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USE OF EDUCATIONAL PSYCHOLOGY IN ENHANCING TECHNOLOGY-DRIVEN CURRICULUM REFORM IN NIGERIAN SECONDARY SCHOOLS

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Abstract

The paper explores the use of educational psychology in enhancing technology-driven curriculum reforms in Nigerian secondary schools. Educational psychology is pivotal in addressing the psychological, cognitive, and social challenges associated with curriculum reforms by offering insights into how students learn and adapt to new technological tools, and also contribute to the design and implementation of inclusive and adaptable curricula. Educational psychology helps teachers and school administrators in integrating technology, ensuring the mental and emotional readiness of both educators and students for effective teaching and learning. The challenges that affect successful technology-driven curriculum reform in secondary schools; such as limited access to resources and lack of teacher preparedness, and solutions or strategies for overcoming the challenges. The use of educational psychology in technology-integrated curriculum reform, such as promoting inclusivity, facilitating teacher training, addressing technology-induced anxiety, promoting digital literacy, monitoring and evaluation, cognitive considerations in technology integration, learning disabilities and technology, assessment of learning outcomes, curriculum design and development, addressing cognitive and psychological barriers, teacher preparedness and professional development, supporting student adaptation to technological reforms, inclusive education and technology integration among others. Recommendations are as follows; the Nigerian government in collaboration with secondary schools authority should prioritize ongoing professional development programs for teachers and curriculum planners, Schools should establish interdisciplinary teams that include educational psychology, teachers, administrators, and technology experts. Teacher training programs should incorporate psychological readiness where educational psychologists guide teachers in understanding the mental and emotional challenges associated with technology integration.

Keyword: educational psychology, enhancing technology-driven curriculum reform and Nigerian secondary schools

Introduction

The rapid advancement of technology has revolutionized various disciplines globally, and education is not an exception. In Nigeria, the push towards a technology-driven curriculum has become essential for aligning the educational system especially in this 21st-century skills and global trends. Therefore, the effective integration of technology into the secondary school curriculum requires more than just access to digital tools and resources; it demands a comprehensive understanding of students and the use of psychological and pedagogical knowledge by educators. Educational psychology plays a pivotal role in this process, as they bring specialized knowledge in learning theories, motivation, and behaviour that can bridge the gap between technology and education (Ormrod & Jones, 2021). The expertise is crucial for designing and implementing strategies that can not only facilitate the adoption of digital tools but also ensure that these tools enhance student engagement, cognitive development, and overall academic performance. The use of educational psychology in enhancing technology-driven curriculum reform in Nigerian secondary schools will contribute to teacher preparedness, student adaptation, and the creation of supportive learning environments, it includes the use of computers, smart boards, mobile devices, and software applications that enable interactive and personalized learning. In Nigeria, the government and various educational stakeholders have initiated curriculum reforms to ensure that schools integrate Information and Communication Technology (ICT) into their teaching practices and learning for a globalized workforce. The availability of technology in schools is increasing and its effective use requires more than just access to tools, Teachers need to be trained, and more importantly, students' cognitive, emotional, and social needs must be addressed to fully maximize the potential of these technologies (Alade & Oke, 2023).

Educational psychology is a branch of psychology dedicated to the scientific study of human learning, with an emphasis on understanding learning processes from both cognitive and behavioural

perspectives. Researchers in this field explore individual differences in areas such as intelligence, cognitive development, motivation, self-regulation, and self-concept, all of which play crucial roles in the learning process. Quantitative methods, such as psychometric testing and measurement, are central to the work of educational psychologists, as these tools help to improve instructional design, classroom management, and assessment strategies, thereby enhancing the overall learning experience across various educational settings and stages of life (Schunk, 2020). In the context of Nigeria's secondary schools, educational psychology offers key insights that can support technology-driven curriculum reforms. Educational psychologists evaluate learning environments and explore factors like age, culture, gender, and social conditions; they provide essential guidance on how technology can be integrated into learning to enhance learning outcomes. For example, technology integration in curriculum reform requires an understanding of student's cognitive abilities and motivational levels to engage with digital tools, educational psychology helps educators to design technology-based curricula that accommodate and ensure inclusive learning opportunities (Ormrod & Jones, 2021).

The introduction of technology into secondary school curricula can be enhanced through the use of educational psychological knowledge such as focusing on learning theories that are related to self-regulation and motivation of students. The application of the cognitive and behavioural concepts in educational psychology can help in developing digital tools that foster self-directed learning, encourage students' engagement, and support personalized educational plans to enhance individual learners' needs (Santrock, 2022). This approach aligns with current efforts to reform Nigeria's curriculum and incorporate technology to better prepare students for the demands of a digital world. Educational psychology can influence programs, curricula, and lesson development, as well as classroom management. For example, educators can use concepts from educational psychology such as learning abilities, motivation and personality theories to understand and teach students in order to

address the ways and manner technologies are used and demanded in the global world. In addition, educational psychologists can play an important role in educating teachers, parents or guardians, administrators and curriculum planners for the use of technology-driven secondary school curriculum reform. Therefore, educational psychology will enhance understanding of learning processes, which will help to develop effective teaching strategies and assessment methods in teaching and learning (Georgeson, 2018).

According to Marsh and Willis (2021), the curriculum is "an interrelated set of plans and experiences that a student undertakes under the guidance of the school." It includes not only the formal instruction provided in classrooms but also the hidden or implicit curriculum, which consists of the values and norms communicated unintentionally through school culture. The curriculum is a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. Curriculum is the central guide for all educators as to what is essential for teaching and learning so that every student has access to rigorous academic experiences. The structure, organization, and considerations in a curriculum are created to enhance student learning and facilitate instruction. The curriculum must include the necessary goals, methods, materials and assessments to effectively support instruction and learning.

Curriculum refers to the structured set of educational experiences designed to meet the learning needs of students within an educational system. It outlines the knowledge, skills, attitudes, and values that students are expected to acquire during their educational journey. A curriculum can encompass everything from the goals of education, the content of courses, the teaching methods employed, and the assessment techniques used to evaluate student learning. The curriculum can also be designed to reflect broader societal goals (Brown, 2021). For instance, in recent years, many countries have moved towards integrating technology into their curricula to align education with the

digital age. According to Akyar and Yavuz (2022), curriculum reforms that incorporate digital literacy and technological advancements are essential for preparing students for the challenges of a rapidly changing world.

Technology refers to the application of scientific knowledge for practical purposes, particularly in industry and learning environments. It involves tools, machines, methods, systems, and techniques used to solve problems, improve efficiency, and create innovations that enhance human life. Technology encompasses a wide range of fields, including information and communication technology (ICT), biotechnology, engineering, and more. Modern technology has a significant impact on every aspect of life, from communication to education, healthcare and industry. For example, the rise of digital platforms and devices such as smartphones, cloud computing, and artificial intelligence (AI) has reshaped the way people work, learn, and interact. In education, technology integration refers to the use of digital tools and resources (such as computers, projectors, and online platforms) to enhance learning and teaching processes. It allows for more interactive and engaging lessons, provides access to vast information, and enables remote learning (Akyar & Yavuz, 2022).

Challenges Faced by Educational Psychology in technology-driven curriculum reform

According to Davies and Thompson (2018), despite their crucial role, educational psychology in Nigeria faces several challenges in contributing effectively to technology-driven curriculum reform. These include:

1-Limited Resources: Many Nigerian schools lack the necessary technological infrastructure, making it difficult for educational psychologists to implement their recommendations.

2-Insufficient Training: There is a need for more training programs that equip educational psychology with the specific skills required to assess and enhance digital learning environments.

3-Cultural Resistance: In some cases, there is resistance to the adoption of technology, particularly in rural areas where traditional methods of teaching are still prevalent.

Solutions and Way Forward

According to Ojo (2017), to overcome these challenges, a concerted effort is required from both government and private sectors. Some solutions include:

1-Government Support: Increased funding and infrastructure development in schools, particularly in rural areas, would ensure that educational psychologists have the tools they need to assess and improve technology integration.

2-Capacity Building: Continuous professional development programs for educational psychologists that focus on digital learning environments should be encouraged.

3-Collaboration: A multi-stakeholder approach, involving policymakers, school administrators, teachers, and parents, is essential for the success of technology-driven curriculum reforms.

4- Equitable Access to Technology: Educational psychology advocates for equitable access to technology for all students, regardless of their socio-economic backgrounds. They work with school administrators to ensure that students from disadvantaged backgrounds have the same opportunities to benefit from the technology-driven curriculum as their peers.

5-Psychological Impact of Inadequate Resources: In schools where technological resources are limited, students may experience frustration, stress, or anxiety. Educational psychology provides

support systems to help students cope with these challenges, ensuring that the lack of resources does not hinder their academic progress.

Use of Educational Psychology in Technology Integration Curriculum Reform

Educational psychology is crucial in developing curricula that cater to students' psychological and developmental needs. When integrating technology into the curriculum, they offer insights into how different learning styles and cognitive abilities can be accommodated. By collaborating with curriculum designers, educational psychology helps shape a curriculum that not only incorporates technology but also facilitates effective learning.

Assessing Learning Needs: Educational psychology helps in understanding the diverse cognitive abilities and learning styles of students. In the context of a technology-driven curriculum, it play a key role in assessing the technological tools and platforms that best match the learning needs of students. For example, educational psychologists can help identify software that enhances comprehension for students with learning disabilities, such as dyslexia (Brown, 2021).

Promoting Inclusivity: Not all students have the same level of access to technology or the same capacity to adapt to digital tools. Educational psychologists will work to ensure that the curriculum remains inclusive, particularly for students with special needs or those from socio-economically disadvantaged backgrounds. They can recommend adaptive technologies or alternative teaching methods to bridge the gap and prevent the exclusion of any student group (Davies & Thompson, 2018).

Facilitating Teacher Training: Teachers are central to the success of technology integration. Educational psychologists will collaborate with educators to design professional development programs that enhance teachers' understanding of student psychology in a digital learning

environment. They offer insights into how technology can be used to motivate students, reduce anxiety related to digital learning, and promote higher engagement levels. The success of technology-driven curriculum reforms is largely dependent on the teachers' ability to effectively integrate technology into their pedagogy. Educational psychology contributes to teacher preparation by developing training programs that enhance teachers' understanding of how technology can support learning. It can provide teachers with training on how to manage classroom dynamics in technology-enhanced environments. This includes understanding the psychological effects of technology use, such as attention, span, variations and the potential for cognitive (Garcia & Lee, 2021).

Addressing Technology-Induced Anxiety: The sudden shift to digital learning environments can trigger anxiety overload and stress in students. Educational psychology helps to create a supportive atmosphere where students feel comfortable using technology. Developing strategies to manage technology-induced stress and addressing students' fears help improve both mental well-being and academic performance. Another significant barrier to technology integration is the resistance from teachers who may feel overwhelmed or intimidated by new technology. Educational psychologists help design interventions to reduce technophobia, providing psychological support and strategies to overcome resistance (Johnson, 2020).

Promoting Digital Literacy: Beyond the basic use of technology, digital literacy entails critical thinking, responsible use of information, and navigating online spaces safely. Educational psychologists contribute by designing programs that enhance students' digital literacy skills, fostering a generation of learners who are not only tech-savvy but also aware of the psychological impacts of prolonged technology use, such as internet addiction or cyberbullying (Smith & Jones, 2020).

Monitoring and Evaluation: Educational psychology assists in the continuous monitoring and evaluation of technology-driven curricula. They measure the psychological impacts of technology on students' academic performance, emotional well-being, and social interaction. By conducting research and collecting data, they provide valuable feedback to improve the integration of technology, ensuring it contributes positively to students' development. One of the core challenges in implementing a technology-driven curriculum is ensuring student engagement. Educational psychologists research and apply motivational strategies that encourage students to actively participate in technology-enhanced learning environments. They also address issues related to technology fatigue, where over-reliance on digital tools may lead to disengagement (Miller, Roberts & Walker, 2019).

Cognitive Considerations in Technology Integration: Technology-enhanced curricula must align with students' cognitive development stages. Educational psychology ensures that digital tools used in classrooms match the students' mental capacity to process, retain, and apply information. They help determine the appropriate levels of complexity for technology use at different educational stages. For students, adapting to a technology-driven curriculum involves both cognitive and emotional challenges. Educational psychology is instrumental in helping students navigate these changes by offering personalized support that addresses their individual learning needs (Williams & Harris, 2022).

Learning Disabilities and Technology: Students with learning disabilities may struggle to adapt to a technology-driven curriculum. Educational psychology develops strategies that make digital tools accessible to all learners, ensuring that those with special needs receive the support they require to succeed in a technology-enhanced classroom (Okpara, 2024).

Assessment of Learning Outcomes: Educational psychology conducts regular assessments to measure the impact of technology integration on students' academic performance. These assessments help identify areas where technology is enhancing learning, as well as areas where adjustments may be necessary (Ifinedo, 2019).

Curriculum Design and Development: Educational psychology can contribute to curriculum reform by providing insights into how students learn, process, and retain information. They help ensure that curricula are developmentally appropriate and tailored to the diverse cognitive abilities of learners. This is particularly important when integrating technology, as it changes the way content is delivered and absorbed. For example, research has shown that digital learning environments can support individualized learning if the curriculum is designed to accommodate different learning paces and styles (Clark & Mayer, 2016).

Addressing Cognitive and Psychological Barriers: One of the critical functions of educational psychology is to identify and address cognitive and psychological barriers that may impede the effectiveness of curriculum reform. As technology becomes a more integral part of learning, some students may struggle with adapting to new learning platforms due to anxiety, attention disorders, or learning disabilities (Georgeson, 2018). Educational psychologists can design interventions and support systems to help these students overcome such barriers, ensuring equitable access to the benefits of a reformed curriculum.

Teacher Preparedness and Professional Development: Teacher preparedness is essential for the successful integration of new curricula, especially when technology is involved. Educational psychologists play a key role in training teachers to understand how technology can enhance learning and how to manage classrooms in technology-enhanced settings. For instance, a study by Ertmer and Ottenbreit-Leftwich (2020) highlights that teachers often face challenges in adopting new

technologies due to a lack of training and confidence. Educational psychologists can facilitate professional development programs that equip teachers with the skills and knowledge needed to use technology effectively while maintaining a supportive learning environment.

Supporting Student Adaptation to Technological Reforms: As schools increasingly adopt technology-driven curricula, educational psychology helps ensure that students are prepared for the changes in learning environments. This includes addressing issues such as digital literacy, attention span, and the need for social interaction in learning. According to research, students in technologically enhanced learning environments may face cognitive overload if instructional materials are not appropriately structured (Sweller, 2019). Educational psychologists can provide strategies to mitigate such challenges, promoting better student engagement and retention of knowledge.

Inclusive Education and Technology Integration: Ensuring inclusivity in curriculum reform is another critical area where educational psychologists contribute. They advocate for reforms that cater to students with diverse needs, including those with learning disabilities or those from disadvantaged backgrounds. The use of assistive technologies, for example, has been shown to significantly benefit students with special educational needs when integrated into the curriculum (Florian & Spratt, 2017). Educational psychologists work to ensure that such technologies are effectively incorporated into the curriculum and that teachers are trained to use them.

Evaluating the Effectiveness of Curriculum Reforms: After the implementation of curriculum reforms, educational psychology assesses their impact on both teachers and students. They use empirical research to evaluate whether the reforms have achieved the intended educational outcomes, such as improved student performance, engagement, and motivation Fullan (2020).

Conclusion

Educational psychology is essential to the success of curriculum reform, particularly in ensuring that technology-driven reforms are grounded in sound pedagogical principles. Their expertise in understanding how students learn, addressing psychological barriers, and supporting teacher development ensures that curriculum changes are effective and inclusive. With their contribution, curriculum reforms can better cater to the diverse cognitive and emotional needs of students, making the integration of technology a tool for enhancing learning rather than a source of difficulty.

Recommendations:

1. The Nigerian government, in collaboration with educational institutions, should prioritize ongoing professional development programs for educational psychology. These programs should focus on emerging technologies, their impact on learning, and strategies to support students' cognitive and emotional adaptation to technology-driven curricula. Continuous training will equip educational psychologists to better support teachers and students during the reform process.
2. Schools should establish interdisciplinary teams that include educational psychology, teachers, administrators, and technology experts. These teams can work collaboratively to assess and address the psychological and emotional needs of students and educators during the transition to a technology-driven curriculum. This collaboration will ensure that curriculum designs are inclusive, adaptable, and responsive to the diverse needs of all learners.
3. Teacher training programs should incorporate psychological readiness components, where educational psychologists guide teachers in understanding the mental and emotional challenges associated with technology integration. By helping teachers develop coping

strategies and adaptive teaching methods, educational psychology can enhance educators' confidence and effectiveness in implementing technology-driven curriculum reforms.

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