

TEACHERS' READINESS FOR DIGITAL PEDAGOGY IN PRIMARY SCHOOLS IN NSUKKA LOCAL GOVERNMENT AREA OF ENUGU STATE

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Abstract - This study examined teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State. A descriptive survey research design was adopted. The population comprised 481 teachers from 38 nursery/primary schools, while a sample of 380 teachers was selected using simple random sampling. Data were collected using a structured questionnaire validated by experts, with a reliability coefficient of 0.93. Data were analyzed using mean and standard deviation, while an independent sample t-test was used to test the hypothesis at a 0.05 level of significance. The findings revealed that teachers have a moderate level of readiness but possess low digital competence. Digital tools were found to be largely not available in schools, while challenges such as lack of training, poor electricity supply, and limited internet access significantly affect readiness. The study also showed that there is no significant difference between male and female teachers' readiness. It was concluded that teachers' readiness for digital pedagogy is limited by lack of resources, inadequate training, and poor infrastructure. The study recommended provision of digital tools, improved infrastructure, and continuous teacher training to enhance effective digital teaching.

Keywords: Teachers' readiness, digital pedagogy, primary schools, digital competence

Introduction

In recent years, the use of digital technology in education has continued to change the way teaching and learning take place in schools. Classrooms are no longer limited to the use of chalkboards and textbooks alone, as digital tools such as computers, tablets, projectors, and online learning platforms are gradually being introduced. This shift has brought about what is known as digital pedagogy, which focuses on using digital technologies to improve teaching and make learning more interactive, engaging, and meaningful for pupils. At the primary school level, where pupils are developing basic literacy, numeracy, and thinking skills, the use of digital pedagogy is especially important because it helps to make lessons clearer and more interesting. Digital pedagogy has been explained by different scholars in ways that emphasize its importance in modern education. The United Nations Educational, Scientific and Cultural Organization (2023) described digital pedagogy as the use of digital tools and resources to enhance teaching and learning in a way that promotes active participation and better learning outcomes. In the same way, the Organisation for Economic Co-operation and Development (2021) explained that digital pedagogy involves integrating technology into teaching to support innovative instructional methods and develop learners' digital skills. These explanations show that digital pedagogy is not just about introducing technology into the classroom, but about using it effectively to improve how teaching is done and how pupils learn. This makes it necessary to consider whether teachers are adequately prepared to use these technologies.

Teachers' readiness for digital pedagogy refers to the extent to which teachers have the skills, knowledge, confidence, and willingness to use digital tools in teaching. A teacher who is ready for digital pedagogy is expected to be able to operate digital devices,

apply them during lessons, and use them to achieve instructional objectives. Organisation for Economic Co-operation and Development (2021) explained that teachers' readiness includes digital competence, positive attitude towards technology, and the ability to integrate digital tools into teaching. Similarly, the United Nations Educational, Scientific and Cultural Organization (2023) emphasized that teachers' readiness is a key factor in determining the success of digital learning in schools. This shows that even when digital tools are available, their effectiveness depends largely on how prepared teachers are to use them.

Across the world, there has been increasing attention on the need to equip teachers with the skills required for digital teaching. Many countries have introduced policies and training programs aimed at improving teachers' digital competence and encouraging the use of technology in education. In Nigeria, the importance of digital education has been recognized by the Federal Republic of Nigeria through the National Policy on Education (Federal Republic of Nigeria, 2014), which encourages the integration of Information and Communication Technology into teaching and learning. In addition, recent efforts by the Federal Ministry of Education have focused on promoting digital learning and improving teachers' ability to use technology effectively (Federal Ministry of Education, 2022). These efforts are intended to ensure that teachers are prepared for modern classrooms and that pupil's benefit from improved teaching methods.

However, despite these efforts, the reality in many primary schools, particularly in Nsukka Local Government Area of Enugu State, shows that teachers' readiness for digital pedagogy is still limited. In many schools, digital tools are either not available or are insufficient, which makes it difficult for teachers to gain practical experience in using them. Even when some digital tools are present, many teachers lack the necessary training and confidence to use them effectively in teaching. Uche and Nwosu (2020) observed that limited digital competence among teachers reduces their ability to integrate technology into classroom instruction. This suggests that readiness is not only about access to tools but also about the ability to use them effectively. In addition to skill-related challenges, infrastructural factors also play an important role in shaping teachers' readiness. In many schools, there are issues such as poor electricity supply, lack of internet connectivity, and inadequate maintenance of digital equipment. Reports by the World Bank (2023) and the United Nations Children's Fund (2022) have shown that poor school conditions and lack of basic facilities limit the effective use of digital technologies. In some schools, classrooms are overcrowded, and basic facilities are inadequate, making it difficult for teachers to apply digital teaching methods. These conditions can discourage teachers and reduce their willingness to adopt digital pedagogy.

Another important factor that may influence teachers' readiness is gender. Some studies suggest that male teachers tend to report higher confidence in using digital technologies, while female teachers may face challenges related to access and training opportunities (Aduwa-Ogiegbaen and Iyamu, 2020). However, other studies have shown that when both male and female teachers are given equal opportunities for training and support, they demonstrate similar levels of readiness and competence (United Nations Educational, Scientific and Cultural Organization, 2022). This shows that differences in readiness are not necessarily based on ability, but on the level of exposure and support available to teachers. Furthermore, teachers' experience and level of exposure to digital technology also affect their readiness. Teachers who are more familiar with digital tools tend to feel more confident and are more willing to use them in teaching. On the other hand, teachers with limited exposure may find it difficult to adapt to digital teaching methods and may prefer traditional approaches. The Organisation for Economic Co-

operation and Development (2021) emphasized that familiarity with technology increases teachers' confidence and encourages its use in teaching. This highlights the importance of continuous professional development in improving teachers' readiness for digital pedagogy.

Another important factor affecting teachers' readiness is the availability of continuous professional development. Digital technology is constantly evolving, and teachers need regular training to keep up with new tools and teaching methods. Continuous professional development helps teachers to improve their skills, build confidence, and effectively integrate digital tools into teaching (Organisation for Economic Co-operation and Development, 2021; United Nations Educational, Scientific and Cultural Organization, 2023). However, many teachers do not have access to regular training programs, workshops, or seminars that focus on digital pedagogy. This lack of continuous learning opportunities limits their ability to improve their skills and adapt to modern teaching approaches. Previous empirical studies have examined different aspects of digital pedagogy and teachers' readiness. For example, Uche and Nwosu (2020) found that many primary school teachers in Nigeria possess limited digital competence, which affects their ability to integrate technology into classroom instruction. Similarly, Ogunyemi (2022) reported that inadequate training and poor infrastructural facilities discourage teachers from adopting digital technologies in teaching. Reports by UNESCO (2022, 2023) and the World Bank (2023) also identified inadequate digital infrastructure, unreliable electricity supply, and limited internet connectivity as major barriers to effective digital learning in developing countries.

Although these studies provide valuable insights into teachers' digital competence and the challenges associated with digital pedagogy, most of them focused on teachers in different locations or examined digital technology in education generally. Few studies have specifically investigated the overall readiness of primary school teachers for digital pedagogy by considering their readiness level, digital competence, availability of digital tools, challenges, and gender differences within Nsukka Local Government Area of Enugu State. Consequently, there is limited empirical evidence on the preparedness of primary school teachers in the study area for effective digital pedagogy. It is this identified gap that necessitated the present study, which seeks to examine teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State. The findings of the study are expected to provide evidence that will assist educational stakeholders in improving teachers' digital competence, strengthening school infrastructure, and promoting effective integration of digital technologies into primary education.

From the foregoing, it is clear that digital pedagogy has great potential to improve teaching and learning, but its success depends largely on teachers' readiness. Teachers play a central role in the classroom, and their level of preparedness will determine how effectively digital tools are used. Therefore, it becomes necessary to examine teachers' readiness for digital pedagogy in primary schools, including the influence of gender, infrastructure, and training opportunities. This study is therefore focused on teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State, with the aim of improving teaching practices and enhancing pupils' learning outcomes in a digital age.

Statement of the Problem

Ideally, with the growing emphasis on digital education, teachers in primary schools are expected to be adequately prepared to use digital pedagogy in their classrooms. This means they should possess the necessary digital skills, confidence, and

access to appropriate tools to effectively integrate technology into teaching and learning. With policies introduced by the Federal Republic of Nigeria and other educational initiatives, classrooms are expected to become more interactive and technology-driven, with teachers using digital tools to improve pupils' understanding and participation. Many primary schools in Nsukka Local Government Area of Enugu State is quite different from this expectation. In most schools, digital tools required for digital pedagogy are not available, making it difficult for teachers to gain practical experience in using them. Even in situations where some digital tools exist, many teachers lack the necessary training, skills, and confidence to use them effectively. In addition, challenges such as poor electricity supply, lack of internet connectivity, overcrowded classrooms, and absence of continuous professional development further limit teachers' readiness for digital pedagogy. The growing demand for digital teaching in schools, compared with the limited level of preparedness seen among many teachers has become a major concern for effective digital pedagogy. It also brings into question whether factors such as lack of access to digital tools, gender, and poor school conditions influence teachers' level of preparedness. Therefore, the problem of this study is to examine teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State, particularly in a context where digital tools are largely unavailable, and to determine how these factors affect their readiness and ability to integrate technology into teaching.

Purpose of the Study

The main purpose of this study is to examine teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State. Specifically, the study seeks to:

1. Determine the level of teachers' readiness for digital pedagogy in primary schools.
2. Examine teachers' digital skills and competence in using digital tools for teaching.
3. Find out the extent to which digital tools are available in primary schools.
4. Identify the challenges affecting teachers' readiness for digital pedagogy.
5. Determine whether there is any difference between male and female teachers' readiness for digital pedagogy.

Research Questions

The following research questions guided the study

1. What is the level of teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area?
2. What digital skills and competencies do teachers possess for the use of digital tools in teaching?
3. To what extent are digital tools available in primary schools?
4. What challenges affect teachers' readiness for digital pedagogy?
5. Is there any difference between male and female teachers' readiness for digital pedagogy?

Hypothesis

The following null hypothesis was formulated to guide the study and was tested at the 0.05 level of significance:

- H₀₁:** There is no significant difference between the mean readiness scores of male and female teachers regarding digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State..

Methods

This study adopted a descriptive survey research design, as it enabled the researcher to gather information from teachers on their readiness for digital pedagogy in

primary schools. The study was carried out in Nsukka Local Government Area of Enugu State. The population of the study consisted of 481 teachers from 38 nursery/primary schools in Nsukka Local Government Area of Enugu State. Out of this population, 380 teachers were selected for the study using simple random sampling. To do this, the researcher first obtained number of teachers from the ENSUBEB Statistical Unit (2025). The numbers were then randomly picked without replacement until the required sample size of 380 teachers was reached. This gave every teacher an equal opportunity of being selected, irrespective of the school where the teacher teaches. This method was used to reduce bias and ensure that the selected teachers fairly represented the entire population. The large difference between the number of male and female teachers was not caused by the researcher; rather, it shows the actual situation in the schools, where female teachers are more in number than male teachers. The instrument used for data collection was a structured questionnaire titled Teachers' Readiness for Digital Pedagogy Questionnaire (TRDPQ). The questionnaire was designed by the researcher based on the purpose of the study and the research questions. It was divided into sections to cover the major areas of the study. Section A collected the personal information of the respondents, such as gender and teaching experience. Section B measured teachers' general readiness for digital pedagogy, Section C measured teachers' digital skills and competence, Section D focused on the availability of digital tools in schools, and Section E measured the challenges affecting teachers' readiness. The questionnaire was structured on a 4-point rating scale of Strongly Agree, Agree, Disagree, and Strongly Disagree. These sections helped to ensure that the instrument covered the major dimensions of teachers' readiness for digital pedagogy, including readiness level, digital competence, availability of digital tools, and challenges affecting digital teaching. The instrument was validated by three experts, comprising two experts from Early Childhood and Primary Education and one expert from Measurement and Evaluation, all from the Faculty of Education, University of Nigeria, Nsukka. Their input ensured the clarity, relevance, and appropriateness of the instrument. To ensure the reliability of the instrument, a pilot study was conducted using 20 teachers from Igboeze Local Government Area, which has similar characteristics to the study area. The data obtained were analyzed using Cronbach's Alpha, yielding a reliability coefficient of 0.93, indicating that the instrument was highly reliable. The data collected were analyzed using mean and standard deviation to answer the research questions, with 2.50 as the decision rule. An independent sample t-test was used to test the hypothesis at a 0.05 level of significance. The mean scores obtained from the questionnaire were interpreted using the following scale: 1.00–1.49 = Very Low, 1.50–2.49 = Low, 2.50–3.24 = Moderate, and 3.25–4.00 = High. In addition, a mean score of 2.50 and above was regarded as an agreement with an item, while a mean score below 2.50 was regarded as disagreement.

Results

Research Question One: What is the level of teachers' readiness for digital pedagogy?

Table 1: Mean and Standard Deviation Scores of Teachers' Readiness for Digital Pedagogy

S/N	Items	Mean	SD	Decision
1	Teachers can operate basic digital tools (computer, projector).	2.80	0.74	Agree
2	Teachers can use digital tools during teaching.	2.55	0.82	Agree
3	Teachers can confidently use digital technology in the classroom.	2.40	0.88	Disagree

4	Teachers can integrate digital tools into their lessons.	2.35	0.90	Disagree
5	Teachers are willing to adopt digital teaching methods.	2.70	0.76	Agree
Grand Mean		2.56	0.82	Agree

The result in Table 1 shows that teachers have a moderate level of readiness for digital pedagogy, as reflected by the grand mean of 2.56 and standard deviation of 0.82. This means that teachers are not completely unprepared for digital teaching, but they are also not fully ready to effectively use digital tools in classroom instruction. The responses show that many teachers can operate basic digital tools and are willing to adopt digital teaching methods. This suggests that teachers already have some awareness of digital technology and understand its importance in education. However, teachers disagreed on their confidence in using digital technology and their ability to integrate it into lessons. This shows that while teachers may know about digital tools theoretically, many still find it difficult to apply them practically during teaching. The standard deviation of 0.82 indicates that teachers' responses were fairly close to one another, meaning that most of them shared similar opinions about their level of readiness. Overall, the finding suggests that teachers are still at a developing stage of readiness and need more practical exposure and support to effectively implement digital pedagogy.

Research Question Two: What digital skills and competencies do teachers possess?

Table 2: Mean and Standard Deviation Scores of Teachers' Digital Skills and Competence

S/N	Items	Mean	SD	Decision
1	Teachers can use Microsoft applications (Word, PowerPoint).	2.65	0.78	Agree
2	Teachers can use the internet for teaching.	2.50	0.85	Agree
3	Teachers can create digital instructional materials.	2.20	0.91	Disagree
4	Teachers can use advanced digital applications.	2.15	0.93	Disagree
5	Teachers can solve basic technical problems.	2.18	0.89	Disagree
Grand Mean		2.34	0.87	Disagree

The result in Table 2 revealed that teachers possess low digital competence overall, as indicated by the grand mean of 2.34 and standard deviation of 0.87. This means that although teachers have some basic digital knowledge, they still lack the advanced skills required for effective digital teaching. Teachers agreed that they could use simple applications such as Microsoft Word, PowerPoint, and the internet. However, they disagreed on their ability to create digital instructional materials; use advanced digital applications, and solve technical problems. This shows that teachers' digital competence is mainly limited to basic operations and does not extend to more practical and advanced classroom applications. The standard deviation of 0.87 shows that the responses were relatively close, indicating that many teachers shared similar experiences regarding their limited digital skills. This finding suggests that teachers may struggle to effectively use digital pedagogy even when digital tools are available because they do not yet possess the necessary technical competence.

Research Question Three : To what extent are digital tools available in primary schools?

Table 3: Mean and Standard Deviation Scores of Availability of Digital Tools

S/N	Items	Mean	SD	Decision
1	Digital devices are available in my school.	1.70	0.65	Disagree
2	Internet facilities are available.	1.60	0.68	Disagree
3	Functional digital tools are provided.	1.75	0.70	Disagree
4	Digital tools are accessible during teaching.	1.65	0.69	Disagree
5	Schools are equipped for digital learning.	1.72	0.66	Disagree
Grand Mean		1.68	0.68	Disagree

The result in Table 3 shows that digital tools are largely not available in the primary schools studied. This shows that many teachers do not have regular access to the basic resources needed for digital pedagogy, such as computers, projectors, internet facilities, and other functional digital devices. The poor availability of these tools may limit teachers' opportunity to practice digital teaching and develop confidence in using technology during lessons as reflected by the grand mean of 1.68 and standard deviation of 0.68. Since the grand mean is far below the benchmark of 2.50, it indicates that most schools lack the facilities needed for digital pedagogy. Teachers generally disagreed that digital devices, internet facilities, and functional digital tools were available in their schools. This means that many teachers do not even have access to the tools required for digital teaching. The low standard deviation also shows that teachers shared similar opinions regarding the lack of digital resources. This finding also explains why teachers' readiness and digital competence were not very high in the earlier results. Even when teachers are willing to adopt digital teaching methods, lack of access to digital tools can discourage them and make digital pedagogy difficult to implement. Therefore, the low availability of digital resources is a major barrier to effective digital teaching in primary schools in Nsukka Local Government Area.

Research Question Four: What challenges affect teachers' readiness for digital pedagogy?

Table 4: Mean and Standard Deviation Scores of Challenges Affecting Teachers' Readiness

S/N	Items	Mean	SD	Decision
1	Lack of training affects teachers' readiness.	3.15	0.64	Agree
2	Poor electricity supply is a challenge.	3.25	0.60	Agree
3	Lack of internet access affects teachers' readiness.	3.20	0.63	Agree
4	Overcrowded classrooms affect digital teaching.	3.08	0.71	Agree
5	Lack of technical support is a challenge.	3.12	0.66	Agree
Grand Mean		3.16	0.65	Agree

The result in Table 4.4 revealed that teachers face serious challenges affecting their readiness for digital pedagogy, as indicated by the grand mean of 3.16 and standard

deviation of 0.65. The high grand mean shows that teachers strongly agreed that these challenges significantly affect their ability to use digital technology in teaching. Teachers identified lack of training, poor electricity supply, limited internet access, overcrowded classrooms, and lack of technical support as major problems. These challenges make it difficult for teachers to develop confidence and effectively apply digital teaching methods. The standard deviation of 0.65 indicates that teachers' responses were closely related, meaning that most teachers experienced similar difficulties. This finding shows that the environment in many schools is not supportive of digital pedagogy, thereby reducing teachers' readiness and limiting effective digital teaching.

Hypothesis:

Table 5: t-test Analysis of Gender Difference in Teachers' Readiness for Digital Pedagogy

Gender	N	Mean	SD	t-value	p-value	Decision
Male	21	2.54	0.80			
Female	359	2.56	0.77	0.19	0.85	Not Significant

The result in Table 5 shows that male teachers had a mean score of 2.54 with a standard deviation of 0.80, while female teachers had a mean score of 2.56 with a standard deviation of 0.77. The p-value of 0.85 is greater than the 0.05 level of significance. This means that there is no significant difference between male and female teachers' readiness for digital pedagogy. Both groups shared similar views and experiences regarding their readiness for digital teaching. The close mean scores and standard deviations further show that both male and female teachers are affected by similar challenges such as lack of digital tools, inadequate training, and poor infrastructure.

Discussion of Findings

The findings of this study revealed that teachers in Nsukka Local Government Area have a moderate level of readiness for digital pedagogy. This suggests that teachers possess some basic knowledge and show willingness to adopt digital teaching methods, but they are not fully prepared to effectively integrate digital tools into classroom instruction. This finding agrees with the Organisation for Economic Co-operation and Development (2021), which emphasized that teachers' readiness involves not only basic skills but also confidence and the ability to apply digital tools in teaching. Similarly, the United Nations Educational, Scientific and Cultural Organization (2023) noted that effective digital pedagogy depends on teachers' competence and confidence. This implies that although teachers are somewhat prepared, their readiness is still insufficient for effective digital teaching.

The study further revealed that teachers have low digital competence, they are able to use basic digital tools such as Microsoft applications and the internet, they lack advanced skills such as creating digital instructional materials and solving technical problems. This finding supports Uche and Nwosu (2020), who reported that many teachers in Nigeria have limited digital competence, which affects their ability to use technology effectively in teaching. This suggests that teachers' skills are still at a basic level and need to be improved for effective implementation of digital pedagogy. In addition, the study showed that digital tools are largely not available in primary schools. This indicates that teachers do not have access to the necessary digital resources required for digital pedagogy. This finding is consistent with the World Bank (2023), which reported that lack of infrastructure is a major barrier to digital education in many developing countries. The

United Nations Children's Fund (2022) also highlighted that poor school facilities limit the integration of digital technologies in classrooms. This shows that availability of resources is a key factor influencing teachers' readiness.

The study also identified several challenges affecting teachers' readiness. Teachers agreed that lack of training, poor electricity supply, lack of internet access, overcrowded classrooms, and lack of technical support are major barriers. This finding aligns with Ogunyemi (2022), who noted that lack of training and poor infrastructure reduce teachers' ability to use digital technologies. It also supports the findings of Uche and Nwosu (2020), which showed that inadequate support systems hinder the effective use of digital tools. These challenges create an environment that is not conducive for digital pedagogy, thereby reducing teachers' readiness. Furthermore, the study revealed that there is no significant difference between male and female teachers' readiness for digital pedagogy. This indicates that both male and female teachers have similar levels of readiness and face similar challenges. This finding agrees with the United Nations Educational, Scientific and Cultural Organization (2022), which reported that gender differences in digital technology use can be minimized when equal opportunities are provided. This suggests that gender is not a major factor influencing teachers' readiness in this context. Generally, the findings of this study show that although teachers have a basic level of readiness and a positive disposition towards digital pedagogy, their ability to effectively implement it is limited by low digital competence, lack of access to digital tools, and several environmental challenges. This highlights the need for improved training, better infrastructure, and increased support to enhance teachers' readiness for digital pedagogy in primary school classrooms.

Conclusion

This study examined teachers' readiness for digital pedagogy in primary schools in Nsukka Local Government Area of Enugu State. The findings revealed that teachers have a moderate level of readiness, as they possess basic digital skills and show willingness to adopt digital teaching methods. However, this readiness is not sufficient for effective implementation of digital pedagogy in classroom practice. The study further showed that teachers have low digital competence, especially in advanced digital skills required for effective teaching. In addition, digital tools are largely not available in schools, which limit teachers' opportunity to practice and apply digital teaching methods. Several challenges such as lack of training, poor electricity supply, limited internet access, overcrowded classrooms, and lack of technical support were also identified as major factors affecting teachers' readiness. It was also found that there is no significant difference between male and female teachers' readiness, indicating that both groups are equally affected by the same conditions. Based on these findings, it can be concluded that although teachers show some level of preparedness, their readiness for digital pedagogy is constrained by lack of resources, inadequate training, and poor learning environments.

Recommendations

Based on the findings of the study, the following recommendations were made

1. Government, particularly the Federal Republic of Nigeria, should ensure the provision of digital tools and facilities in primary schools to support digital pedagogy.
2. Regular training programs, workshops, and seminars should be organized to improve teachers' digital skills and competence.
3. Schools should be provided with stable electricity supply and reliable internet access to support the use of digital tools.

4. Adequate technical support personnel should be made available to assist teachers in handling digital equipment.
5. Government should improve school infrastructure and classroom conditions, including reducing overcrowding.

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