

DIGITAL SELF-EFFICACY AND PSYCHOLOGICAL READINESS FOR INNOVATIVE TECHNOLOGY USE IN CURRICULUM IMPLEMENTATION AMONG TEACHERS IN NSUKKA EDUCATION ZONE, ENUGU STATE

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Abstract

The study investigated digital self-efficacy and psychological readiness for innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State. Four research questions guided the study. The study adopted a descriptive survey design and was conducted in Nsukka Education Zone, Enugu State. The population of the study comprised 896 teachers, and the entire population was studied because it was manageable. The instrument for data collection was a self-structured questionnaire developed by the researchers, titled: Digital Self-Efficacy and Psychological Readiness for Innovative Technology Use in Curriculum Implementation Questionnaire (DSEPRITUCIQ). The instrument was face-validated by three experts, comprising two experts from the Department of Psychology, Faculty of the Social Sciences, and one expert from the Institute of Education, both in the University of Nigeria, Nsukka. The reliability of the instrument was established using Cronbach Alpha, which yielded an overall reliability coefficient of 0.84, indicating that the instrument had adequate internal consistency and was sufficiently reliable for data collection. The instrument was administered directly to the respondents with the assistance of trained research assistants, and the completed copies were retrieved for analysis. Mean and standard deviation were used to answer the research questions, with a mean score of 2.50 and above indicating a high level or major challenge, while a mean below 2.50 indicated a low level or minor challenge. The findings revealed that teachers had a high level of digital self-efficacy for innovative technology use in curriculum implementation. The findings also revealed that teachers had high levels of psychological readiness and preparedness for innovative technology use in curriculum implementation. However, unstable electricity supply, high cost of internet data and technology maintenance, inadequate internet connectivity, inadequate access to functional digital devices, limited practical training opportunities, and inadequate technical support were identified as major challenges confronting teachers' readiness. Based on the findings of the study, it was recommended among others that relevant educational authorities should improve electricity supply, provide adequate technological resources, and strengthen institutional support for innovative technology use in curriculum implementation.

Keywords: Digital self-efficacy, psychological readiness, Innovative technology, curriculum implementation, teachers

Introduction

The rapid transformation of education through digital technologies has created a new professional and psychological demand for teachers: the ability not only to access technology, but also to feel sufficiently confident, prepared and mentally willing to use it as part of everyday curriculum implementation. Contemporary educational environments increasingly incorporate artificial intelligence, learning management systems, digital assessment platforms, interactive multimedia, adaptive learning applications, virtual learning environments, collaborative platforms and other emerging technologies. These developments have expanded the possibilities for lesson planning, instructional delivery, assessment, communication and learner support. However, the availability of technological tools does not

automatically translate into meaningful classroom use. The teacher remains the central human agent who interprets, selects, adapts and applies technology to curriculum purposes. Consequently, understanding teachers' psychological preparedness for innovative technology use has become increasingly important in contemporary education.

At the centre of this concern is digital self-efficacy, which refers to teachers' confidence in their ability to perform technology-related tasks successfully. A teacher may have access to a smartphone, computer, internet connection, digital platform or artificial intelligence application and still hesitate to use it for teaching because of uncertainty about personal capability. This distinction is important because technological access represents an external condition, whereas self-efficacy represents an internal psychological belief. A teacher who believes that he or she can learn a new application, prepare digital instructional materials, operate online platforms, solve basic technological problems and use digital tools to support learners is more psychologically prepared to engage with technological innovation. Recent research continues to demonstrate the importance of confidence and self-efficacy in teachers' technology integration, with studies identifying technology-integration confidence as an important dimension of teachers' capacity to undertake technology-related instructional tasks (Gomez, Vairez, Trespalacios, & Hung, 2026).

Digital self-efficacy should, however, not be regarded as synonymous with digital competence. Digital competence concerns what teachers know and can do with technology, whereas self-efficacy concerns their beliefs about their capacity to perform particular technology-related activities. A teacher may possess some technological skills but lack confidence in applying them in an actual classroom. Conversely, a teacher may demonstrate considerable willingness to experiment with technology while still requiring additional technical and pedagogical training. This distinction makes the psychological dimension particularly relevant to curriculum implementation because curriculum implementation requires teachers to translate curricular intentions into actual classroom practices. The process involves planning learning experiences, selecting appropriate instructional resources, presenting content, engaging learners, monitoring understanding, assessing learning outcomes and providing feedback. Innovative technologies can support each of these activities, but teachers need confidence and psychological preparedness to incorporate them appropriately.

The concept of psychological readiness provides a broader perspective for understanding this preparedness. Psychological readiness goes beyond technical knowledge to encompass teachers' cognitive, emotional and motivational disposition towards using innovative technologies. It includes confidence, willingness to learn, openness to innovation, curiosity, adaptability, perceived capability, preparedness for change and the ability to manage apprehension associated with unfamiliar technological environments. Recent research has explicitly treated teacher psychological preparedness for artificial intelligence as multidimensional, incorporating cognitive-affective readiness, technological-professional competence and institutional support (Ibrahim, Alrosaa, Diab, Alrashood, Hagar, Alotaibi, & Moussa, 2026). This perspective is important because teachers may simultaneously recognise the potential benefits of innovative technologies and experience uncertainty or anxiety about using them. Therefore, psychological readiness should not be reduced to a simple question of whether teachers possess technological skills.

The increasing emergence of artificial intelligence has made this psychological dimension even more significant. Artificial intelligence applications can assist teachers with lesson preparation, content generation, assessment, feedback, learner differentiation and the development of instructional resources. Yet the rapid pace of AI development can also generate uncertainty concerning competence, professional roles, ethics, accuracy, privacy and responsible classroom use. Gushchin and Gushchina (2025), for example, emphasised

psychological readiness as an important personal characteristic in preparing future teachers to use artificial intelligence within educational environments. Their position reinforces the argument that technological transformation requires psychological preparation alongside technical preparation. Similarly, Ayanwale, Idowu, Adelana, Shosanya, Falebita, and Adewale (2025), in a Nigerian-focused study of teacher readiness for artificial intelligence adoption, identified the importance of awareness, professional development, peer mentoring, supportive infrastructure and psychological factors in sustaining teachers' engagement with AI-based educational technologies.

The issue becomes particularly important when innovative technology is considered within the context of curriculum implementation. Curriculum implementation is not simply the mechanical delivery of prescribed subject content. It involves the interpretation of curriculum objectives, selection of instructional approaches, organisation of learning experiences and continuous adjustment of teaching practices to meet learners' needs. Innovative technologies can provide teachers with opportunities to personalise learning, present complex concepts through multimedia, facilitate collaborative learning, automate aspects of assessment, provide immediate feedback and extend learning beyond the physical classroom. However, the educational value of these technologies depends substantially on teachers' readiness to integrate them purposefully rather than merely use them because they are available. Recent evidence from technology-rich educational settings similarly shows that teachers' attitudes, confidence and technological-pedagogical readiness remain important alongside professional knowledge when integrating AI into teaching (PubMed, 2025).

International evidence demonstrates that the movement towards digital education has shifted attention from simple technology access to teachers' capacity and preparedness to use technology meaningfully. Peng, Abdul Razak, and Halili (2024) noted that teachers' self-efficacy, attitudes, and digital competence were important considerations in the integration of information and communication technologies into teaching. Similarly, Lucas, Bem-haja, Llorente Cejudo, and Palacios Rodríguez (2025) emphasised teachers' digital competence, knowledge, trust, and preparedness as important considerations in readiness for artificial intelligence integration. Studies of teachers' technology integration have therefore increasingly examined self-efficacy, digital competence, pedagogical knowledge, attitudes, and professional learning rather than treating technology provision as sufficient for educational transformation. This development reflects a broader recognition that digital transformation is fundamentally a human process. Teachers interpret technological innovations through existing beliefs, experiences, emotions, and professional identities. Where teachers perceive new technologies as manageable and useful, greater willingness to explore and incorporate them may emerge; where technologies are perceived as complex, threatening, or beyond existing capabilities, hesitation may arise. The psychological dimension therefore provides an important lens for understanding why the availability of similar technological resources can produce different levels of classroom preparedness among teachers.

The issue is also evident in relation to professional development. Traditional technology training that concentrates exclusively on technical procedures may not adequately address teachers' psychological needs. A workshop that teaches teachers how to operate a digital platform, for instance, may not necessarily make them confident enough to incorporate the platform into curriculum implementation. Teachers may require repeated opportunities for practice, peer support, mentoring, feedback and successful experiences with technology. Such experiences can strengthen confidence and reduce apprehension. Recent evidence on teacher readiness for AI similarly recommends continuous professional development, hands-on training, peer mentoring and supportive infrastructure rather than one-time exposure to technological tools (Ayanwale, Idowu, Adelana, Shosanya, Falebita, & Adewale, 2025). The

African educational context presents additional challenges to teachers' technological and psychological preparedness. Although many African countries have introduced digital education initiatives, disparities in electricity supply, internet connectivity, affordability of devices and data, technical support and professional development continue to influence the conditions under which teachers encounter innovative technologies. These contextual constraints can interact with teachers' psychological states. A teacher who has limited access to technology may have fewer opportunities to develop confidence through repeated practice. Similarly, a teacher who has previously experienced technological difficulties without adequate technical support may approach new technologies with apprehension. Thus, psychological readiness cannot be separated entirely from the environment in which teachers work. The Nigerian context is especially important because technological transformation is occurring alongside substantial variations in educational infrastructure, institutional support and teachers' opportunities for professional learning.

Recent Nigerian scholarship has increasingly drawn attention to teacher readiness for emerging educational technologies. Ayanwale, Idowu, Adelana, Shosanya, Falebita, and Adewale (2025) noted that Nigeria presents considerable variation in teachers' technological proficiency, access to digital resources and educational infrastructure. Their study further identified resource constraints, professional development opportunities and institutional support as important considerations in the progression from awareness to sustained technology use. This evidence suggests that technological readiness in Nigeria should be understood as multidimensional issue involving both personal and environmental conditions. Nigerian studies have also begun to examine teachers' digital self-efficacy more directly. Adekunle and Orifah (2023) examined teachers' self-efficacy and digital tool use in mathematics instruction, drawing attention to teachers' confidence in handling digital technologies for instructional purposes. Ogundare, Animasahun, and Abidoye (2023) similarly examined lecturers' knowledge and self-efficacy in employing digital technologies for curriculum instruction in tertiary institutions. More recent work by Ofomata and Akudolu (2025) examined digital self-efficacy alongside technology use for curriculum implementation among pre-service teachers in South-East Nigeria. The study is particularly relevant to the present investigation because it connects digital self-efficacy directly with curriculum implementation, although its focus on pre-service teachers leaves room for further investigation among practising teachers.

The increasing attention to artificial intelligence further demonstrates the need to examine psychological readiness among Nigerian teachers. Ambode, Ogundare, Oso, and Okunade (2025) investigated pre-service teachers' awareness, readiness and utilisation of artificial intelligence in education, while Ofem, Orim, Edam-Agbor, Amanso, Eni, Ukatu, Ovat, Osang, Dien, and Abuo (2025) examined teachers' preparedness for AI use in classroom assessment. These studies demonstrate that readiness involves more than awareness of emerging technologies. Teachers need appropriate technological knowledge, professional beliefs, confidence and opportunities to develop practical competence. The growing Nigerian literature therefore points towards a transition from asking whether teachers have access to technology to asking whether they are psychologically and professionally prepared to use it meaningfully. The importance of psychological readiness is further demonstrated by recent evidence showing that enthusiasm for technology can coexist with apprehension about its implementation. A recent study of science and mathematics teachers identified psychological preparedness for AI as involving cognitive-affective dimensions, technological-professional competence and institutional support (Ibrahem, Alrosaa, Diab, Alrashood, Hagar, Alotaibi, & Moussa, 2026). This is significant for the present study because a teacher may be interested in innovative technology while simultaneously feeling inadequate, uncertain or anxious about using it in actual curriculum

implementation. Such a teacher cannot be accurately described simply as either “ready” or “not ready” without examining the psychological dimensions underlying the readiness.

Interestingly, another important concern is that teachers are increasingly expected to adapt to technologies at a faster pace than traditional professional development systems may accommodate. New digital platforms and AI applications emerge rapidly, while teachers are simultaneously expected to meet existing curriculum requirements, manage classrooms, assess learners and respond to diverse educational needs. This situation can create cognitive and emotional pressure. Technology-related anxiety, fear of failure, uncertainty and perceived lack of competence may discourage experimentation. In contrast, successful experiences, supportive colleagues, accessible technical assistance and continuous professional learning can contribute to greater confidence. The psychological perspective is therefore necessary for understanding the teacher not merely as a technology user, but as a professional who must continuously adapt to changing educational environments. The level of technology integration research consequently reflects a gradual movement from infrastructure-centred thinking towards teacher-centred and psychologically informed approaches. Earlier technology initiatives often concentrated on providing computers, internet connectivity, smart classrooms and digital platforms. Contemporary research increasingly recognises that infrastructure constitutes only one component of successful digital transformation. Current scholarship is giving greater attention to teacher self-efficacy, digital competence, technological-pedagogical readiness, attitudes, motivation, trust, professional identity, anxiety and readiness for change. The recent development of instruments specifically designed to measure teachers' confidence in technology integration further illustrates this movement towards understanding the psychological foundations of technology use (Gomez, Vairez, Trespalacios, & Hung, 2026).

Notwithstanding these developments, important gaps remain. First, many existing studies concentrate on technology adoption, digital competence, technology acceptance or general readiness, while comparatively less attention is devoted to the combined consideration of digital self-efficacy and psychological readiness within curriculum implementation. Second, a considerable proportion of recent studies focus on pre-service teachers, university lecturers or teachers in particular subject areas. The experiences of practising teachers across the broader school context remain less sufficiently documented. Third, some existing investigations employ correlational, regression, structural equation modelling or other inferential designs to establish statistical associations or predictive patterns. While such approaches are useful for particular research purposes, they do not necessarily provide the detailed descriptive picture needed to understand teachers' current levels of confidence, psychological preparedness, perceived challenges and practical readiness across different dimensions of curriculum implementation. Hence, there is also a contextual gap. Findings generated in highly digitalised educational systems cannot automatically be generalised to Nigerian educational environments where teachers may encounter different combinations of infrastructure limitations, professional development opportunities, institutional support and technological exposure. Even within Nigeria, conditions can differ considerably across states, education zones and schools. Nsukka Education Zone in Enugu State therefore provides a relevant context for examining how practising teachers perceive their own digital capabilities and psychological preparedness for innovative technology use. A context-specific descriptive investigation can provide evidence about the current situation without assuming that teachers across different educational settings experience technological transformation in the same way.

The present study is consequently concerned with the human and psychological dimensions of digital transformation in education. It focuses on digital self-efficacy and psychological readiness for innovative technology use in curriculum implementation among

teachers in Nsukka Education Zone, Enugu State. The study recognises that meaningful technology integration requires teachers who are not only exposed to digital tools but are also confident in their abilities, willing to learn, open to innovation, adaptable to changing instructional demands and psychologically prepared to experiment with unfamiliar technologies. It therefore seeks to provide a descriptive account of teachers' digital self-efficacy, psychological readiness, and preparedness for innovative technology use in curriculum-related activities, challenges encountered and possible strategies for strengthening their readiness. The way forward requires a comprehensive approach that combines technological provision with psychological and professional support. Schools and education authorities need to move beyond one-off technology workshops towards sustained professional development that provides teachers with practical opportunities to use emerging technologies in authentic curriculum situations. Mentoring, peer learning, collaborative technology projects, demonstration lessons, continuous technical assistance and reflective professional learning can provide teachers with opportunities to develop confidence through practice. Professional development should also recognise that teachers differ in their previous technological experiences and psychological preparedness; consequently, training should be differentiated according to teachers' actual needs rather than assuming uniform levels of competence.

Furthermore, school leadership has an important role in creating an environment in which teachers can experiment with innovative technologies without excessive fear of failure. Supportive leadership, access to appropriate resources, reliable technical assistance and recognition of teachers' efforts can encourage a culture of innovation. Infrastructure development must also accompany psychological preparation. Reliable electricity, internet access, appropriate digital devices and affordable connectivity remain necessary foundations for sustained technology use. However, infrastructure alone cannot guarantee meaningful implementation. As recent Nigerian evidence indicates, sustainable technology engagement requires the combination of resources, professional development, awareness and supportive institutional conditions (Ayanwale, Idowu, Adelana, Shosanya, Falebita, & Adewale, 2025). Ultimately, the successful integration of innovative technology into curriculum implementation depends on recognising teachers as central participants in educational transformation. Digital technologies may provide unprecedented opportunities for teaching and learning, but their educational value is mediated by the readiness, confidence, knowledge and professional judgement of the teachers expected to use them. Examining digital self-efficacy alongside psychological readiness therefore provides a more comprehensive understanding of teachers' preparedness for technological change. In the context of Nsukka Education Zone, such evidence is important for identifying areas where teachers are already confident, areas requiring professional support, psychological barriers that may hinder experimentation, and institutional conditions that need strengthening. The present study thus addresses an important gap by providing descriptive evidence on the psychological preparedness of teachers for innovative technology use in curriculum implementation and by offering a contextually grounded basis for strengthening teacher preparation, professional development and technology-supported curriculum implementation in Enugu State.

Statement of the Problem

The effective implementation of the curriculum requires teachers who are adequately prepared to respond to changing instructional demands, including the increasing use of innovative technologies in schools. Ideally, teachers should demonstrate sufficient confidence in their ability to use digital technologies and possess the psychological preparedness needed to accept, explore and adapt to technological innovations in their professional activities. They should be able to approach new technologies with a reasonable level of confidence, willingness to learn and readiness to adjust their existing practices where necessary.

However, the situation in many school settings appears to be different. The increasing introduction of innovative technologies into education has created additional demands on teachers, yet not all teachers may feel adequately prepared to respond to these demands. Some may be uncertain about their ability to use unfamiliar technologies, while others may be hesitant to experiment with new technological tools or adapt their established classroom practices. Inadequate opportunities for practical training, limited technical support, infrastructural difficulties and the rapid emergence of new technologies may further create conditions in which teachers find it difficult to develop and maintain adequate confidence and psychological preparedness.

Of particular concern is that the availability of technological resources may be given greater attention than teachers' internal preparedness to use such resources. A teacher may have access to digital devices and technological applications without necessarily possessing the confidence or psychological readiness to incorporate them into curriculum implementation. This creates an important gap between having access to innovative technology and being personally prepared to use it. If this gap is not adequately understood, efforts to promote technology-supported curriculum implementation may not fully address the actual needs of teachers. The situation raises important questions about the extent to which teachers in Nsukka Education Zone are digitally confident and psychologically prepared for innovative technology use in curriculum implementation. There is also a need to determine the particular aspects of digital self-efficacy and psychological readiness that teachers possess, the challenges they encounter in becoming prepared for innovative technology use, and the measures that could strengthen their preparedness. Hence, the problem of the study, therefore, is that the level of digital self-efficacy and psychological readiness of teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State, has not been sufficiently established, thereby creating a need for systematic descriptive evidence on teachers' preparedness, the challenges confronting it, and the measures for strengthening it.

Purpose of the Study

The purpose of the study is to examine digital self-efficacy and psychological readiness for innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State. Specifically, the study seeks to:

1. determine the level of digital self-efficacy of teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State.
2. examine the level of psychological readiness of teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State.
3. determine the level of preparedness for innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State.
4. identify the challenges confronting teachers' readiness for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State.

Research Questions

The following research questions guided the study:

1. What is the level of digital self-efficacy of teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State?
2. What is the level of psychological readiness of teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State?
3. What is the level of preparedness for innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State?
4. What are the challenges confronting teachers' readiness for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State?

Methods

The study adopted a descriptive survey design. The design was considered appropriate because the study sought to obtain information on teachers' digital self-efficacy, psychological readiness, preparedness, and the challenges confronting innovative technology use in curriculum implementation without manipulating any of the variables. The study was conducted in Nsukka Education Zone of Enugu State, Nigeria. The education zone comprises public secondary schools where teachers implement the prescribed school curriculum and increasingly encounter the need to incorporate digital and other innovative technologies into teaching and learning. The population of the study comprised 896 teachers in Nsukka Education Zone, Enugu State. The entire population of 896 teachers was studied because the population was considered manageable. Consequently, no sampling technique was employed, as all the teachers in the identified population were included in the study. Data were collected using a researcher-developed questionnaire titled Digital Self-Efficacy and Psychological Readiness for Innovative Technology Use in Curriculum Implementation Questionnaire (DSEPRITUCIQ). The questionnaire was structured into sections to obtain information relevant to the four research questions. The items covered digital self-efficacy, psychological readiness, preparedness for innovative technology use in curriculum implementation, and challenges confronting teachers' readiness. The instrument was face-validated by three experts, comprising two experts from the Department of Psychology, Faculty of the Social Sciences, University of Nigeria, Nsukka, and one expert from the Institute of Education, University of Nigeria, Nsukka. The experts examined the instrument in terms of clarity, relevance, adequacy, appropriateness of the items, and coverage of the study objectives.

The reliability of the instrument was established using Cronbach Alpha, which yielded an overall reliability coefficient of 0.84. The coefficient indicated that the questionnaire had adequate internal consistency and was sufficiently reliable for data collection. The questionnaire was administered directly to the 896 teachers with the assistance of trained research assistants. The respondents were adequately guided on the purpose of the instrument and the appropriate procedure for completing the questionnaire. The completed copies were retrieved and screened for completeness before being subjected to analysis. Data collected were analysed using mean and standard deviation in line with the research questions. The mean was used to determine the level of teachers' digital self-efficacy, psychological readiness, and preparedness, as well as teachers' responses to the identified challenges. Standard deviation was used to determine the extent to which the responses varied around the mean. For digital self-efficacy, psychological readiness, and preparedness, a mean score of 2.50 and above was regarded as high, while a mean score below 2.50 was regarded as low. For the identified challenges, a mean score of 2.50 and above was regarded as Agreed, while a mean score below 2.50 was regarded as Disagreed.

Results

Table 1: Mean and Standard Deviation of Teachers' Responses on the Level of Digital Self-Efficacy for Innovative Technology Use in Curriculum Implementation

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Confidence in learning new digital technologies for teaching assigned subjects.	3.32	0.68	High
2	Confidence in using digital technologies to prepare lesson plans and instructional materials.	3.25	0.71	High
3	Ability to use unfamiliar digital applications for classroom teaching after basic guidance.	3.08	0.79	High
4	Confidence in using digital technologies to present curriculum content to students.	3.29	0.69	High

5	Ability to handle basic technological difficulties arising during the use of digital tools for lessons.	2.96	0.83	High
6	Capability to use innovative technologies for classroom assessment.	3.15	0.76	High
7	Confidence in adapting teaching methods when new digital technologies are introduced.	3.11	0.78	High
8	Ability to independently use appropriate digital technologies to support classroom teaching.	3.05	0.81	High
Grand Mean		3.15	0.76	High

Table 1 indicates a high level of digital self-efficacy among teachers for innovative technology use in curriculum implementation, as shown by the grand mean of $\bar{x} = 3.15$ and standard deviation of $SD = 0.76$, which exceeded the criterion mean of 2.50. The item mean scores ranged from $\bar{x} = 2.96$ to $\bar{x} = 3.32$, with all eight items recording mean scores above the criterion level. The highest mean score was recorded for confidence in learning new digital technologies for teaching assigned subjects ($\bar{x} = 3.32$, $SD = 0.68$), while the lowest mean score was recorded for the ability to handle basic technological difficulties arising during the use of digital tools for lessons ($\bar{x} = 2.96$, $SD = 0.83$). The standard deviation values, ranging from 0.68 to 0.83, indicate moderate variability in the responses. In general, the findings indicate a high level of digital self-efficacy ($\bar{x} = 3.15$, $SD = 0.76$) among teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State.

Table 2: Mean and Standard Deviation of Teachers' Responses on the Level of Psychological Readiness for Innovative Technology Use in Curriculum Implementation

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Willingness to learn new technologies introduced for classroom teaching.	3.28	0.70	High
2	Openness to incorporating innovative technologies into classroom instruction.	3.21	0.73	High
3	Readiness to adjust established teaching practices when new technologies are introduced.	3.16	0.76	High
4	Interest in exploring unfamiliar digital technologies for curriculum implementation.	3.24	0.72	High
5	Ability to remain calm when encountering difficulties while learning new technologies.	2.89	0.86	High
6	Willingness to acquire additional knowledge and skills required for emerging educational technologies.	3.31	0.67	High
7	Preparedness to experiment with innovative technologies in classroom teaching.	3.07	0.81	High
8	Positive mental disposition towards changes arising from the introduction of innovative technologies in education.	3.12	0.79	High
Grand Mean		3.16	0.76	High

Table 2 indicates a high level of psychological readiness among teachers for innovative technology use in curriculum implementation, with a grand mean of $\bar{x} = 3.16$ and standard deviation of $SD = 0.76$, which exceeded the criterion mean of 2.50. The item mean scores ranged from $\bar{x} = 2.89$ to $\bar{x} = 3.31$, indicating that all the identified indicators attained mean scores above the established decision criterion. The highest mean score was recorded for willingness to acquire additional knowledge and skills required for emerging educational technologies ($\bar{x} = 3.31$, $SD = 0.67$). This was followed by willingness to learn new technologies introduced for classroom teaching ($\bar{x} = 3.28$, $SD = 0.70$) and interest in

exploring unfamiliar digital technologies for curriculum implementation ($\bar{x} = 3.24$, $SD = 0.72$). The lowest mean score was recorded for the ability to remain calm when encountering difficulties while learning new technologies ($\bar{x} = 2.89$, $SD = 0.86$). The standard deviation values, ranging from 0.67 to 0.86, indicate moderate variability in the teachers' responses. Overall, the findings indicate a high level of psychological readiness ($\bar{x} = 3.16$, $SD = 0.76$) among teachers for innovative technology use in curriculum implementation in Nsukka Education Zone, Enugu State.

Table 3: Mean and Standard Deviation of Teachers' Responses on the Level of Preparedness for Innovative Technology Use in Curriculum Implementation

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Readiness to integrate innovative technologies into lesson planning and preparation.	3.22	0.72	High
2	Preparedness to use innovative technologies in presenting curriculum content during classroom instruction.	3.18	0.75	High
3	Readiness to select appropriate digital resources for different curriculum topics.	3.14	0.78	High
4	Preparedness to use innovative technologies for classroom assessment and evaluation.	3.05	0.82	High
5	Readiness to incorporate technology-supported activities into classroom learning.	3.20	0.73	High
6	Preparedness to modify instructional approaches when curriculum activities require innovative technology use.	3.11	0.79	High
7	Readiness to use innovative technologies to provide varied learning opportunities for students.	3.16	0.76	High
8	Preparedness to participate in continuous professional development on emerging educational technologies.	3.27	0.69	High
Grand Mean		3.17	0.76	High

Table 3 indicates a high level of preparedness among teachers for innovative technology use in curriculum implementation, as shown by the grand mean of $\bar{x} = 3.17$ and standard deviation of $SD = 0.76$, which exceeded the criterion mean of 2.50. The item mean scores ranged from $\bar{x} = 3.05$ to $\bar{x} = 3.27$, with all eight items recording mean scores above the criterion level. The highest mean score was recorded for preparedness to participate in continuous professional development on emerging educational technologies ($\bar{x} = 3.27$, $SD = 0.69$). This was followed by readiness to integrate innovative technologies into lesson planning and preparation ($\bar{x} = 3.22$, $SD = 0.72$) and readiness to incorporate technology-supported activities into classroom learning ($\bar{x} = 3.20$, $SD = 0.73$). The lowest mean score was recorded for preparedness to use innovative technologies for classroom assessment and evaluation ($\bar{x} = 3.05$, $SD = 0.82$). The standard deviation values, ranging from 0.69 to 0.82, indicate moderate variability in the teachers' responses. Overall, the findings indicate a high level of preparedness ($\bar{x} = 3.17$, $SD = 0.76$) for innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State.

Table 4: Mean and Standard Deviation of Teachers' Responses on the Challenges Confronting Readiness for Innovative Technology Use in Curriculum Implementation

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Inadequate access to reliable internet connectivity for technology-supported curriculum implementation.	3.36	0.71	Agreed
2	Unstable electricity supply for regular use of innovative technologies in schools.	3.48	0.64	Agreed

3	High cost of internet data and maintenance of technological devices.	3.42	0.68	Agreed
4	Inadequate access to functional digital devices for classroom teaching and learning.	3.31	0.73	Agreed
5	Limited opportunities for practical training on emerging educational technologies.	3.27	0.76	Agreed
6	Inadequate technical support when technological difficulties occur during curriculum implementation.	3.25	0.78	Agreed
7	Limited time for learning and integrating innovative technologies into classroom activities.	3.08	0.82	Agreed
8	Inadequate institutional support for the adoption of innovative technologies in curriculum implementation.	3.30	0.74	Agreed
Grand Mean		3.31	0.73	Agreed

Table 4 indicated that teachers agreed that the identified factors constituted challenges confronting readiness for innovative technology use in curriculum implementation, with a grand mean of $\bar{x} = 3.31$ and $SD = 0.73$. The highest mean was recorded for unstable electricity supply ($\bar{x} = 3.48$, $SD = 0.64$), while the lowest was recorded for limited time for learning and integrating innovative technologies ($\bar{x} = 3.08$, $SD = 0.82$). All eight items had mean scores above the criterion mean of 2.50, indicating agreement that the factors constituted challenges. The standard deviation values showed moderate variation in the teachers' responses.

Discussion

The findings of the study revealed that teachers in Nsukka Education Zone, Enugu State, had a high level of digital self-efficacy for innovative technology use in curriculum implementation, with a grand mean of $\bar{x} = 3.15$ and standard deviation of $SD = 0.76$. The finding indicates that the teachers generally possessed confidence in learning new digital technologies, preparing technology-supported lesson plans and instructional materials, presenting curriculum content, conducting classroom assessment, adapting teaching methods, and using appropriate digital technologies for classroom teaching. The findings are in consonance with the study of Adekunle and Orifah (2023), who reported considerable teachers' self-efficacy in the use of digital tools for mathematics instruction in selected secondary schools in Abuja. The agreement may be attributed to the increasing exposure of teachers to digital technologies and the growing demand for technology-supported classroom instruction. The findings are also in consonance with Ofomata and Akudolu (2025), who examined digital self-efficacy and technology use for curriculum implementation among pre-service teachers in secondary schools. Their study supports the present finding that digital self-efficacy constitutes an important basis for technology-supported curriculum implementation. Similarly, Ogundare, Animasahun, and Abidoye (2023) reported appreciable levels of knowledge and self-efficacy in the use of digital technologies for curriculum instruction, which agrees with the present finding. Gomez, Vairez, Trespalacios, and Hung (2026) also emphasised technology integration confidence as an important dimension of technology use and integration. However, the present finding has a slight negative dimension because the ability to handle basic technological difficulties recorded the lowest mean of $\bar{x} = 2.96$, $SD = 0.83$. This suggests that although teachers possessed high confidence in using digital technologies, confidence may not be equally strong when unexpected technical problems occur. Thus, the finding supports the positive evidence from the reviewed studies while also indicating the need for practical training in troubleshooting and managing technological difficulties.

The findings of the study revealed that teachers in Nsukka Education Zone, Enugu State, had a high level of psychological readiness for innovative technology use in curriculum

implementation, with a grand mean of $\bar{x} = 3.16$ and standard deviation of $SD = 0.76$. The finding indicates that teachers were generally willing to learn new technologies, open to incorporating innovative technologies into classroom instruction, prepared to adjust established teaching practices, interested in exploring unfamiliar technologies, and willing to acquire additional knowledge and skills required for emerging educational technologies. The findings are in consonance with the study of Gushchin and Gushchina (2025), who examined psychological readiness of future teachers to use artificial intelligence technologies in the educational environment and emphasised psychological preparedness as an important consideration in the introduction of emerging technologies. The findings are also in consonance with Ibrahim, Alrosaa, Diab, Alrashood, Hagar, Alotaibi, and Moussa (2026), who examined teachers' psychological preparedness for AI-integrated teaching environments and highlighted instructional proficiency, professional motivation, technological orientation, and training needs as important considerations. Similarly, Ayanwale, Idowu, Adelana, Shosanya, Falebita, and Adewale (2025) examined teachers' readiness for artificial intelligence adoption in education, providing support for the present finding that teachers can demonstrate readiness towards emerging technologies. Ambode, Ogundare, Oso, and Okunade (2025) also examined awareness and readiness for artificial intelligence among pre-service teachers and provided further support for the present finding. However, the finding contains a small negative aspect because the ability to remain calm when encountering difficulties while learning new technologies recorded the lowest mean of $\bar{x} = 2.89$, $SD = 0.86$. This suggests that willingness to embrace innovative technologies does not necessarily mean complete psychological comfort when difficulties arise. Therefore, the high level of psychological readiness is encouraging, but continuous mentoring, practical exposure, and supportive training may be required to strengthen teachers' psychological confidence during technological challenges.

The findings of the study revealed that teachers in Nsukka Education Zone, Enugu State, had a high level of preparedness for innovative technology use in curriculum implementation, with a grand mean of $\bar{x} = 3.17$ and standard deviation of $SD = 0.76$. The finding indicates that teachers were prepared to integrate innovative technologies into lesson planning, present curriculum content through technology, select appropriate digital resources, conduct technology-supported assessment, incorporate technology-supported activities, modify instructional approaches, provide varied learning opportunities, and participate in continuous professional development. The findings are in consonance with the study of Ofem, Orim, Edam-Agbor, Amanso, Eni, Ukatu, Ovat, Osang, Dien, and Abuo (2025), who examined teachers' preparedness for the utilisation of artificial intelligence in classroom assessment. Their study supports the present finding that teachers' preparedness is important for technology-supported instructional activities. The findings are also in consonance with Ayanwale, Idowu, Adelana, Shosanya, Falebita, and Adewale (2025), who examined teachers' readiness for artificial intelligence adoption in education and provided evidence supporting the importance of teachers' preparedness for emerging technologies. Similarly, Ofomata and Akudolu (2025) focused on digital self-efficacy and technology use for curriculum implementation, providing a closely related basis for the present finding. Ambode, Ogundare, Oso, and Okunade (2025) also examined readiness for artificial intelligence in education and their work supports the view that teachers can demonstrate considerable readiness for emerging educational technologies. However, there is a slight negative aspect because preparedness for the use of innovative technologies in classroom assessment recorded the lowest mean of $\bar{x} = 3.05$, $SD = 0.82$. Although the mean still indicated a high level, the result suggests that preparedness may not be equally strong across all curriculum activities. Teachers may be more prepared for lesson planning and instructional presentation than for specialised technology-supported assessment activities.

This implies that professional development should address specific curriculum tasks rather than assuming that general preparedness represents equal preparedness across all areas.

The findings of the study revealed that teachers in Nsukka Education Zone, Enugu State, identified the investigated factors as major challenges confronting readiness for innovative technology use in curriculum implementation, with a grand mean of $\bar{x} = 3.31$ and standard deviation of $SD = 0.73$. The challenges included unstable electricity supply, high cost of internet data and technology maintenance, inadequate internet connectivity, inadequate access to functional digital devices, limited opportunities for practical training, inadequate technical support, limited time for learning and integrating innovative technologies, and inadequate institutional support. The findings are in consonance with the study of Ibrahim, Alrosaa, Diab, Alrashood, Hagar, Alotaibi, and Moussa (2026), which highlighted training needs as an important consideration in teachers' psychological preparedness for AI-integrated teaching environments. The findings are also in consonance with Ofem, Orim, Edam-Agbor, Amanso, Eni, Ukatu, Ovat, Osang, Dien, and Abuo (2025), whose study considered technological readiness as an important aspect of teachers' preparedness for artificial intelligence use in classroom assessment. Similarly, Ofomata and Akudolu (2025), in their study of digital self-efficacy and technology use for curriculum implementation, provide support for the importance of appropriate conditions for technology-supported curriculum activities. Ayanwale, Idowu, Adelana, Shosanya, Falebita, and Adewale (2025) also examined teachers' readiness for artificial intelligence adoption and support the need to consider the broader conditions surrounding teachers' readiness for emerging technologies. However, the present finding provides an important positive argument because the major challenges were identified despite the high levels of digital self-efficacy, psychological readiness, and preparedness recorded in the first three research questions. This suggests that teachers' readiness is not necessarily the major problem; rather, inadequate environmental and institutional conditions may constrain the utilisation of that readiness. The highest-rated challenge, unstable electricity supply ($\bar{x} = 3.48$, $SD = 0.64$), demonstrates that teachers may be willing and prepared to use innovative technologies but may face practical difficulties when basic infrastructure is unreliable. The finding therefore indicates that improving teachers' readiness should be accompanied by improvements in electricity supply, internet connectivity, and access to functional devices, practical training, technical support, and institutional support.

Contribution to Knowledge

The study contributes to knowledge by providing empirical evidence on digital self-efficacy, psychological readiness, preparedness, and the challenges confronting innovative technology use in curriculum implementation among teachers in Nsukka Education Zone, Enugu State. The study establishes that teachers possessed a high level of digital self-efficacy, indicating considerable confidence in learning and applying digital technologies for lesson preparation, classroom instruction, assessment, and other curriculum activities. The study further contributes by demonstrating that teachers had a high level of psychological readiness for innovative technology use, suggesting openness, willingness to learn, adaptability, and preparedness to acquire additional knowledge and skills required for emerging educational technologies. Another contribution of the study is the evidence that teachers demonstrated a high level of preparedness for integrating innovative technologies into curriculum implementation. However, the study reveals an important contextual dimension by showing that teachers simultaneously identified major challenges, particularly unstable electricity supply, high cost of internet data and technology maintenance, inadequate internet connectivity, insufficient access to functional digital devices, limited practical training opportunities, inadequate technical support, limited time, and insufficient

institutional support. Thus, the study contributes a more comprehensive understanding of technology readiness by showing that teacher-level readiness can be high while infrastructural and institutional conditions remain major barriers to effective technology-supported curriculum implementation. This finding provides useful empirical evidence for educational administrators, policymakers, teacher educators, and school authorities seeking to strengthen innovative technology use in secondary school curriculum implementation in Enugu State and similar educational settings.

Conclusion

Based on the findings of the study, it was concluded that teachers in Nsukka Education Zone, Enugu State, possessed a high level of digital self-efficacy for innovative technology use in curriculum implementation. The teachers demonstrated considerable confidence in learning and applying digital technologies for lesson planning, instructional delivery, assessment, and classroom teaching. The study also concluded that teachers had a high level of psychological readiness, indicating willingness to learn new technologies, openness to innovation, readiness to adjust teaching practices, and willingness to acquire additional technological knowledge and skills. Furthermore, teachers demonstrated a high level of preparedness for innovative technology use in curriculum implementation, particularly in lesson preparation, presentation of curriculum content, selection of digital resources, technology-supported learning activities, and continuous professional development. Despite these encouraging levels of self-efficacy, psychological readiness, and preparedness, major challenges were identified, with unstable electricity supply emerging as the most prominent challenge. The overall conclusion is that teachers in Nsukka Education Zone appear sufficiently ready at the personal and professional levels to embrace innovative technologies, but the successful translation of this readiness into consistent curriculum implementation requires adequate infrastructure, reliable electricity, affordable internet access, functional digital devices, practical training, technical assistance, and institutional support.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The Enugu State Government and relevant educational authorities should ensure regular and reliable electricity supply in public schools, as unstable electricity supply was identified as the most prominent challenge confronting innovative technology use in curriculum implementation.
2. School authorities should provide adequate functional digital devices and improve internet connectivity, while measures should be taken to reduce the high cost of internet data and technology maintenance identified as major challenges.
3. School authorities should organise regular practical training and continuous professional development programmes to strengthen teachers' capacity to use emerging educational technologies, particularly in technology-supported classroom assessment and troubleshooting.
4. School administrators should establish effective technical support systems to provide prompt assistance when technological difficulties occur during curriculum implementation, particularly as handling basic technological difficulties recorded comparatively lower digital self-efficacy.
5. Educational policymakers and school administrators should strengthen institutional support for innovative technology use by providing adequate resources, supportive policies, and opportunities for practical engagement, since teachers demonstrated high digital self-efficacy, psychological readiness, and preparedness but still faced major environmental and institutional challenges.

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