

ICT ACCESS FOR TEACHING AND LEARNING IN PRIMARY SCHOOLS IN ADAMAWA STATE

¹Suleiman Yusuf Aliyu, ²Umar Mahmud Abubakar, ³Ibrahim Bobboi,
⁴Lami Abba, ⁵Yahaya Umar Magaji

¹Social Studies Federal College of Education, Yola

^{2,5}Psychology Department, Federal College of Education, Yola

³Geography Department Federal College of Education, Yola

⁴PED Department Federal College of Education, Yola

Email: ysaliyu@fceyola.edu.ng

ABSTRACT

This study aimed to assess the level of access to ICT facilities for the teaching and learning in primary schools in Adamawa State, Nigeria. The study specifically sought to determine the availability of ICT tools, the level of teacher preparedness, and the extent of pupil involvement in ICT-based English lessons. A descriptive survey design was used to collect data from 78 teachers and 369 pupils across 10 randomly selected local government areas. Data was gathered through a structured questionnaire, and the results were analyzed using frequency distributions and mean scores. The findings revealed a low level of access to ICT facilities in the schools. Only 35% of schools reported having functional computers for teaching, and 28% of teachers had received training on the use of ICT tools. Less than 20% of schools had internet access, and 22% of pupils had regular exposure to ICT tools during lessons. The mean score for ICT access among teachers was 1.35, indicating limited use and training in ICT integration for teaching. In contrast, the pupils' mean score was 1.22, showing even lower involvement in ICT-enhanced learning. The study concluded that despite the potential benefits of ICT for teaching, there are significant barriers to its effective integration, including inadequate infrastructure and insufficient teacher training. A key recommendation is for the government to increase investment in ICT infrastructure and training programs for both teachers and pupils, particularly in rural and underserved areas, to enhance the quality education through technology.

Keywords: *ICT Access, Teaching, Primary Schools, Teacher Training and Adamawa State*

INTRODUCTION

The integration of Information and Communication Technology (ICT) in education has transformed teaching and learning processes globally. ICT tools have been recognized as essential for improving the quality of education, especially in subjects like, which require innovative teaching methodologies to enhance language skills, including reading, writing, listening, and speaking. In primary schools, the use of ICT facilitates interactive learning and supports both pupils and teachers in achieving better outcomes (Adewale et al., 2022). Access to ICT facilities, however, remains a critical challenge in many Nigerian schools, including those in Adamawa State. Studies indicate that ICT access in schools varies significantly, often influenced by factors such as funding, teacher training, infrastructure, and government policies (Aminu, 2023). For effective teaching and learning, it is essential that teachers are equipped with functional ICT tools, such as computers, projectors, and internet access, alongside proper training on their usage (Bello & Musa, 2021). Similarly, pupils require access to user-friendly ICT devices to engage with digital learning resources.

In Adamawa State, the implementation of ICT in primary schools has been hindered by inadequate infrastructure, limited funding, and a lack of trained personnel. A study by Yusuf and Haruna (2022) revealed that only 25% of primary schools in the state have basic ICT facilities, and even fewer have trained teachers to utilize these tools effectively. This scenario limits the potential for ICT-driven innovations in teaching, further widening the gap in educational quality between urban and rural areas. Despite these challenges, initiatives have been introduced to bridge the ICT gap in schools. Government programs like the Universal Basic Education Commission (UBEC) have aimed to equip schools with computers and other digital tools, but the impact of these efforts has been limited due to poor implementation and lack of sustainability (Garba et al., 2021). Addressing these gaps requires collaborative efforts from stakeholders to improve access, infrastructure, and training to ensure the effective use of ICT in teaching in primary schools.

STATEMENT OF THE PROBLEM

The teaching and learning in Nigerian primary schools face significant challenges, particularly in integrating Information and Communication Technology (ICT). In Adamawa State, the lack of access to ICT facilities by both pupils and teachers has been identified as a major impediment to

improving language education. While ICT has the potential to enhance the delivery instruction by enabling interactive learning and access to digital resources, the reality on the ground is far from this ideal.

Research shows that most primary schools in Adamawa State lack the basic ICT infrastructure required for modern teaching practices. According to Yusuf and Haruna (2022), over 70% of schools in the state do not have functional computers or internet facilities, and a significant percentage of teachers lack the training needed to integrate ICT into their teaching methods. Furthermore, rural schools are disproportionately affected, with many relying solely on traditional teaching methods that fail to engage pupils effectively. This disparity exacerbates educational inequalities and hinders the development of essential skills among primary school pupils (Garba et al., 2021). The gap in access to ICT tools is further compounded by inadequate government support and poorly implemented policies aimed at improving digital literacy in schools. While programs like the Universal Basic Education Commission (UBEC) have introduced measures to address this issue, their impact has been limited due to insufficient funding and lack of monitoring (Aminu, 2023). Without access to ICT facilities, both teachers and pupils in Adamawa State are unable to leverage the benefits of technology to enhance teaching and learning outcomes in education. This situation necessitates urgent attention to improve ICT access and training in primary schools. Addressing this problem is critical to ensuring that teachers can deliver quality instruction and pupils can acquire the language skills needed to succeed academically and socially in a digitalized world.

LITERATURE REVIEW

Aminu (2023) conducted a study titled Challenges of ICT Integration in Nigerian Schools. The research focused on primary schools in Adamawa State and employed a mixed-methods approach, combining surveys and interviews with teachers and school administrators. The study revealed that over 70% of primary schools lacked basic ICT infrastructure such as computers, projectors, and internet access. In addition, most teachers were not adequately trained to utilize ICT tools in their teaching. Aminu recommended that the government and private sector collaborate to provide schools with ICT facilities and organize regular training programs for teachers to enhance their digital competence. Garba, Bala, and Yusuf (2021) examined the Impact of Government Interventions on ICT Access in Public Schools in Abuja: The Adamawa Experience. Their study

surveyed 50 public primary schools across urban and rural areas in Abuja metropolis. The researchers utilized questionnaires and focus group discussions to gather data. The results showed that government interventions, such as the provision of computers through the Universal Basic Education Commission (UBEC), were insufficient and poorly implemented, with less than 30% of schools benefiting from the programs. The study recommended increased funding, monitoring, and equitable distribution of ICT resources to ensure wider access in underserved areas.

Yusuf and Haruna (2022) explored ICT Access and Educational Inequality in Rural and Urban Schools in Hong local government, Nigeria. Using a comparative analysis approach, they collected data from 20 schools 10 rural areas and 10 urban areas through observation and interviews with teachers and pupils. The findings indicated that urban schools had better ICT access, with about 50% equipped with basic tools, compared to less than 10% in rural schools. The researchers recommended that policymakers prioritize rural areas in ICT resource allocation to bridge the educational gap.

Bello and Musa (2021) conducted a study titled Teacher Preparedness and the Use of ICT in Primary Schools in Yola education zone. The study employed a descriptive survey design and collected data through structured questionnaires administered to 200 teachers in the study area. The findings revealed that only 20% of the teachers had received formal ICT training, and most relied on traditional teaching methods due to limited ICT access. The authors recommended integrating ICT training into teacher education programs and providing in-service training to equip teachers with the necessary skills.

Adewale, Adeoye, and Olufemi (2022) examined The Role of ICT in Enhancing Language Education in Nigerian Primary Schools in Edo state. The study focused on urban primary schools in Southwestern Nigeria using a case study methodology that involved classroom observations and teacher interviews. The findings revealed that ICT use improved pupils' engagement and comprehension in lessons, with tools such as digital storytelling and language apps proving particularly effective. However, the researchers noted that the high cost of ICT tools limited their adoption. They recommended government subsidies and partnerships with NGOs to make ICT facilities more accessible to schools.

Garba and Aliyu (2021) studied *ICT Literacy and Its Impact on Teaching in Gombi education zone in Adamawa State Primary Schools*. The research employed a cross-sectional survey of 120 teachers in the state, collecting data through structured questionnaires. The results indicated that only 15% of teachers were proficient in using ICT for teaching English, and the lack of infrastructure further hindered ICT integration. The authors recommended organizing targeted training workshops for teachers and providing incentives to schools that actively adopt ICT in teaching practices.

Abubakar and Hassan (2023) explored *The Effectiveness of ICT Tools in Enhancing Literacy Skills in Rural Nigerian Schools*. The study focused on rural primary schools in Adamawa and Gombe States using a quasi-experimental design. They compared literacy performance in ICT-equipped classrooms to traditional classrooms over six months. The results showed a 35% improvement in reading and writing skills among pupils exposed to ICT tools compared to their peers. The researchers recommended scaling up ICT access in rural schools and integrating it into the national curriculum to improve literacy outcomes.

METHODOLOGY

The study adopted a descriptive survey design to investigate the level of access to ICT facilities for the teaching and learning in primary schools in Adamawa State. This design was chosen because it allows for the collection of data from a representative sample to describe the current situation and make inferences about the population. The study utilized primary data, which was collected directly from the respondent's teachers and pupils through a structured questionnaire. The target population for the study comprised teachers and pupils in primary schools across Adamawa State. This included 78 teachers and 369 pupils who were actively involved in teaching and learning. The population size consisted of 78 teachers and 369 pupils, making a total of 447 participants.

The sampling process followed a systematic approach to ensure a representative selection. First, Adamawa State was divided into its constituent local government areas to allow for equitable representation. Next, 10 local governments were randomly selected from the state for the study. Within each of the selected local governments, five primary schools were chosen randomly. Finally, 37 pupils were randomly selected from each of the chosen primary schools to participate in the study, ensuring a

diverse sample of participants. A structured questionnaire was used as the primary instrument for data collection. The questionnaire was designed to gather information on the availability and utilization of ICT facilities by teachers and pupils in teaching and learning.

The data was collected through the administration of the questionnaire to teachers and pupils using a survey method. The researcher and trained assistants visited the schools to distribute and retrieve the completed questionnaires. The data collected was analyzed using frequency distribution and mean scores to summarize the responses and interpret the level of ICT access among teachers and pupils. These statistical tools were employed to provide a clear understanding of the trends and patterns in the data.

Result and Discussion

S/N	Related Statement	Yes (%)	No (%)	Mean
1	The school has functional computers for teaching .	35	65	1.35
2	Teachers are trained to use ICT tools in teaching .	28	72	1.28
3	Pupils have access to ICT facilities during lessons.	22	78	1.22
4	The school has internet facilities accessible to teachers and pupils.	18	82	1.18
5	Teachers use projectors or other audiovisual tools during lessons.	25	75	1.25
6	ICT facilities are regularly maintained in the school.	30	70	1.30
7	Pupils can operate basic ICT tools such as computers and tablets.	33	67	1.33
8	ICT facilities are incorporated into the curriculum.	40	60	1.40
9	Teachers prepare lesson notes with the help of ICT tools.	45	55	1.45
10	The school management supports the acquisition of ICT tools for teaching and learning.	38	62	1.38
11	Pupils learn better with the use of ICT in lessons.	50	50	1.50
12	The use of ICT in teaching has improved pupils' understanding of the subject.	47	53	1.47
13	Teachers receive regular training on integrating ICT into their teaching practices.	30	70	1.30
14	The school has designated ICT teachers to support teaching.	27	73	1.27
15	Pupils actively engage with ICT tools during lessons.	32	68	1.32
16	The school library has e-books or digital resources for learning.	29	71	1.29
17	Parents provide ICT tools at home to support their children's learning.	35	65	1.35
18	The government provides ICT funding and support to the school.	20	80	1.20
19	Pupils are tested on ICT skills related to learning.	25	75	1.25
20	ICT use in teaching reduces teachers' workload.	42	58	1.42

DISCUSSION OF THE RESULT

The results from the survey show that while ICT access in primary schools in Adamawa State has improved in some areas, significant gaps remain in providing adequate facilities and training for both teachers and pupils. The data indicates that only a small proportion of schools have functional ICT tools such as computers, projectors, and internet access, which are essential for enhancing teaching and learning. For instance, 65% of respondents reported that their schools lacked functional computers for teaching English, and 82% stated that there was no internet access. These results suggest that ICT integration in teaching is still in its infancy and faces numerous challenges, including infrastructural inadequacies and insufficient funding.

The study also revealed that while 50% of pupils reported that ICT facilities helped improve their understanding lessons, only 30% of teachers received training on integrating ICT into their teaching. These findings are consistent with previous studies, such as Garba and Aliyu (2021), which highlighted that the lack of adequate teacher training and support for ICT integration remains a major barrier to the effective use of ICT in schools. In addition, Adewale et al. (2022) found that inadequate training and lack of technical support hinder the proper utilization of ICT tools by teachers, thus limiting their effectiveness in enhancing pupils' learning outcomes.

Moreover, the mean scores for several related statements, such as the presence of ICT tools in the curriculum and the use of ICT to prepare lesson notes, suggest that teachers are aware of the potential of ICT but are often hindered by a lack of resources and support. The significant disparity between urban and rural schools in ICT access, as noted in Yusuf and Haruna (2022), is reflected in the findings of this study. Urban schools in Adamawa State likely have better access to ICT resources than rural schools, which further exacerbates educational inequalities.

The study also aligns with Abubakar and Hassan (2023), who found that rural schools had limited access to ICT tools, resulting in lower literacy outcomes compared to their urban counterparts. The fact that 75% of pupils reported limited interaction with ICT during their lessons reflects the broader issue of unequal access to resources in different geographic areas. This study reinforces the need for targeted interventions to bridge the digital divide between rural and urban schools.

Implications of the Result

The findings of this study have important implications for policy and practice. The lack of ICT infrastructure, coupled with insufficient teacher training, suggests that efforts to integrate ICT into primary school education in Adamawa State need to be more robust and comprehensive. Policymakers should prioritize increasing the availability of ICT tools in schools and ensure that schools in rural areas are not left behind in terms of access. This could involve providing government subsidies for ICT equipment, improving internet access, and offering more support for school-based ICT programs.

In addition, the study emphasizes the need for continuous professional development for teachers. In-service ICT training should be made mandatory to equip teachers with the skills necessary to effectively use digital tools in their lessons. This is in line with the recommendations from Bello and Musa (2021), who suggested integrating ICT training into teacher education programs and offering more professional development opportunities to ensure that teachers are capable of using ICT to enhance learning outcomes.

Finally, the role of ICT in improving learning outcomes, particularly in literacy skills, should not be underestimated. Given that 50% of pupils reported that ICT use improved their understanding of English, it is crucial for education authorities to scale up ICT integration in the curriculum and explore creative ways to involve pupils in digital learning. This could include incorporating more e-learning resources, digital textbooks, and interactive platforms into the teaching and learning process.

CONCLUSION

This study aimed to assess the level of access to ICT facilities for teaching and learning in primary schools in Adamawa State. The findings revealed that while there is some awareness of the importance of ICT in enhancing teaching, there are significant gaps in terms of availability, accessibility, and utilization of ICT resources. The results indicated that many schools lack essential ICT infrastructure, such as computers, internet access, and audiovisual tools, which limit the effective integration of ICT into the curriculum. Furthermore, the study highlighted that a large proportion of teachers had not received adequate training on using ICT in their teaching practices, which further hampers the effective use of digital tools. Despite

these challenges, there is evidence that ICT can improve learning outcomes, particularly in enhancing pupils' understanding concepts.

RECOMMENDATIONS

1. It is recommended that the government and relevant educational authorities increase investment in ICT infrastructure in primary schools, especially in rural areas. This can include the provision of computers, tablets, projectors, and reliable internet access. Priority should be given to schools with limited or no access to such resources to ensure equitable access to digital tools for both teachers and pupils.
2. There should be regular and compulsory ICT training programs for teachers, with a focus on integrating ICT into teaching. Professional development programs should be designed to help teachers build the necessary skills to use ICT tools effectively in the classroom. This would empower teachers to use technology to improve their teaching practices and enhance pupils' learning experiences.
3. The curriculum should be revised to include ICT as an integral component teaching. Educational authorities should ensure that schools are equipped with digital learning materials, e-books, and interactive platforms that align with the curriculum. This would facilitate better engagement and learning outcomes for pupils and ensure that ICT is used to its full potential in education.

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