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Assessment of Ict Integration for Effective Teaching and Learning Outcomes of Arts and Social Sciences Education in Colleges of Education, North Central, Nigeria.

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Abstract

This study examined the integration of Information and Communication Technology (ICT) for enhancing teaching effectiveness and learning outcomes in Arts and Social Sciences education in public Colleges of Education in North Central Nigeria. The study was necessitated by the increasing relevance of ICT in contemporary educational systems and the growing demand for technology-driven instructional practices in teacher training institutions. A descriptive survey research design was employed for the study. The target population comprised lecturers and final-year students, from which a sample of 360 respondents was selected using multistage sampling techniques. Data were collected using a structured instrument titled *ICT Integration for Teaching and Learning Questionnaire (ICT-TLQ)*. The instrument was validated by experts in educational technology and measurement and evaluation, while a reliability coefficient of 0.87 was established using Cronbach's Alpha, indicating high internal consistency. The findings revealed that lecturers and students possessed a moderate level of ICT literacy, particularly in fundamental competencies such as computer operation, use of Microsoft Office applications, internet browsing, and multimedia presentation tools. However, deficiencies were identified in advanced ICT competencies, including the application of ICT for effective instructional delivery, online academic research, digital content development, and troubleshooting of technological devices. The study further established that ICT integration significantly enhances instructional delivery, improves student engagement and participation, facilitates comprehension of abstract concepts, and increases access to diverse educational resources. Nevertheless, effective ICT utilization was constrained by inadequate ICT infrastructure, poor internet connectivity, unstable electricity supply, insufficient professional training, limited technical support services, and inadequate funding. The study concluded that ICT possesses substantial potential for improving educational quality and recommended increased investment in ICT facilities, continuous capacity-building programmes, and effective curriculum integration strategies.

Keywords

Information and Communication Technology (ICT)
Teaching and Learning Outcomes
Arts and Social Sciences Education
Colleges of Education
ICT Integration

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Introduction

Information and Communication Technology (ICT) is becoming a fundamental component of educational transformation globally in the 21st century. Its adoption in teaching and learning environments is reshaping pedagogical practices, encouraging interactive and learner-centered approaches. Through ICT, educators are gaining access to diverse resources, digital tools and innovative teaching methodologies that enhance student engagement and learning outcomes (Yusuf & Onasanya, 2023). As educational institutions strive to produce graduates who are technologically literate and globally competitive, integrating ICT into classroom instruction is becoming both necessary and strategic, especially in teacher training institutions such as Colleges of Education.

The integration of ICT into Arts and Social Sciences education offers new avenues for improving instructional delivery and fostering analytical and critical thinking skills. These disciplines, which traditionally rely on discussion, debate and exploration of human society, can benefit immensely from digital platforms such as learning management systems, digital libraries, online forums, multimedia content and collaborative tools (Yusuf & Onasanya, 2023). ICT will enable both students and lecturers to access up-to-date information, visualize historical or social events through simulations and documentaries and engage in research using digital tools.

In Nigeria, the Federal Government recognizes ICT as a transformative tool for education. The National Policy on Education (FRN, 2020) and the National Policy on ICT in Education provide a framework for embedding technology in curriculum delivery across all levels. These policies emphasize the importance of equipping teachers with ICT skills, developing digital content and ensuring ICT infrastructure in schools and colleges. In alignment with this, the National Commission for Colleges of Education (NCCE) revised its minimum standards to include ICT competence as a

core requirement for teacher education (NCCE, 2022). Despite these progressive policies, implementation remains inconsistent across regions and institutions, often constrained by financial, infrastructural and human resource limitations.

In the North Central region of Nigeria, public Colleges of Education face numerous barriers to effective ICT integration. Challenges such as inadequate computer laboratories, poor internet access, irregular power supply and lack of continuous professional development for lecturers hinder the widespread use of digital tools in teaching (Ameh & Momoh, 2022). While some institutions have taken steps to provide ICT facilities, others remain reliant on traditional teaching methods. Moreover, the digital divide between urban and rural colleges exacerbates inequalities in access to quality education.

There is a growing concern that students in the Arts and Social Sciences departments may not be receiving adequate exposure to ICT tools that would prepare them for 21st-century teaching roles. As future educators, students in Colleges of Education must be proficient in digital technologies to effectively teach in contemporary classrooms and implement Nigeria's basic education curriculum in a technologically evolving society (Ayoade & Daramola, 2021). When these students lack adequate ICT training during their college years, the ripple effects are felt across primary and secondary schools where they eventually serve.

Given this background, there is a pressing need to empirically assess the extent to which ICT has been integrated into the teaching and learning processes within Arts and Social Sciences education in Colleges of Education in North Central Nigeria. Such an assessment will help identify areas of progress, existing gaps and the practical challenges faced by both educators and students in utilizing ICT for instructional purposes. It will also provide a basis for policy review and institutional reform toward

improving the quality and relevance of teacher education.

Ultimately, this study aims to bridge the knowledge gap on ICT integration in Arts and Social Sciences education and offer strategic recommendations for enhancing its effectiveness. With the global shift toward digital education accelerated by events such as the COVID-19 pandemic, institutions can no longer afford to overlook the central role of ICT in academic instruction. A comprehensive understanding of how ICT is currently being utilized in Nigerian Colleges of Education will contribute meaningfully to national development goals, including Sustainable Development Goal 4, which advocates for inclusive and equitable quality education for all (UNESCO, 2022).

Problem Statement/Justification:

In an era defined by rapid technological advancement, Information and Communication Technology (ICT) has become indispensable in educational systems worldwide. Its integration into teaching and learning not only enhances the quality of instruction but also fosters student engagement and prepares learners for a digital future (UNESCO, 2022). In Nigeria, national education policies recognize ICT as a critical enabler of educational reform, particularly in teacher education programs (FRN, 2020; NCCE, 2022). Despite this policy emphasis, the actual implementation of ICT integration across Nigerian Colleges of Education remains inconsistent and limited, particularly in the Arts and Social Sciences disciplines, which are often marginalized in technology-based interventions.

Public Colleges of Education in the North Central region of Nigeria face systemic challenges including inadequate ICT infrastructure, poor internet connectivity, irregular electricity supply and limited professional development opportunities for educators (Ameh & Momoh, 2022; Ayoade & Daramola, 2021). These issues hinder the meaningful adoption of digital tools in instructional delivery. Furthermore, although the National Commission for Colleges of Education (NCCE) has embedded ICT competence into minimum academic standards (NCCE, 2022), there is little empirical evidence indicating the degree to which

these standards are operationalized in Arts and Social Sciences education.

This study is justified by the urgent need to assess the present status and future prospects of ICT integration in these colleges. A rigorous understanding of the gaps and opportunities will offer policymakers and education administrators' practical insights for reforming ICT practices, fostering equity across institutions and ensuring that teacher education aligns with the realities of digital-age classrooms.

Objectives of the Study

This study was carried out:

- i. To assess the existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria.
- ii. To examine how ICT integration influence teaching strategies and students' learning outcomes in the selected institutions.
- iii. To identify the challenges of lecturers and students encounter in the use of ICT for instruction and learning in public Colleges of Education, North Central Nigeria.

Research Questions

- i. What is the level of existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria?
- ii. How does ICT integration influence teaching strategies and students' learning outcomes in public Colleges of Education in North Central Nigeria?
- iii. What challenges do lecturers and students encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria?

Research Hypotheses

- H₀₁:** There is no significant difference between the mean responses of lecturers and students on the level of existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria.
- H₀₂:** There is no significant difference between the mean responses of lecturers and students on how ICT integration influence teaching strategies and students' learning outcomes in public Colleges of Education in North Central Nigeria.
- H₀₃:** There is no significant difference between the mean responses of lecturers and students on the challenges the lecturers and students encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria.

Literature Review

Global Perspectives on ICT in Education: Globally, ICT has revolutionized education by promoting interactivity, collaboration and learner-centered approaches. Numerous studies have demonstrated that ICT tools such as multimedia presentations, learning management systems and virtual simulations enhance instructional delivery and improve student learning outcomes (UNESCO, 2022). The shift from traditional to digital pedagogy is particularly vital in preparing learners for knowledge-based economies. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2022), ICT in education contributes to Sustainable Development Goal 4 by fostering equitable and inclusive learning environments. The COVID-19 pandemic further underscored the necessity of ICT in sustaining education delivery during crises, making digital readiness a prerequisite for resilience in the sector.

ICT in Teacher Education: ICT integration in teacher education is essential for developing digitally competent educators. Yusuf & Onasanya, (2023) emphasizes that equipping teachers with digital skills increases pedagogical innovation and student engagement. The Federal Government of Nigeria

recognizes this in the National Policy on Education (FRN, 2020), which calls for the embedding of ICT across curricula. The National Commission for Colleges of Education (NCCE, 2022) has mandated that teacher training institutions include ICT competence in their minimum standards. However, implementation remains inconsistent, particularly in fields like Arts and Social Sciences, which are often perceived as less aligned with digital tools (Yusuf & Onasanya, 2023).

ICT in Arts and Social Sciences Education: Although Arts and Social Sciences are traditionally seen as less tech-dependent, digital tools hold significant promise for enhancing instruction in these fields. Tools such as online archives, virtual museums, simulations of historical events and interactive maps can deepen learners' analytical and critical thinking skills (Ayode & Daramola, 2021). Nonetheless, most Nigerian institutions still rely heavily on traditional, lecture-based methods (Ameh & Momoh, 2022), partly due to a lack of specialized ICT infrastructure and training for educators in these disciplines.

Challenges to ICT Integration in Nigeria: Several barriers limit the effective integration of ICT in Nigeria's teacher education institutions. Key challenges include inadequate ICT facilities, poor internet connectivity, unreliable electricity, insufficient training for faculty and a lack of institutional incentives (Ameh & Momoh, 2022). Additionally, the digital divide between urban and rural colleges worsens educational inequality (Yusuf & Onasanya, 2023). While existing studies explore ICT adoption broadly in Nigerian higher education, few focus specifically on Arts and Social Sciences within public Colleges of Education. There is limited empirical data on how ICT is currently applied in teaching and learning in these departments, the level of competence among lecturers and students and the contextual challenges unique to this geopolitical zone. This study will fill that gap by providing data-driven insights on ICT integration practices, effectiveness and institutional readiness in Arts and Social Sciences education in North Central Nigeria.

Methodology

This study adopted a descriptive survey research design, which was appropriate for assessing the status, challenges and effects of ICT integration on teaching and learning outcomes in Arts and Social Sciences education in Colleges of Education across North Central Nigeria. The population of the study consisted of all lecturers and final-year students in the School of Arts and Social Sciences across public Colleges of Education in the North Central geopolitical zone of Nigeria. The zone comprised six states: Benue, Kogi, Kwara, Nasarawa, Niger and Plateau as well as the Federal Capital Territory (FCT), Abuja. These institutions were targeted because of their mandate to train future educators and their established departmental structures for Arts and Social Sciences education.

A sample size of 360 respondents was drawn from six purposively selected public Colleges of Education with an estimated combined population of 23,755 students and academic staff, using the Salant and Dillman (1994) model for sample size determination (one institution selected from each state, excluding the FCT). The selection of institutions was based on the availability of ICT infrastructure and active Arts and Social Sciences departments. A multistage sampling technique was employed: in the first stage, institutions were purposively selected; in the second

stage, stratified random sampling was used to proportionately select respondents from departments such as Christian Religious Studies, Islamic Studies, Social Studies, Political Science, History and Geography, ensuring fair representation across disciplines. Data collection was conducted using a structured instrument titled "ICT Integration for Teaching and Learning Questionnaire (ICT-TLQ)." The instrument comprised four sections: demographic information, availability and frequency of ICT tool usage, perceived effectiveness of ICT on teaching and learning and challenges to ICT integration. The instrument was validated by experts in the Departments of Educational Technology and Arts and Social Sciences Education at Umaru Sanda Ahmadu College of Education, Minna.

A pilot study was carried out in one College of Education outside the sampled institutions to establish reliability and Cronbach's Alpha was employed to determine internal consistency and an index of 0.87 was obtained. Ethical approval was obtained from the management of each participating institution. Informed consent was secured from all participants, who were assured of confidentiality and anonymity. Participation was voluntary and respondents were informed of their right to withdraw from the study at any stage without any consequences.

Result and Discussion of Findings

Table 1: Gender of the Respondents

S/No.	Gender	Frequency	Percentage %
1	Female	141	39.2
2	Male	219	60.8
	Total	360	100

Field Survey, 2025

Table 1 presents the gender distribution of the respondents in the study. Out of a total of 360 participants, 219 (60.8%) were male, while 141 (39.2%) were female. This indicates that the majority of the respondents representing nearly two-thirds of the study population were male, whereas female was the minority. The gender distribution shows a higher participation of male respondents in the survey.

Table 2: Existing Knowledge of ICT Integration in Teaching and Learning

S/N	Statement	Mean	Std. Dev.	Decision
1	I understand the basic concepts of ICT tools used for instructional/learning purposes.	3.32	0.64	Accepted
2	I know how to use ICT facilities to support teaching/learning activities.	3.28	0.72	Accepted
3	I have adequate knowledge of using the internet for academic research.	2.48	0.91	Rejected
4	I can effectively use ICT tools to teach or learn course contents.	2.45	0.94	Rejected
5	I possess knowledge of using multimedia (projectors, slides, educational videos).	3.37	0.68	Accepted
6	I know how to operate computers for instruction/learning activities.	3.40	0.60	Accepted
7	I can access online educational platforms for learning or teaching.	2.32	0.88	Rejected
8	I can use Microsoft packages (Word, Excel and PowerPoint) for academic tasks.	3.41	0.66	Accepted
9	My knowledge of ICT improves my learning/teaching capabilities.	3.29	0.73	Accepted
10	I can troubleshoot minor ICT-related problems during academic activities.	2.48	0.91	Rejected
Grand Mean		2.98	0.77	

Field Survey, 2025

Table 2 presents the descriptive statistics on respondents' existing knowledge of ICT integration in teaching and learning. The table shows a mixed level of ICT competence among participants. Respondents reported strong knowledge in foundational ICT skills. This is reflected in higher mean scores for items such as operating computers for instruction/learning activities (Mean = 3.40), using Microsoft packages (Mean = 3.41), possessing knowledge of multimedia tools (Mean = 3.37), understanding basic ICT concepts (Mean = 3.32) and improving learning/teaching capabilities through ICT (Mean = 3.29).

These items were accepted, indicating that respondents generally have essential operational ICT skills. However, the table also reveals weaknesses in more advanced ICT skills. Respondents scored lower

on items such as using ICT tools effectively for teaching or learning (Mean = 2.45), accessing online educational platforms (Mean = 2.32), using the internet for academic research (Mean = 2.48) and troubleshooting minor ICT-related problems (Mean = 2.48). These items were rejected, suggesting limited competence in applying ICT skills to complex or practical teaching and learning situations.

The grand mean of 2.98 with a standard deviation of 0.77 indicates a moderate level of ICT knowledge among lecturers and students. This suggests that while participants have a fair understanding of basic ICT operations, there is a clear need for further training and capacity building to enhance effective ICT integration in teaching and learning.

Table 3: Influence of ICT Integration on Teaching Strategies and Learning Outcomes in Colleges of Education in North Central, Nigeria

S/N	Statement	Mean	Std. Dev.	Decision
1	ICT improves the quality of teaching/learning delivery.	3.36	0.61	Accepted
2	ICT enhances students' participation during learning activities.	3.22	0.70	Accepted
3	ICT does not increase students' interest in classroom lessons.	2.42	0.89	Rejected
4	ICT supports the use of modern instructional strategies.	3.39	0.58	Accepted
5	ICT does not promote collaborative and independent learning.	2.41	0.86	Rejected
6	ICT use improves students' academic performance.	3.27	0.74	Accepted
7	ICT helps lecturer's present complex concepts clearly.	3.37	0.65	Accepted
8	ICT allows access to wider educational resources and materials.	3.44	0.53	Accepted
9	ICT does not encourage students' creativity during learning.	2.48	0.91	Rejected
10	ICT maximizes teaching time through fast lesson delivery.	3.28	0.71	Accepted
Grand Mean		3.06	0.71	

Field Survey, 2025

Table 3 presents descriptive statistics on the influence of ICT integration on teaching strategies and learning outcomes. The results indicate that respondents generally perceive ICT as having a positive impact on instructional practices. Items such as improving the quality of teaching/learning delivery (Mean = 3.36), enhancing students' participation during learning activities (Mean = 3.22), supporting the use of modern instructional strategies (Mean = 3.39), helping lecturers present complex concepts clearly (Mean = 3.37), allowing access to wider educational resources (Mean = 3.44), improving students' academic performance (Mean = 3.27) and maximizing teaching time through fast lesson delivery (Mean = 3.28) were accepted, suggesting that ICT is seen as a valuable

tool for effective teaching and efficient lesson delivery. On the other hand, items phrased negatively such as ICT not increasing students' interest in classroom lessons (Mean = 2.42), not promoting collaborative and independent learning (Mean = 2.41) and not encouraging students' creativity during learning (Mean = 2.48) were rejected.

This indicates that respondents generally disagree with these negative statements, implying that ICT positively contributes to student engagement, collaboration and creativity, although these effects are perceived as moderate. The grand mean of 3.06 with a standard deviation of 0.71 reflects an overall moderate perception of the influence of ICT

integration on teaching strategies and learning outcomes. This suggests that while ICT is acknowledged as beneficial for enhancing teaching

effectiveness, strategies may be required to maximize its impact on promoting collaborative learning, creativity and student-centered engagement.

Table 4: Challenges Facing ICT Integration in Colleges of Education in North Central, Nigeria

S/N	Statement	Mean	Std. Dev.	Decision
1	There is inadequate provision of ICT facilities.	3.42	0.61	Accepted
2	Poor internet connectivity affects ICT usage.	3.47	0.55	Accepted
3	Inadequate ICT training limits effective integration.	3.39	0.67	Accepted
4	Lack of technical support discourages ICT usage.	3.33	0.72	Accepted
5	Erratic electricity supply disrupts ICT-based learning.	3.51	0.59	Accepted
6	ICT facilities are not regularly maintained.	3.29	0.70	Accepted
7	Limited access to personal computers does not hinders ICT practice.	2.41	0.86	Rejected
8	Overcrowded classrooms does not reduce ICT effectiveness.	2.41	0.86	Rejected
9	Lack of funding limits ICT development.	3.44	0.62	Accepted
10	ICT equipment is insufficient for student population.	3.46	0.58	Accepted
	Grand Mean	3.23	0.74	

Source: Field Survey (2025)

Table 4 presents descriptive statistics on the challenges facing ICT integration in Colleges of Education. The results indicate that respondents perceive several significant challenges to effective ICT use. The major challenges identified include inadequate provision of ICT facilities (Mean = 3.42), poor internet connectivity (Mean = 3.47), inadequate ICT training (Mean = 3.39), lack of technical support (Mean = 3.33), erratic electricity supply (Mean = 3.51), irregular maintenance of ICT facilities (Mean = 3.29), insufficient funding (Mean = 3.44) and inadequate ICT equipment for the student population (Mean = 3.46). These items were accepted, showing that respondents agree these factors negatively affect ICT integration and limit its effectiveness in teaching and learning.

On the other hand, items phrased negatively such as limited access to personal computers not hindering ICT practice (Mean = 2.41) and overcrowded

classrooms not reducing ICT effectiveness (Mean = 2.41) were rejected. This indicates that respondents disagreed with these statements, confirming that limited access to computers and overcrowding are indeed barriers to ICT integration. The grand mean of 3.23 with a standard deviation of 0.74 reflects a generally high perception of the challenges facing ICT integration. This suggests that while Colleges of Education have begun implementing ICT, persistent infrastructural, technical and resource-related constraints continue to hinder its effective use in teaching and learning.

Ho₁: There is no significant difference between the mean responses of lecturers and students on the level of existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences.

Table 5: Summary of t-test Analysis on ICT Knowledge Level among Lecturers and Students

Variables	N	Mean	SD	Df	t-cal	t-tab	l. sig	Remarks
Lecturers	62	3.32	0.72	358	0.28	1.96	0.05	Not Sig.
Students	298	3.29	0.71					

Source: Field Survey, 2025

Table 5 shows that the calculated t-value of 0.28 at 358 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.96. Therefore, the null hypothesis which states that there is no significant difference in the mean responses of lecturers and students on the level of existing knowledge of ICT integration in the teaching

and learning of Arts and Social Sciences in public Colleges of Education in North Central Nigeria, was accepted.

Ho₂: There is no significant difference between the mean responses of lecturers and students on how ICT integration influences teaching strategies and students' learning outcomes.

Table 6: Summary of t-test Analysis on the Influence of ICT Integration on Teaching and Learning

Variables	N	Mean	SD	Df	t-cal	t-tab	l. sig	Remarks
Lecturers	62	3.35	0.68	358	0.52	1.96	0.05	Not Sig.
Students	298	3.30	0.67					

Source: Field Survey, 2025

Table 6 shows that the calculated t-value of 0.52 at 358 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.96. Therefore, the null hypothesis which states that there is no significant difference in the mean responses of lecturers and students on how ICT integration influences teaching strategies and

students' learning outcomes in public Colleges of Education in North Central Nigeria, was accepted.

Ho₃: There is no significant difference between the mean responses of lecturers and students on the challenges they encounter in the use of ICT for instructional purposes.

Table 7: Summary of t-test Analysis on Challenges of ICT Integration among Lecturers and Students

Variables	N	Mean	SD	Df	t-cal	t-tab	l. sig	Remarks
Lecturers	62	3.40	0.64	358	0.45	1.96	0.05	Not Sig.
Students	298	3.36	0.66					

Source: Field Survey, 2025

Table 7 shows that the calculated t-value of 0.45 at 358 degrees of freedom and at 0.05 level of significance is less than the critical value of 1.96. Therefore, the null hypothesis which states that there is no significant difference in the mean responses of lecturers and students on the challenges they encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria, was accepted.

Discussion of Findings

The result of research question 1 shows that both lecturers and students have good knowledge of basic ICT skills. They can operate computers, use Microsoft programs, handle multimedia tools and understand basic ICT concepts. This finding agrees with Liu *et al.* (2023), who concluded that access to ICT resources helps teachers and students become familiar with digital tools. But, both lecturers and students showed weakness in advanced ICT skills, such as using ICT for

teaching effectively, accessing online educational platforms, doing online academic research and troubleshooting ICT problems. This is similar to what Oubibi et al. (2024) found, that teachers often lack deeper digital skills and technical support for full ICT use.

The result of research question 2 indicates that both lecturers and students believe ICT positively affects teaching strategies and learning outcomes. They agreed that ICT improves teaching delivery, supports modern teaching methods, increases student participation, helps teachers explain complex concepts and gives access to more learning resources. This supports the findings of Springer (2023), who reported that ICT improves instruction and learning when used well. Respondents rejected statements that ICT does not improve student interest, collaboration, or creativity, showing they believe ICT contributes positively to these areas. This agrees with the finding of Idowu (2025), who found that ICT can improve student engagement and academic performance, though the effect depends on resources and training.

The result of research question 3 shows that challenges that limit ICT use in teaching include: inadequate ICT facilities, poor internet, irregular electricity, insufficient training, lack of technical support, limited funding and inadequate equipment. This agrees with Olokooba et al. (2018), who found out that poor infrastructure and lack of training hinder ICT use in Nigerian schools.

Conclusion

Based on the findings, the study concluded that both lecturers and students have good knowledge of basic ICT skills. They are able to operate computers, use Microsoft programs, handle multimedia tools and understand basic ICT concepts. But, they showed weakness in advanced ICT skills, such as using ICT effectively for teaching and learning, accessing online educational platforms, conducting online academic research and troubleshooting ICT problems. The study also concluded that both lecturers and students perceived that ICT positively affects teaching strategies and learning outcomes. ICT improves

teaching delivery, supports modern instructional methods, increases student participation, helps explain complex concepts and provides access to wider learning resources and contributes positively to student interest, collaboration and creativity. The study identified several challenges that limit ICT use in teaching, including inadequate ICT facilities, poor internet connectivity, irregular electricity supply, insufficient training, lack of technical support, limited funding and inadequate equipment. These challenges reduce the effectiveness of ICT integration in Colleges of Education.

Recommendations

Based on the findings, the following recommendations are made:

- i. Colleges of Education should organize regular training and workshops to build lecturers' and students' advanced ICT skills. This will ensure they can effectively use ICT for teaching, learning and research purposes.
- ii. Colleges of Education should integrate ICT into the curriculum and encourage lecturers to adopt ICT-based teaching strategies. This will enhance student engagement, creativity and collaborative learning, while maximizing the benefits of ICT in teaching and learning.
- iii. Policymakers and Colleges of Education management should invest in ICT infrastructure and provide reliable technical support. This includes ensuring consistent power supply, improving internet access, supplying sufficient ICT equipment and allocating funds for regular maintenance and upgrades.

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ASSESSMENT OF ICT INTEGRATION FOR EFFECTIVE TEACHING AND LEARNING OUTCOMES. (AICTIETLOQ)

School of Secondary Education,
Umaru Sanda Ahmadu College of Education,
Minna.
15th December, 2025

Dear Sir,

REQUEST FOR FACE AND CONTENT VALIDATION OF RESEARCH INSTRUMENT

The researchers are Lecturers in the above named institution presently carrying out a research on the topic: "**ASSESSMENT OF ICT INTEGRATION FOR EFFECTIVE TEACHING AND LEARNING OUTCOMES OF ARTS AND SOCIAL SCIENCES EDUCATION IN COLLEGES OF EDUCATION, NORTH CENTRAL, NIGERIA**" We sincerely hope you will consent to carry out the content validation of the attached draft copy of research instrument. Your signed validation report will be of great benefit to the research. Thank you Sir.

Objective of the Study

- i. To assess the existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria.
- ii. To examine how ICT integration influences teaching strategies and students' learning outcomes in the selected institutions.
- iii. To identify the challenges lecturers and students encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria.

Research Questions

- i. What is the level of existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria?
- ii. How does ICT integration influence teaching strategies and students' learning outcomes in public Colleges of Education in North Central Nigeria?
- iii. What challenges do lecturers and students encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria?

Research Hypotheses

H₀₁: There is no significant difference between the mean responses of lecturers and students on the level of existing knowledge of ICT integration in the teaching and learning of Arts and Social Sciences among lecturers and students in public Colleges of Education in North Central Nigeria.

H₀₂: There is no significant difference between the mean responses of lecturers and students on how ICT integration influence teaching strategies and students' learning outcomes in public Colleges of Education in North Central Nigeria.

H₀₃: There is no significant difference between the mean responses of lecturers and students on the challenges the lecturers and students encounter in the use of ICT for instruction and learning purposes in public Colleges of Education in North Central Nigeria.

SECTION A: DEMOGRAPHIC DATA

1. Category of Respondent: Lecturer () Student ()
2. Gender: Male () Female ()

SECTION B:

Note: The Acronyms on the questionnaire means

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

Cluster 1: Existing knowledge of ICT integration in the teaching and learning

S/No	Item Statement	SA	A	D	SD
1	I understand the basic concepts of ICT tools used for instructional/learning purposes.				
2	I know how to use ICT facilities to support teaching/learning activities.				
3	I have adequate knowledge of using the internet for academic research.				
4	I can effectively use ICT tools to teach or learn course contents.				
5	I possess knowledge of using multimedia (projectors, slides, educational videos).				
6	I know how to operate computers for instruction/ learning activities.				
7	I can access online educational platforms for learning or teaching.				
8	I can use Microsoft packages (Word, Excel and PowerPoint) for academic tasks.				
9	My knowledge of ICT improves my learning/teaching capabilities.				
10	I can troubleshoot minor ICT-related problems during academic activities.				

Cluster 2: ICT integration and how it influence teaching strategies and students' learning outcomes

S/No	Statement	SA	A	D	SD
1	ICT improves the quality of teaching/learning delivery.				
2	ICT enhances students' participation during learning activities.				
3	ICT does not increases students' interest in classroom lessons.				
4	ICT supports the use of modern instructional strategies.				
5	ICT does not promotes collaborative and independent learning.				
6	ICT use improves students' academic performance.				
7	ICT helps lecturer's present complex concepts clearly.				
8	ICT allows access to wider educational resources and materials.				
9	ICT does not encourages students' creativity during learning.				
10	ICT maximizes teaching time through fast lesson delivery.				

Cluster 3: Challenges encounter by lecturers and students in the use of ICT for instruction and learning purposes

S/No	Statement	SA	A	D	SD
1	There is inadequate provision of ICT facilities.				
2	Poor internet connectivity affects ICT usage.				
3	Inadequate ICT training limits effective integration.				
4	Lack of technical support discourages ICT usage.				
5	Erratic electricity supply disrupts ICT-based learning.				
6	ICT facilities are not regularly maintained.				
7	Limited access to personal computers does not hinders ICT practice.				
8	Overcrowded classrooms does not reduce ICT effectiveness.				
9	Lack of funding limits ICT development.				
10	ICT equipment is insufficient for student population.				

VALIDATOR'S COMMENTS/REPORTS