FROM RESISTANCE TO ACCEPTANCE: FOSTERING A POSITIVE ATTITUDE TOWARD DIGITAL TECHNOLOGY UTILIZATION IN NIGERIA'S BASIC EDUCATION SECTOR

By

Professor Sadiya Sani Daura
Director & Chief Executive
National Teachers' Institute Kaduna-Nigeria
Tel+2348033974292
Email: halimadayton2015@gmail.com
&
Armiya'u Malami Yabo, PhD
Academic Services Department
National Teachers' Institute, Kaduna
Tel: +2347068110038
Email: armayabo@gmail.com

Abstract

This study examines the impact of UBEC-NTI workshops on fostering positive attitudes toward digital technology adoption among basic school teachers in Nigeria's 37 smart schools. Using a stratified random sample of 120 teachers across six geopolitical zones, the research employed pre-post questionnaires and classroom observations to assess attitudinal changes. Results revealed statistically significant improvements in both teachers' attitudes ($t=26.14$, $p<.0001$, mean increase from 2.32 to 4.18) and willingness to adopt technology ($t=15.65$, $p<.0001$, mean increase from 3.11 to 4.43). However, key barriers persist, including inadequate electricity (65.8%), inconsistent internet (60.8%), and residual negative attitudes (45%). The findings demonstrate that the targeted professional development effectively shifts teachers' attitude and willingness to adopt digital technology in the teaching and learning process. The study recommends the scale up of UBEC-NTI workshop on attitudinal change in digital technology to become an annual programme and the provision of enhanced solar power solutions for all smart schools to ensure stable electricity.

Keywords: Positive Attitude, Digital Technology Utilization, Nigeria, Basic Education Sector

1.1 Background to the Study

The integration of digital technology in teaching and learning has become a global imperative, as it enhances instructional delivery, fosters student engagement, and prepares learners for a technology-driven world (UNESCO, 2025). In Nigeria, basic education faces challenges such as overcrowded classrooms and limited resources, making the adoption of digital tools critical for improving learning outcomes (Abubakar & Ahmed, 2020). Digital technology offers opportunities for personalized learning, access to vast educational resources, and the development of 21st-century skills, underscoring its necessity in basic schools.

To address this need, the Universal Basic Education Commission (UBEC) established smart schools across Nigeria, equipped with state-of-the-art digital infrastructure, including computers, interactive whiteboards, and internet connectivity (This Day, 2025). These schools were designed to serve as models for technology-integrated education, aligning with global trends and Nigeria's National Policy on Education. However, despite these investments, the full potential of these resources remains untapped due to underutilization by teachers.

For digital technology to transform basic education, teachers must embrace and effectively utilize these tools in their instructional practices (Ertmer & Ottenbreit-Leftwich, 2010). Teachers play a pivotal role in integrating technology into the classroom, and their attitudes, competence, and willingness to adapt are critical for success. Unfortunately, many basic school teachers in Nigeria still prefer traditional teaching methods, highlighting the need for attitudinal change and capacity building to ensure the effective use of available digital resources.

The National Teachers' Institute (NTI) has been at the forefront of teachers' professional development, particularly in digital literacy, through workshops and training programs (NTI, 2024). Collaborating with UBEC, NTI has initiated interventions to equip teachers with the skills and mindset required for technology-enhanced teaching. For example, NTI has trained over 1,000 Nigerian Teachers on remote teaching and e-learning skills from 2022-2023. NTI has also adopted e-facilitation in 2023, e-supervision of students' project in 2024 and e-teaching practice supervision also in 2024 for in-service teachers undergoing training in the Bed. programmes of the Institute. These efforts aim to bridge the gap between policy and practice, ensuring that teachers are not only trained but also motivated to adopt digital tools in their classrooms98.

Despite these initiatives, challenges such as inadequate technical support, erratic power supply, and resistance to change persist, hindering the effective utilization of digital technology in basic schools (Adedoja, 2019). Addressing these barriers requires a multi-stakeholder approach, including sustained training, infrastructure maintenance, and policy enforcement. This study among other things, explores these challenges and proposes strategies to enhance teachers' adoption of digital technology in Nigeria's basic education system.

1.2 Statement of the Problem

The Universal Basic Education Commission (UBEC) established 37 smart schools across Nigeria to revolutionize basic education through digital technology integration. These schools were equipped with modern facilities to enhance teaching and learning experiences. The initiative was designed to align with global educational trends and bridge the digital divide in Nigeria's education system. However, despite this significant investment, the expected transformation in classroom instruction has not been fully realized.

A major concern is the underutilization of these state-of-the-art facilities by both teachers and students. Reports indicate that many of the digital tools remain idle or are used minimally, defeating the purpose of their provision. This underutilization raises questions about the effectiveness of the smart school initiative and the barriers preventing optimal use of the available technology. The situation suggests a gap between policy implementation and practical application in the school environment.

Further observations reveal that teachers in these smart schools continue to rely heavily on traditional teaching methods rather than adopting the digital technology approach. Chalkboards, textbooks, and lecture-based instruction remain dominant, despite the availability of digital resources designed to make lessons more interactive and engaging. This resistance to change highlights a critical disconnect between the provision of technology and its actual integration into daily teaching practices.

To address this challenge, UBEC partnered with the National Teachers' Institute (NTI) to conduct workshops for 195 smart school teachers aimed at fostering an attitudinal change toward the use of digital technology. The workshops concurrently conducted focused on building teachers' confidence, skills, and willingness to incorporate digital tools

into their instructional delivery. While these efforts were commendable, there was a need to assess their effectiveness in driving meaningful change among the participants.

This paper presents the findings from studies conducted to evaluate the impact of the UBEC-NTI workshops on attitudinal change towards the adoption of digital technology by basic school teachers.

1.3 Objective of the Study

The specific objectives of the study were to;

i. Find out the difference between pre and post workshop in the attitude of basic school teachers on the adoption digital technology in teaching.
ii. Find out the difference between pre and post workshop in the willingness of basic school teachers to adopt digital technology in teaching.
iii. Identify the factors preventing the full utilization of digital technology for teaching in Nigerian smart schools.

1.4 Research Hypotheses

The following hypotheses were tested at 0.05 level of significance;

H_{01} – There is no significant difference in the attitude of basic school teachers between pre and post workshop on the adoption of digital technology in teaching.

H_{02} – There is no significant difference in the willingness of basic school teachers to adopt digital technology in teaching between pre and post workshop.

1.5 Research Questions

The study sought to answer the following research question:

i. What are the factors preventing the full utilization of digital technology for teaching in Nigerian smart schools?

2.1 Methodology

The study adopted a descriptive survey research design to assess the impact of the UBEC-NTI workshop on teachers' adoption of digital technology in smart schools. This design was chosen as it allows for the systematic collection of quantitative and qualitative data from participants regarding their attitudes, skills, and willingness to utilize digital tools after the training. The approach enabled the researchers to evaluate the effectiveness of the intervention while identifying persisting challenges in technology integration within the classroom setting.

The population of the study comprised all 195 teachers who participated in the UBEC-NTI attitudinal change workshop across Nigeria's 37 smart schools. A sample of 120 teachers was selected, representing 61.5% of the total population. The sample was drawn using a stratified random sampling technique, ensuring that 20 participants were selected from each of Nigeria's six geopolitical zones (North-West, North-East, North-Central, South-West, South-East, and South-South). This approach guaranteed fair representation.

Table 1: Participants at the Workshop

S/N	ZONE	STATES	NO. OF PARTICIPANTS
1	North West	Kano, Kaduna, Katsina	45
2	North East	Adamawa, Bauchi	30
3	North Central	Nasarawa, Kwara, Niger, Benue	60
4	South	Oyo, Osun, Ekiti and Cross River	60
Total			**195**

Data was collected using two main instruments: a structured e-questionnaire and an observation checklist. The e-questionnaire gathered information on teachers' perceptions, believe, confidence levels, and frequency of digital tool usage for pre and post-workshop, while the observation checklist documented actual classroom practices. The quantitative data from the e-questionnaire was analyzed using descriptive statistics (percentages) and inferential statistics (t-test) to determine significant differences in attitudes before and after the workshop. Qualitative data from observations provided contextual insights to complement the statistical findings, offering a comprehensive understanding of teachers' technology integration in real classroom settings.

3.1 Data Presentation and Analyses

The data presentation and analyses for this study was conducted through the use of t-test (to test the hypotheses) while frequency and percentage (to answer the research).

3.2 Test for Hypothesis I

H_{01} – There is no significant difference in the attitude of basic school teachers between pre and post workshop on the adoption of digital technology in teaching.

The independent samples t-test revealed a statistically significant difference in the attitude of basic school teachers between pre and post workshop on the adoption of digital technology in teaching.

Table 2: Difference in the Attitude of Basic School Teachers between Pre and Post Workshop on the Adoption of Digital Technology in Teaching

	N	Mean	SD	t_{cal}	Df	p-value
Pre-Workshop	120	2.32	.43			
				26.14*	238	**< .0001***
Post-Workshop	120	4.18	.65			

Source: Primary data, 2025 *Significance level =0.05

Based on the analysis of the data in table 2, Hypothesis I is hereby rejected because the p-value is less than 0.05. the teachers demonstrate significantly more positive attitude after the workshop than before the workshop on the adoption of digital technology in teaching. In fact, the teachers' explained that they found it easier and less stressful.

3.3 Test for Hypothesis II

H_{02} – There is no significant difference in the willingness of basic school teachers to adopt digital technology in teaching between pre and post workshop.

The independent samples t-test revealed a statistically significant difference in the willingness of basic school teachers to adopt digital technology in teaching between pre and post workshop.

Table 3: Difference in the willingness of Basic School Teachers to Adopt Digital Technology in Teaching between Pre and Post Workshop

	N	Mean	SD	t_{cal}	Df	p-value
Pre-Workshop	120	3.11	.54	15.65*	238	**< .0001***

Post-Workshop	120	4.43	.75

Source: Primary data, 2025 *Significance level =0.05

Based on the analysis of the data in table 3, Hypothesis II is hereby rejected because the p-value is less than 0.05. the teachers demonstrate significantly more willingness to adopt digital technology tools after the workshop than before the workshop. The teachers suggested the adoption of digital technology in teaching for all subjects.

3.4 Answering the Research Question

i. What are the factors preventing the full utilization of digital technology for teaching in Nigerian smart schools?

The major factors identified were: Inadequate Electricity, Inconsistent Internet Services, Inadequate Motivation, Negative Attitude of Teachers, and Inadequate Computer Literacy,

Table 3: Factors Preventing the Full Utilization of Digital Technology for Teaching in Nigerian Smart Schools

S/N	FACTORS	FREQUENCY	PERCENTAGE
1	Inadequate electricity	76	65.8%
2	Inconsistent Internet Services	73	60.8%
3	Inadequate Motivation	68	56.7%
4	Negative Attitude of teachers	54	45.0%
5	Inadequate Computer Literacy	36	30.0%

Source: Primary data, 2025

3.5 Discussion of Findings

The analysis of Hypothesis I reveals a statistically significant difference in the attitude of basic school teachers toward the adoption of digital technology in teaching before and after the workshop. The mean score increased substantially from 2.32 (SD = 0.43) in the pre-workshop phase to 4.18 (SD = 0.65) in the post-workshop phase, indicating a marked improvement in teachers' attitudes. The calculated t-value ($t = 26.14$, $df = 238$) and the associated p-value ($< .0001$) strongly reject the null hypothesis, suggesting that the workshop had a significant positive impact on the participants' perception and willingness to adopt digital tools in their teaching practices.

This finding aligns with previous studies that demonstrate the effectiveness of targeted professional development programs in enhancing teachers' attitudes and competencies in educational technology (Ertmer & Ottenbreit-Leftwich, 2010). The shift in attitude underscores the importance of structured training in bridging the digital gap among educators, particularly in basic schools where such exposure is often limited. Consequently, the result supports the integration of regular digital pedagogy workshops as a strategic approach to fostering long-term acceptance and use of digital tools in the classroom.

The analysis of Hypothesis II indicates a significant increase in the willingness of basic school teachers to adopt digital technology in teaching following the workshop. The mean score rose from 3.11 (SD = 0.54) before the workshop to 4.43 (SD = 0.75) after the workshop. With a calculated t-value of 15.65 and a p-value of less than .0001, the null hypothesis is rejected, affirming that the workshop significantly influenced teachers' willingness to integrate digital tools into their instructional practices. This change highlights the role of professional training in boosting teachers' readiness to embrace technological innovations in education.

These findings corroborate existing research which shows that exposure to hands-on, practical training significantly enhances teachers' confidence and motivation to use digital technologies in the classroom (Adedoja, 2019). Increased

willingness post-workshop suggests that such interventions not only raise awareness but also address underlying concerns or barriers to adoption, such as fear of technology or lack of competence. Therefore, incorporating continuous digital skills development into teacher training programs is essential for fostering sustainable digital integration in basic education.

The analysis of data addressing the research question on factors preventing the full utilization of digital technology in Nigerian smart schools reveals several critical challenges. The most prominent barrier identified is inadequate electricity supply, cited by 65.8% of respondents, followed closely by inconsistent internet services (60.8%). These infrastructural challenges suggest that despite the availability of digital tools in smart schools, the absence of stable power and connectivity hinders effective implementation.

Other notable factors include inadequate motivation (56.7%), negative attitudes of teachers (45.0%), and insufficient computer literacy (30.0%). These human-related challenges underscore the need for continuous professional development and systemic incentives to drive engagement with digital tools. As suggested by Abubakar and Ahmed (2020), teachers' attitudes, training, and support systems play a pivotal role in the success of educational technology adoption. Addressing both infrastructural and human capacity issues is therefore essential for the full realization of digital learning objectives in Nigerian smart schools.

4.1 Conclusion

Having completed the analysis and discussion of this study, the following conclusions were made:

i. The workshop significantly improved teachers' attitudes toward digital technology adoption, with a marked increase in mean scores (2.32 to 4.18).
ii. Teachers' willingness to use digital technology rose substantially (mean: 3.11 to 4.43), indicating that the workshop effectively enhanced confidence and intent to integrate tools.
iii. Infrastructural gaps (electricity and internet) and human factors (negative attitudes, skill gaps) hinder full utilization, despite improved attitudes.

4.2 Recommendations

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

i. Scale up UBEC-NTI workshop on attitudinal change in digital technology to become an annual programme. This will ensure adequate coverage of basic school teachers in Nigeria.,
ii. Embed digital pedagogy in teacher certification programs (e.g., NTI curricula) to institutionalize willingness.
iii. Prioritize infrastructure upgrades through: enhanced solar power solutions for all smart schools to ensure stable electricity and dedicated broadband partnerships with telecom providers for reliable internet.

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