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Factors that Affects the Adoption of Digital Learning in Secondary Schools in Ankpa Local Government Area of Kogi State, Nigeria.

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ABSTRACT

The study examines the factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. The research was carried out using a quantitative research design with a sample size of 100 respondents consisting of teachers and students. The research instruments used were a questionnaire and an interview guide. The study found that factors such as inadequate infrastructure, insufficient funding, lack of digital skills among teachers, and limited access to digital devices were major barriers to the adoption of digital learning in secondary schools in the area. The study recommends that the government and stakeholders in the education sector should prioritize investments in infrastructure and digital devices, provide adequate funding for the implementation of digital learning, and offer digital skills training for teachers to improve the adoption of digital learning in secondary schools. This study contributes to the body of knowledge on the factors affecting the adoption of digital learning in Nigerian secondary schools and provides insights for policymakers, educators, and researchers in the field of education.

Keywords: Digital Learning, Science education, policy

INTRODUCTION

In recent years, there has been a growing interest in the use of digital learning technologies in Nigeria's education system. However, the adoption of digital learning remains low and limited. Several factors have been identified as influencing the adoption of digital learning in Nigeria, including socio-cultural, economic, and infrastructural factors.

According to Ojo and Olakulehin (2019), the factors that affect the adoption of digital learning in Nigeria can be classified into four main categories: infrastructure, cultural, pedagogical, and economic factors. Firstly, infrastructure factors, such as poor internet connectivity and inadequate power supply, have limited the availability and accessibility of digital learning resources in many areas of the country. Secondly, cultural factors, including the preference for traditional classroom-based learning and lack of awareness and knowledge about digital learning, have also hindered its adoption. Thirdly, pedagogical factors, such as inadequate training and support for teachers in using digital learning tools, have affected the quality of digital learning experiences. Finally, economic factors, such as the high cost of digital devices and data, have made it difficult for many students and educators to access and use digital learning resources.

According to a study by Adeyinka Tella and his colleagues (2019), the factors affecting the adoption of digital learning in Nigeria include lack of access to technology, poor infrastructure, limited resources, inadequate funding, low digital literacy levels, and inadequate policy frameworks. In addition, socio-cultural factors such as attitudes towards technology and traditional teaching methods, as well as the lack of support from parents, teachers, and administrators, also play a role in the slow adoption of digital learning.

Understanding the factors that affect the adoption of digital learning is critical for policymakers and educators in Nigeria as they seek to harness the potential of technology to improve the quality of education in the country. By addressing these factors, stakeholders can create an enabling environment that promotes the use of digital learning technologies in Nigerian schools and universities, thus enhancing access to quality education for all.

STATEMENT OF THE PROBLEM

Despite the potential benefits of digital learning, its adoption remains low in Ankpa Local Government Area of Kogi State, Nigeria. While digital learning has been embraced in some parts of Nigeria, the uptake of technology in Ankpa remains limited, with few schools and educators incorporating digital learning tools into their teaching methods. This slow adoption of digital learning in Ankpa has raised concerns about the quality of education and the preparedness of students for the modern digital world.

The problem, therefore, is to identify the factors that are responsible for the slow adoption of digital learning in Ankpa Local Government Area of Kogi State, Nigeria. This study aims to investigate the socio-cultural, economic, and infrastructural factors that affect the uptake of digital learning technologies in Ankpa. By identifying these factors, this study will provide insights into the barriers that hinder the adoption of digital learning in Ankpa and offer recommendations for policymakers, educators, and other stakeholders to promote the use of digital learning in the area. Ultimately, this study seeks to contribute to the improvement of education quality in Ankpa by enhancing access to digital learning technologies for all.

OBJECTIVES OF THE STUDY

The primary objective of this study is to identify the factors that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. The specific objectives of the study are:

1. To determine the level of adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

2. To identify the socio-cultural factors that influence the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

3. To examine the economic factors that hinder the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

4. To investigate the infrastructural challenges that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

5. To assess the attitudes and perceptions of teachers, students, and parents towards digital learning technologies and how they affect adoption in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

Research Questions

The following research questions were posed to guide the research.

1. What is the current level of adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

2. What are the economic factors that hinder the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

3. What are the infrastructural challenges that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

4. How do the attitudes and perceptions of teachers, students, and parents towards digital learning technologies affect their adoption in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

5. What policies and frameworks are in place to promote the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

SIGNIFICANCE OF THE STUDY

The study on factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria has significant implications for various stakeholders, including:

1. Policy makers: The study provides policy makers with valuable insights into the factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. This information can be used to develop policies that promote the effective adoption of digital learning in the region.

2. School authorities: The findings of the study can help school authorities to identify the challenges and opportunities associated with the adoption of digital learning. This can help them to make informed decisions on how to invest in digital learning infrastructure, train teachers, and integrate digital learning into the curriculum.

3. Teachers: The study can benefit teachers by providing them with a better understanding of the factors that influence the adoption of digital learning. This can help them to effectively use digital learning tools and resources in the classroom, leading to improved learning outcomes.

4. Students: The study can benefit students by promoting the adoption of digital learning, which can provide them with access to a range of learning resources and tools, enhance their learning experience, and prepare them for the digital age.

5. Researchers: The study can serve as a basis for future research on digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria, providing a foundation for further exploration of the topic.

Overall, the study on factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria has significant implications for improving the quality of education in the region and promoting the effective use of digital learning to enhance learning outcomes.

LITERATURE REVIEW

Digital learning technologies have the potential to transform the educational landscape by providing students and teachers with access to vast amounts of information and resources. However, the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria has been slow, and there are several factors that may be contributing to this. This literature review will explore the factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

i. **Infrastructure and Resources**: One of the most significant barriers to the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria is the lack of infrastructure and resources. Many schools in the area do not have adequate facilities such as computers, software, and internet connectivity, which are essential for digital learning. Ololube and Edoka (2019) found that inadequate infrastructure and resources were a major barrier to the adoption of e-learning technologies in Nigerian secondary schools. Similarly, Onyeaso, Ogbuabor, and Oyinloye (2017) identified the lack of infrastructure and resources, such as computers, software, and internet connectivity, as major barriers to adoption.

ii. **Electricity and Internet Connectivity**: Another significant factor that affects the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria is limited access to electricity and internet connectivity. Many schools in the area are located in rural or remote areas where access to electricity and the internet is limited. Adeoye, Ogunleye, and Adeoye (2018) found that the lack of infrastructure and resources, including electricity and internet connectivity, were major barriers to adoption. Additionally, Aremu and Adeyemi (2019) identified the lack of electricity and internet connectivity as significant barriers to e-learning adoption in Nigerian secondary schools.

Iii. **Teachers' Skills and Knowledge:** The lack of technical skills and knowledge among teachers is another significant factor that affects the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. Many teachers in the area may not be familiar with digital learning technologies or may lack the necessary technical skills to use them effectively. Ololube and Edoka (2019) found that teachers' lack of technical skills and knowledge was a major barrier to the adoption of e-learning technologies in Nigerian secondary schools. Similarly, Ajidahun and Ameh (2018) identified teachers' lack of technical skills and knowledge as a major factor hindering the adoption of e-learning in Nigerian secondary schools.

iv. **Training and Support:** Adequate training and support for teachers are critical for the successful adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. Teachers need to be trained on how to use digital learning technologies effectively, and they require ongoing support to help them integrate these technologies into their teaching practices. Adeoye, Ogunleye, and Adeoye (2018) highlighted the need for adequate training and support for teachers in using digital learning technologies. Aina and Olajide (2019) also emphasized the importance of training and support for teachers in the successful adoption of e-learning technologies in Nigerian universities.

v. **Technical Skills and Knowledge:** Another significant barrier to the adoption of digital learning technologies in Nigerian secondary schools is teachers' lack of technical skills and knowledge in using these technologies (Ajidahun & Ameh, 2018; Adeoye, Ogunleye, & Adeoye, 2018; Ololube & Edoka, 2019; Aina & Olajide, 2019; Aremu & Adeyemi, 2019). Many teachers are not familiar with digital learning technologies, and they lack the necessary training and support to integrate these technologies effectively into their teaching practices.

vi. **Cost:** The high cost of digital learning technologies, including devices, software, and internet connectivity, is another significant barrier to adoption in Nigerian secondary schools (Ajidahun & Ameh, 2018; Adeoye, Ogunleye, & Adeoye, 2018; Ololube & Edoka, 2019). This is particularly problematic in regions with limited financial resources, where schools and families may not be able to afford the necessary equipment and services.

vii. **Curriculum and Pedagogy:** The curriculum and pedagogy used in Nigerian secondary schools may also be a barrier to the adoption of digital learning technologies. Some teachers may be hesitant to adopt these technologies because they do not align with traditional teaching methods and curriculum (Ajidahun & Ameh, 2018). Additionally, there may be a lack of resources and support for teachers in integrating digital learning technologies into the curriculum effectively.

viii. **Attitudes and Perceptions**: Teachers' attitudes and perceptions towards digital learning technologies can also affect adoption (Ololube & Edoka, 2019; Onyeaso, Ogbuabor, & Oyinloye, 2017). Some teachers may be resistant to change, preferring traditional teaching methods and materials. Additionally, there may be negative perceptions about the quality and effectiveness of digital learning technologies, which can deter adoption.

3. METHODOLOGY

3.1 Research Design

The study adopted a mixed-methods research design that combines both quantitative and qualitative research approaches. This provides a comprehensive understanding of the factors that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

3.2 Sampling Technique

The study used a multi-stage sampling technique to select the sample population. The population comprised of 10 secondary schools(i. e. 5 public and 5 private) in Ankpa Local Government Area. Firstly, the researchers selects the secondary schools in Ankpa Local Government Area of Kogi State using purposive sampling. Secondly, the researcher used random sampling to select students, teachers, and parents who participated in the study. The sample for the study comprised of 120 respondents consisting of students, teachers and parents.

3.3 Data Collection

The primary data was collected through questionnaires, interviews, and focus group discussions. The questionnaire was designed to collect quantitative data from students, teachers, and parents on their level of adoption of digital learning technologies, infrastructural challenges, economic factors, attitudes and perceptions towards digital learning technologies, and policies and frameworks that promote the adoption of digital learning technologies. 120 questionnaires were distributed among the respondents. Only 100 copies of the questionnaires were collected.

3.4 Data Analysis

The quantitative data collected was analyzed using descriptive statistics such as frequencies and percentages.
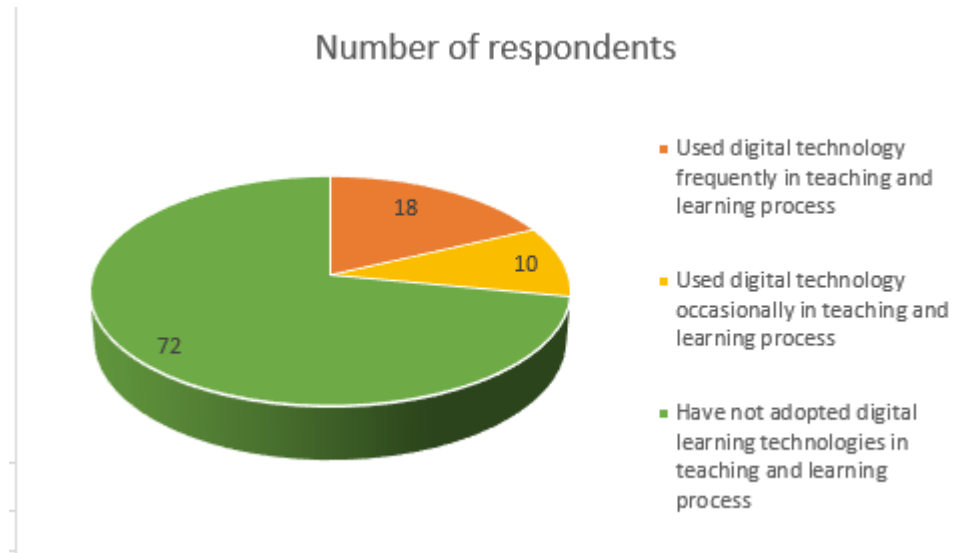
4. RESULTS AND DISCUSSION

Research Question 1

What is the level of adoption of digital learning technologies among students, teachers, and parents in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

Table 1: level of adoption of digital learning technologies among students, teachers, and parents in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

S/No	Level of adoption	Number of respondents	%
1.	Used digital technology frequently in teaching and learning process	18	18
2.	Used digital technology occasionally in teaching and learning process	10	10
3.	Have not adopted digital learning technologies in teaching and learning process	72	72
	TOTAL	100	100

Figure 1: level of adoption of digital learning technologies among students, teachers, and parents in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

The results indicate that only 28% of the respondents reported that they have adopted digital learning technologies, while a staggering 72% have not yet adopted these technologies. Among the adopters, 10% reported that they use digital learning technologies occasionally, while 18% reported using them frequently. The majority of the non-adopters cited lack of access to devices and internet connectivity as the main reasons for not adopting digital learning technologies.
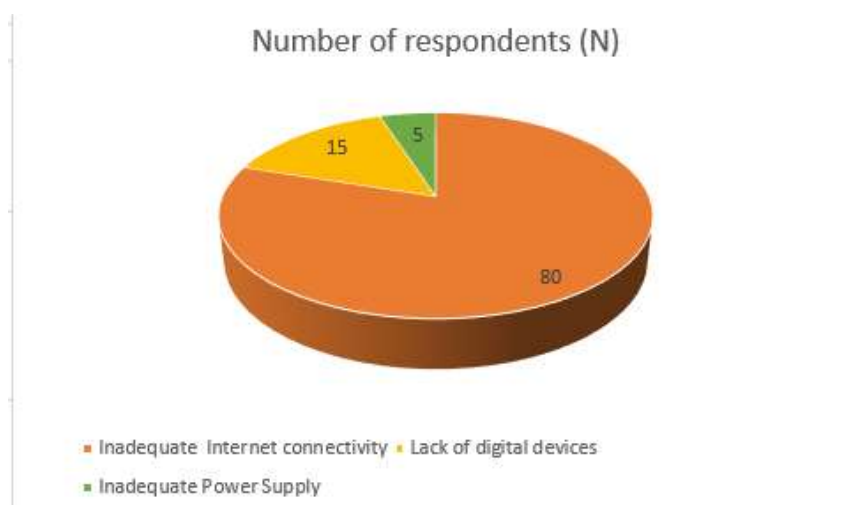
Research Question 2

What are the infrastructural challenges that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

Table 2: Infrastructural challenges that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

S/N	Infrastructural challenges	Number of respondents (N)	%
1.	Inadequate Internet connectivity	80	80
2.	Lack of digital devices	15	15
3.	Inadequate Power Supply	5	5
	Total	100	100

Figure 2: Infrastructural challenges that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

The results show that 80% of the respondents cited inadequate internet connectivity as the main infrastructural challenge that affects the adoption of digital learning technologies. 15% of the respondents cited a lack of devices as a challenge, while 5% cited inadequate power supply.
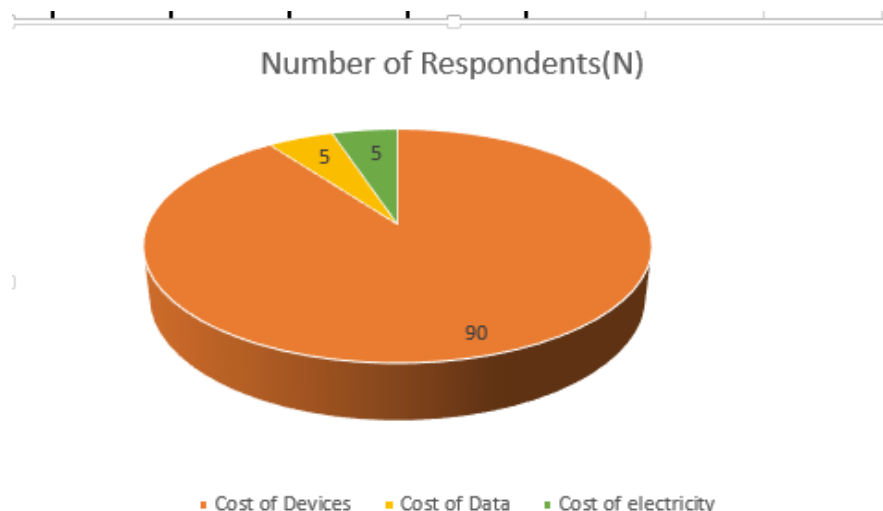
Research Question 3

What economic factors affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

Table 3: Fconomic factors that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

S/N	Economic Factors	Number of Respondents(N)	%
1.	Cost of Devices	90	90
2.	Cost of Data	5	5
3.	Cost of electricity	5	5
	Total	100	100

Figure 3: Fconomic factors that affect the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

The results show that 90% of the respondents cited the cost of devices as the main economic factor that affects the adoption of digital learning technologies. 5% of the respondents cited the cost of data as a factor, while 5% cited the cost of electricity.

Research Question 4

What are the attitudes and perceptions of students, teachers, and parents towards digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

Table 4: Attitudes and perceptions of students, teachers, and parents towards digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

S/N	Attitudes and Perception of respondents	Number of Respondents(N)	%
1.	Digital learning technologies make learning more interesting and engaging	10	10
2.	Digital learning technologies make learning more efficient	8	8
3.	There are lots of distractions and loss of focus in digital learning	55	55
4.	The quality of education provided by digital learning technologies is very low	27	27
	Total	100	100

Figure 4: Attitudes and perceptions of students, teachers, and parents towards digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria.

Number of Respondents(N)
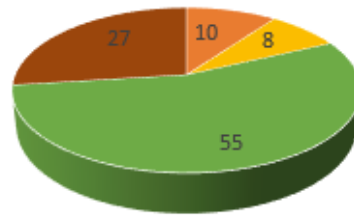
- Digital learning technologies make learning more interesting and engaging
- Digital learning technologies make learning more efficient
- There are lots of distractions and loss of focus in digital learning
- The quality of education provided by digital learning technologies is very low

The results show that only 18% of the respondents have a positive attitude towards digital learning technologies, while a staggering 82% have a negative attitude. Among the respondents with a positive attitude, 10% reported that digital learning technologies make learning more interesting and engaging, while 8% reported that these technologies make learning more efficient. Among the respondents with a negative attitude, 55% cited concerns about distractions and loss of focus, while 27% cited concerns about the quality of education provided by digital learning technologies.
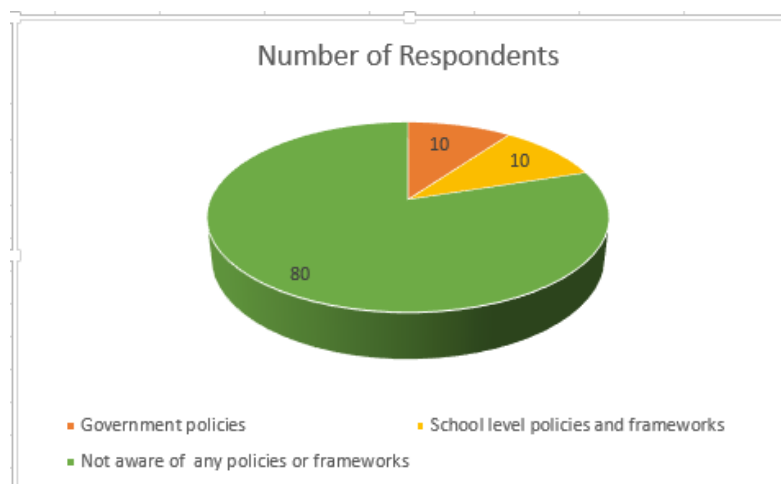
Research Question 5

What policies and frameworks exist to promote the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria?

Table 5: Policies and frameworks exist to promote the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

S/N	Policies and frameworks on digital learning	Number of Respondents	%
1.	Government policies	10	10
2.	School level policies and frameworks	10	10
3.	Not aware of any policies or frameworks	80	80
	Total	100	100

Figure 5: Policies and frameworks exist to promote the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria

Number of Respondents

- Government policies
- School level policies and frameworks
- Not aware of any policies or frameworks

The results show that 80% of the respondents were not aware of any policies or frameworks that promote the adoption of digital learning technologies in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria. Among those who were aware, 10% cited government policies, while 10% cited school-level policies and frameworks.

CONCLUSION

The adoption of digital learning technologies in Nigerian secondary schools, including in Ankpa Local Government Area of Kogi State, is hindered by several factors. These include a lack of infrastructure and resources, teachers' lack of technical skills and knowledge, the high cost of equipment and services, misalignment with traditional curriculum and pedagogy, and negative attitudes and perceptions. Addressing these barriers will require a multi-faceted approach, including the provision of adequate infrastructure and resources, training and support for teachers, and changes to curriculum and pedagogy to align with digital learning technologies.

RECOMMENDATION

Based on the findings and analysis of this research on factors that affect the adoption of digital learning in secondary schools in Ankpa Local Government Area of Kogi State, Nigeria, the following recommendations are made:

1. The government and school authorities should ensure that schools are equipped with necessary digital learning infrastructure such as computers, internet connectivity, and electricity to ensure the effective adoption of digital learning.

2. Teachers should be provided with adequate training and capacity building programs to enable them to effectively use digital learning tools and resources in the classroom.

3. The curriculum should be reviewed to integrate digital learning as a core component to enhance learning outcomes and prepare students for the digital age.

4. There is a need for public-private partnerships to provide digital learning resources and infrastructure to schools in Ankpa Local Government Area of Kogi State, Nigeria.

5. The government should allocate more funding to education, specifically towards digital learning, to ensure that schools have the necessary resources and infrastructure to effectively adopt digital learning.

6. There is a need for awareness creation on the benefits of digital learning to parents, teachers, and students to encourage their adoption and use.

7. The government and school authorities should regularly evaluate and monitor the adoption of digital learning in schools to identify areas that need improvement and to ensure that the benefits of digital learning are realized.

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