are susceptible to cybersecurity threats such as data breaches, phishing attacks, and unauthorized access to personal information. Students, especially minors, may also face online safety risks including exposure to inappropriate content, cyberbullying, and exploitation. These concerns require strict security measures, awareness programs, and responsible use policies to protect users.

8. Digital Divide Between Urban and Rural Areas

There is a significant digital divide between urban and rural areas in terms of internet access, digital device availability, and technical infrastructure. While urban learners may enjoy high-speed internet and advanced technology, rural students often struggle with basic access. This inequality exacerbates existing educational disparities and limits opportunities for rural communities to benefit from e-learning.

9. Lack of Standardized E-Learning Curriculum

Many e-learning platforms lack a standardized curriculum, resulting in inconsistencies in quality, content delivery, and learning outcomes. This can lead to confusion among students, difficulties in assessment, and a lack of coherence in educational progress. Without proper regulation and alignment with national education standards, the credibility and effectiveness of online learning may be compromised.

10. Financial Constraints for Students

Even when courses are offered for free, e-learning still comes with hidden costs such as internet subscriptions, device maintenance, and software tools. These recurring expenses pose a financial strain on students, particularly those from low-income households. As a result, many learners are unable to sustain their participation in online education, leading to dropouts and reduced access to learning opportunities.

Impact of E-Learning Platforms on the Mental Resourcefulness of Students in Nigeria

The impact of e-learning platforms on the mental resourcefulness of students in Nigeria is profound, as these platforms provide students with both challenges and



opportunities for cognitive and emotional development. One of the keyways in which e-learning platforms impact students' mental resourcefulness is through the development of problem-solving skills. As students navigate online platforms, they are often required to figure out how to access materials, troubleshoot technical issues, and adapt to different learning formats. This self-directed learning process promotes critical thinking and enhances their ability to handle complex problems. The autonomy involved in online education fosters resilience, as students must take initiative and develop effective time-management skills to succeed in their studies, thereby boosting their mental capacity to handle challenges in both academic and real-life contexts (Ahmed, et al, 2024).

Moreover, e-learning platforms significantly affect the cognitive flexibility of students in Nigeria. With the integration of multimedia learning tools such as videos, simulations, and interactive quizzes, students are exposed to various ways of learning and processing information. This exposure helps students develop the ability to think and respond flexibly to new and unfamiliar situations, an essential trait of mental resourcefulness. The variety of resources available online allows learners to engage with content in different formats, which is beneficial for those with varying learning styles. Students can revisit difficult topics, pause and reflect on lessons, and engage in active learning practices like online discussions, thereby improving their cognitive processing and comprehension. This adaptability is essential in an increasingly complex and rapidly changing world (Alimi, et al, 2024).

However, while e-learning platforms foster cognitive growth, they also present challenges that can strain students' mental resilience. One of the key challenges faced by Nigerian students in accessing e-learning platforms is the irregularity of internet connectivity and inconsistent power supply. These issues can lead to frustration and anxiety, as students may feel disconnected from their studies and unable to complete assignments or participate in live classes. The stress of not being able to access necessary resources can diminish a student's ability to focus, affecting their mental well-being and resourcefulness. This technological divide, particularly in rural areas, creates an uneven playing field and places additional mental burdens on students who struggle to stay engaged in their education (Eli-Chukwu, et al, 2023).

In addition, the social isolation associated with e-learning can have both positive and negative effects on students' mental resourcefulness. On the one hand, e-learning provides an environment that allows for personal reflection, independent learning, and greater control over one's educational path. This solitude can encourage students to develop internal motivation and improve their self-discipline, which are vital aspects of mental resourcefulness. On the other hand, the lack of physical interaction with peers and instructors may lead to feelings of loneliness



and disengagement. Social isolation can negatively impact a student's emotional well-being, reducing their mental strength and resilience. The absence of collaborative learning environments, which often encourage peer-to-peer support and exchange of ideas, can hinder the development of interpersonal problem-solving skills (Mbato & Osigwe, 2024).

Lastly, e-learning platforms, if leveraged correctly, have the potential to cultivate lifelong learning habits, which are central to mental resourcefulness. Students who engage with e-learning are not only learning academic content but are also acquiring valuable skills in digital literacy and self-regulation. These skills are crucial in a world where continuous learning and adaptability are increasingly necessary. E-learning encourages students to be more proactive in seeking knowledge, thus fostering a mindset that values learning as an ongoing process. This shift in mentality contributes to long-term mental resourcefulness by instilling habits of self-improvement and personal growth. In a society like Nigeria, where educational opportunities may be limited by socioeconomic or geographical factors, e-learning platforms offer a way to level the playing field, allowing students to become more self-sufficient and mentally resilient in facing challenges (Nkemdilim, et al, 2024).

The need for Mental Support for Students in the Digital Education Era

The digital education era has brought about unprecedented opportunities for learning, but it has also introduced new mental health challenges for students. The transition from traditional face-to-face learning to online education can be overwhelming, especially for students who are not accustomed to managing their learning independently. The isolation caused by online learning, combined with the pressures of navigating technology and dealing with inconsistent internet connectivity, can lead to stress, anxiety, and burnout. As the demand for digital education grows, it becomes increasingly important to provide mental support for students to ensure they remain motivated, focused, and emotionally well-balanced (Vilkova, et al, 2021).

Mental support is critical in helping students navigate the cognitive and emotional challenges associated with digital learning. The lack of social interaction in online learning environments can lead to feelings of loneliness, which, in turn, may negatively impact students' mental health and academic performance. Without face-to-face interactions with teachers and peers, students may struggle to feel connected or engaged. Providing mental health resources, such as counseling services, virtual study groups, and online communities, can help students feel supported, reduce isolation, and foster a sense of belonging. These resources also give students the tools to manage stress and build resilience in the face of academic and personal challenges (Pachaiyappan, 2024).

Moreover, mental support plays a crucial role in ensuring students' long-term success in the digital education era. Many students may face barriers to learning



that go beyond academics, such as lack of motivation, self-doubt, or difficulty maintaining a work-life balance. Mental support programs can provide students with strategies for time management, goal setting, and self-regulation, empowering them to become more self-reliant and resourceful learners. In a world where digital education is becoming increasingly prevalent, offering consistent mental support will help students develop not only academically but also emotionally, preparing them for both academic success and personal growth in the digital age.

Conclusion

The growing adoption of e-learning platforms in Nigeria has become a significant step in addressing the educational gaps created by limited access to traditional learning methods. These platforms, including uLesson, NOUN E-Learning Portal, Coursera, and others, offer students a range of advantages such as accessibility, flexibility, and affordability. They enable learners to gain valuable skills and knowledge in various fields, which is especially important in a country with significant barriers to formal education. The positive impact of e-learning platforms on students' mental resourcefulness, including enhanced problem-solving skills and cognitive flexibility, underscores the potential of these platforms to not only educate but also foster resilience and independence in learners.

However, despite these advantages, several challenges—such as poor internet connectivity, high device costs, inconsistent power supply, and digital literacy gaps—continue to limit the effectiveness of e-learning in Nigeria. Addressing these issues requires concerted efforts from both the government and private sector to invest in digital infrastructure, education, and mental health support. As digital education continues to grow, it is essential to provide students with the tools, skills, and resources they need to succeed, both academically and emotionally, in the digital era. Effective implementation of e-learning requires a holistic approach that addresses these challenges and supports students' well-being.

Recommendations

Based on the findings of this study, several recommendations can be made to improve the effectiveness and accessibility of e-learning platforms in Nigeria.

1. The government and private sector should prioritize expanding broadband infrastructure to ensure stable and affordable internet access, particularly in rural areas, where connectivity remains a significant barrier to effective online learning. This could involve partnerships with telecommunication companies and investment in nationwide internet access projects.
2. Schools and universities should introduce comprehensive digital literacy programs for students, teachers, and parents, aimed at improving their ability to navigate and utilize e-learning platforms effectively. This training should cover both basic digital skills and advanced e-learning tools to empower users.



3. Mental health support systems should be integrated into the digital learning framework, with schools offering counseling services, stress management workshops, and online support groups to help students cope with the isolation and challenges of remote learning.
4. The development of a standardized e-learning curriculum that aligns national educational goals would ensure consistency and quality across all platforms, helping to level the playing field for students from diverse backgrounds.

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