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Queens Journal: Education, Technology, Science, and Social Humanities
https://jurnal.faperta-unras.ac.id/index.php/Queenjournal

ICT Integration in Social Studies Instruction: Teachers' Attitudes, Challenges, and Classroom Strategies in Junior Secondary Schools in Ondo State, Nigeria

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Check for updates

Article Information:
Received Aug 17, 2025
Revised Sept 30, 2025
Accepted Oct 12, 2025

Keywords:
Emotional Intelligence, Marriage Dysfunction, Conflict Resolution, Empathy, Self-Awareness.

Abstract

Background of Study: The integration of Information and Communication Technology (ICT) into secondary school education has become a key priority for enhancing instructional quality, increasing learner engagement, and fostering critical thinking skills. Despite the growing recognition of ICT's potential, challenges persist, particularly in the context of teaching Social Studies in secondary schools.

Aims and Scope of Paper: This study aims to examine Social Studies teachers' attitudes toward ICT integration, the challenges they face, the instructional strategies they employ, and the relationships between these factors and the use of ICT in junior secondary schools in Ondo State, Nigeria. The scope of the paper focuses on understanding how these elements interact to influence effective ICT integration in Social Studies instruction.

Methods: The study employed a descriptive-correlational survey research design. A sample of 200 Social Studies teachers was selected from public junior secondary schools using multi-stage sampling techniques. Data were collected through a structured questionnaire and analyzed using descriptive statistics and Pearson product–moment correlation analysis at the 0.05 level of significance.

Results: The findings indicate that teachers generally have positive attitudes toward ICT integration and moderately employ ICT-based instructional strategies. However, significant challenges were identified, including inadequate ICT infrastructure, poor internet connectivity, time constraints, and difficulties in aligning ICT use with the Social Studies curriculum. Additionally, the study found significant positive relationships between teachers' attitudes and ICT use, as well as between instructional strategies and ICT use.

Conclusion: Effective ICT integration in Social Studies instruction depends not only on positive teacher attitudes but also on supportive institutional conditions and well-designed pedagogical strategies. The study highlights the need for addressing infrastructure gaps and providing targeted teacher training. The research contributes empirical evidence that can guide policy decisions, teacher professional development, and curriculum planning to enhance ICT-supported Social Studies instruction in Nigerian secondary schools.

How to Cite : Olowo, O.O.,Kataye, T.O. (2025). ICT Integration in Social Studies Instruction: Teachers' Attitudes, Challenges, and Classroom Strategies in Junior Secondary Schools in Ondo State, Nigeria. *Queens Journal: Education, Technology, Science, and Social Humanities*, 1.1, 43–58. https://doi.org/10.58222/queenjournal.v1.i1.627
ISSN : xxxx-xxxx
Published by : Universitas Ratu Samban, Bengkuu, Indonesia

A. Introduction

The integration of Information and Communication Technology (ICT) into education has become a central priority in global efforts to improve teaching effectiveness, learner engagement, and educational equity. ICT encompasses a broad range of digital tools and resources—such as computers, internet services, multimedia applications, and online learning platforms—that support information processing, communication, and knowledge construction in educational contexts (Samoylenko et al., 2021; Ugwu & Nnaekwe, 2019). International evidence consistently shows that when ICT is meaningfully integrated into instruction, it can enhance students' motivation, promote higher-order thinking, and support learner-centred pedagogical approaches (Abedi, 2024; Muianga et al., 2018). In Nigeria, the importance of ICT in education is formally recognised in the National Policy on Education, which identifies technology as a key driver of instructional innovation and national development (Asaju & Ashepo, 2025; Nwuke & Yellowe, 2025). Government initiatives and agencies such as the Universal Basic Education (UBE) programme and the National Information Technology Development Agency (NITDA) have emphasised teacher training and ICT capacity development as essential components of educational reform. However, empirical studies indicate that the implementation of ICT policies in Nigerian secondary schools remains uneven and limited, particularly due to infrastructural inadequacies, unreliable electricity supply, poor internet connectivity, and insufficient technical support (Kemi, 2023; Olatunji, 2016).

Social Studies, as a subject area, occupies a strategic position in the junior secondary school curriculum because it is designed to develop civic competence, critical thinking, social awareness, and responsible citizenship. The interdisciplinary nature of Social Studies makes it particularly suitable for ICT-supported instruction, as digital tools can facilitate access to diverse information sources, simulations, maps, historical archives, and collaborative learning environments that enrich classroom experiences (Poulitsa et al., 2025). Research has shown that ICT use in Social Studies can make abstract concepts more concrete, promote inquiry-based learning, and encourage active student participation when aligned with appropriate pedagogical strategies (Grant et al., 2022; Hwang et al., 2015; Schneider, 2017; Suari et al., 2023). Despite these documented benefits, the extent to which ICT is integrated into Social Studies instruction in Nigerian junior secondary schools remains constrained. Studies consistently report that many teachers lack adequate training, confidence, and pedagogical competence to use ICT effectively in classroom instruction (Buabeng-Andoh, 2012; Kundu et al., 2020). In addition to skill-related challenges, teachers often face institutional barriers such as limited access to ICT facilities, overcrowded classrooms, time constraints, and difficulties aligning ICT use with prescribed curricula (Abubakar, 2016; Adenubi et al., 2025). These challenges contribute to a persistent gap between policy aspirations and actual classroom practices.

Teachers' attitudes toward ICT play a critical role in determining whether and how technology is adopted in instructional settings. Empirical evidence suggests that teachers who perceive ICT as useful, relevant, and compatible with their teaching goals are more likely to integrate it into their lessons, whereas negative attitudes, low self-efficacy, and resistance to change often result in minimal or superficial use of technology (Nordlöf et al., 2019; Shittu et al., 2016). Beyond attitudes, the instructional strategies teachers employ—such as collaborative learning, differentiated instruction, and the use of multimedia resources—significantly influence the effectiveness of ICT integration and its impact on student engagement (Abubakar et al., 2024; Sabri et al., 2024). Given these realities, there is a need for context-specific empirical studies that examine how Social Studies teachers perceive ICT, the challenges they encounter in using it, and the classroom strategies they adopt to optimise its instructional value. While several studies have explored ICT integration in Nigerian secondary schools broadly, fewer have focused specifically on Social Studies at the junior secondary level, where foundational civic and social competencies are developed. Understanding teachers' attitudes, challenges, and instructional strategies in this context is essential for informing policy decisions, guiding professional development programmes, and improving ICT-supported pedagogy. Therefore, this study investigates ICT integration in Social Studies instruction by examining teachers' attitudes, challenges, and classroom strategies in junior secondary schools in Ondo State, Nigeria. By providing empirical evidence on these interrelated factors,

the study seeks to contribute to ongoing efforts to strengthen effective and sustainable ICT integration in Nigerian Social Studies classrooms.

Statement of the Problem. The integration of Information and Communication Technology (ICT) into secondary school education is widely promoted as a means of enhancing instructional quality, learner engagement, and the development of critical thinking skills. In Nigeria, national education policies and reform initiatives emphasise ICT adoption as a key strategy for improving teaching and learning across subject areas, including Social Studies (Ismaila & Ibrahim, 2023). Despite these policy commitments, evidence from empirical studies indicates that ICT integration in Nigerian public secondary schools remains limited, inconsistent, and uneven across regions and subject areas (Bakare & Olanrewaju, 2022; Salam et al., 2018). Social Studies, particularly at the junior secondary school level, plays a foundational role in developing students' civic competence, social awareness, and participatory skills. The subject is well-suited for ICT-supported instruction because digital tools can facilitate inquiry-based learning, access to diverse information sources, and interactive classroom activities (Alabi et al., 2025; Mishra, 2020). However, classroom practices in many Nigerian schools continue to rely heavily on traditional, teacher-centred methods, with limited and superficial use of ICT tools (Ajadi, 2024; Nwani, 2021).

Several studies have identified persistent barriers to effective ICT integration, including inadequate infrastructure, unreliable electricity supply, poor internet connectivity, insufficient technical support, and limited access to digital resources (Joshi & Khatiwada, 2024; Oshowole, 2024; Salam et al., 2018). In addition to these structural constraints, teachers often face pedagogical and personal challenges such as limited ICT competence, low confidence in using digital tools, difficulty aligning ICT use with curriculum requirements, and time constraints within the school timetable (Abedi, 2024; Ghavifekr et al., 2016). These challenges are particularly pronounced at the junior secondary school level, where teachers are expected to balance curriculum coverage with innovative instructional practices. Teachers' attitudes toward ICT and the classroom strategies they employ are critical factors influencing whether technology is meaningfully integrated into instruction. Research suggests that positive attitudes alone do not guarantee effective ICT use unless teachers are also supported with appropriate instructional strategies and conducive teaching conditions (Abidin & Muhammad, 2024; Kale & Goh, 2014). While some Nigerian studies have examined teachers' perceptions of ICT in general terms, there remains a limited body of empirical evidence that simultaneously examines teachers' attitudes, the challenges they encounter, and the classroom strategies they adopt specifically within Social Studies instruction at the junior secondary school level, particularly in Ondo State.

The absence of such context-specific evidence creates a gap between policy expectations and classroom realities, making it difficult for education planners, school administrators, and teacher educators to design targeted interventions that address teachers' actual needs. Without a clear understanding of how Social Studies teachers perceive ICT, the obstacles they face, and the strategies they use to integrate technology into their lessons, efforts to promote effective ICT integration may remain ineffective or misdirected. Therefore, the problem addressed in this study is the limited empirical understanding of ICT integration in Social Studies instruction in junior secondary schools in Ondo State, Nigeria, particularly about teachers' attitudes, challenges, and classroom strategies. Addressing this problem is essential for informing professional development, improving instructional practices, and supporting more effective and sustainable integration of ICT in Social Studies education.

This section reviews relevant literature related to ICT integration in Social Studies instruction, with emphasis on the theoretical framework guiding the study, conceptual issues surrounding ICT and learning, and empirical evidence on teachers' and students' perceptions as well as challenges associated with ICT use in teaching and learning.

Theoretical Framework: Technological Pedagogical and Content Knowledge (TPACK). The Technological Pedagogical and Content Knowledge (TPACK) framework provides a comprehensive theoretical lens for understanding how teachers integrate technology into instructional practice in a meaningful and pedagogically sound manner. The framework evolved from Shulman's concept of Pedagogical Content Knowledge (PCK), which emphasised the integration of subject matter knowledge

and pedagogy as the foundation of effective teaching. Thyssen et al. (2023) extended this model by incorporating Technological Knowledge (TK), recognising the growing importance of digital technologies in modern educational contexts. TPACK posits that effective ICT integration is not based on isolated knowledge of technology, pedagogy, or subject matter, but rather on the dynamic interaction among three core domains: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). The intersections of these domains give rise to specialised forms of knowledge, namely Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), and Pedagogical Content Knowledge (PCK). The holistic integration of these components constitutes TPACK, which enables teachers to design instruction that aligns technological tools with pedagogical strategies and subject content (Baran & Uygun, 2016; Jibril & Adedokun-Shittu, 2024).

Empirical studies indicate that teachers who possess strong TPACK are better positioned to redesign instruction, adapt pedagogy, and select appropriate ICT tools that support learners' cognitive, social, and epistemic needs (Koh, 2019; Tseng et al., 2022). Such teachers are more capable of considering learner characteristics, including digital literacy levels, learning difficulties, and readiness for ICT-supported instruction, when making instructional decisions (Mahmood et al., 2025; Ziyabekova & Zhumabaeva, 2025). Conversely, deficiencies in any of the TPACK components may hinder effective ICT integration. In the context of Social Studies education, TPACK provides a particularly relevant framework. Social Studies requires the development of critical thinking, civic awareness, inquiry skills, and interactive learning experiences. ICT tools such as digital maps, videos, simulations, and collaborative platforms can enhance these learning outcomes when teachers possess adequate technological pedagogical knowledge (TPK). Teachers with strong technological knowledge but weak pedagogical skills may struggle to use ICT purposefully, while those with strong pedagogical competence but limited technological confidence may resist ICT adoption altogether. Challenges commonly reported in Nigerian schools—such as inadequate training, limited ICT resources, and insufficient competence—reflect gaps within the TPACK domains (Adenubi et al., 2025; Oshowole, 2024).

Furthermore, TPACK informs the interpretation of instructional strategies employed by teachers to integrate ICT. Practices such as adapting lesson plans, differentiating instruction, selecting suitable digital tools, and using multimedia resources represent teachers' efforts to balance TCK, TPK, and PCK. Technology integration is also learner-dependent, requiring teachers to account for students' digital literacy, learning styles, and engagement levels—factors explicitly recognised within the TPACK framework as essential for effective technology-supported pedagogy (Gatete, 2025; Tseng et al., 2022). Thus, TPACK offers a coherent theoretical basis for understanding variations in ICT integration among Social Studies teachers.

ICT and Students' Learning Outcomes. Academic performance is commonly conceptualised as the development of students' cognitive, behavioural, and psychosocial abilities across academic and personal domains. Haneef (2024) describes academic achievement as encompassing both scholastic performance and personal development attributes such as communication skills, confidence, punctuality, and social responsibility. Students' motivation and commitment to learning have also been identified as critical determinants of academic success, regardless of socio-economic background (Heystek & Emekako, 2020). The emergence of Information and Communication Technology has transformed traditional notions of teaching and learning by expanding access to information, enhancing communication, and reshaping literacy practices. ICT extends beyond traditional information technology to include communication tools such as messaging systems and online platforms, which play a central role in contemporary learning environments (Samoylenko et al., 2022; Zafar, 2019). Developed countries have increasingly adopted ICT through instructional approaches that emphasise learning about, with, and through technology to strengthen technological competence and innovation (Almerich et al., 2016).

ICT serves multiple roles in education—as a teaching resource, a learning tool, and a critical life skill. Tools such as computers, multimedia devices, and programmable technologies facilitate inquiry, collaboration, and flexible learning opportunities (Al-Samarraie & Saeed, 2018). Research indicates that ICT can increase access to learning resources, improve inquiry-based learning, and transform knowledge

acquisition processes when effectively integrated (Hinostroza et al., 2024; Onyema et al., 2019). In Nigeria, initiatives such as the Universal Basic Education (UBE) programme emphasise continuous teacher training and ICT capacity development as mechanisms for improving instructional quality (Ogunode, 2025). Studies have shown that ICT integration enhances learning efficiency, supports individualised instruction, enables electronic communication, and enriches subject delivery through simulations, digital libraries, and multimedia resources (Munna et al., 2024; Sabri et al., 2024). Digital tools have been associated with improved student engagement and performance, particularly when used for problem-solving, independent inquiry, and multimedia-enhanced instruction (Nugraha & Ade, 2023; Staneviciene & Žekienė, 2025). However, successful ICT integration requires careful planning, sustained institutional support, teacher professional development, and alignment with curricular goals (Albion et al., 2015; Tondeur et al., 2016). Without these conditions, the potential benefits of ICT may not be fully realised.

Teachers' and Students' Perceptions and Challenges in ICT Integration. Teachers' perceptions of ICT play a crucial role in determining how technology is adopted and used in educational settings. Teachers' perspectives encompass their beliefs, attitudes, confidence levels, and perceived barriers regarding ICT use. Clipa et al. (2023) emphasise that teachers' beliefs about the usefulness of ICT, along with their self-efficacy, significantly influence classroom implementation. Similarly, Tondeur et al. (2017) argue that teachers' perceptions are shaped by how they interpret and value technology and its relevance to teaching and learning. Students, as active participants in the learning process, also influence the effectiveness of ICT integration. Educational psychologists stress that learners should not be viewed as passive recipients of knowledge but as dynamic contributors to the learning environment. ICT facilitates this active participation by removing traditional time and space constraints, enabling students to communicate, collaborate, and access information anytime and anywhere (Al-Ansi et al., 2021). Through ICT, students gain access to global knowledge resources and develop skills necessary for participation in collaborative and international learning contexts.

Educational technology research further indicates that ICT enhances students' cognitive development by promoting higher-order thinking, critical reasoning, communication skills, and a deeper understanding of complex concepts. Multimedia and computer-generated simulations allow teachers to demonstrate processes that may be difficult to illustrate through conventional methods (Hong et al., 2025). Teachers also value ICT for its ability to support both independent and collaborative learning environments, thereby improving overall instructional effectiveness (Burns et al., 2014). Empirical evidence suggests that teachers generally hold positive views of ICT, particularly due to its capacity to increase students' motivation through visual and interactive learning aids (Uluyol & Şahin, 2016). ICT-supported communication platforms further enhance students' confidence and communication skills at both local and global levels (Rani, 2023). Despite these advantages, significant challenges continue to hinder ICT integration in many educational contexts, particularly in developing countries. Common challenges include the high cost of ICT equipment, insufficient funding, lack of trained ICT support personnel, unreliable electricity supply, and inadequate teacher training. Additional constraints such as poor internet connectivity, limited maintenance of ICT infrastructure, and weak institutional support further exacerbate the problem (Ntorukiri et al., 2022). Studies conducted in Nigeria consistently report limited availability of ICT facilities in primary and secondary schools, which restricts meaningful technology use in teaching and learning (Abubakar, 2016).

Summary of Literature Review and Research Gap. The reviewed literature demonstrates that ICT has significant potential to enhance teaching and learning, particularly when integrated through appropriate pedagogical strategies and supported by teachers' technological competence. The TPACK framework provides a robust theoretical foundation for understanding the interplay between teachers' knowledge domains and ICT integration practices. While prior studies have examined ICT use, teachers' perceptions, and infrastructural challenges in Nigerian schools, there remains a limited body of research that holistically examines teachers' attitudes, challenges, and classroom strategies within the specific

context of Social Studies instruction at the junior secondary school level. This study seeks to address this gap by providing empirical evidence from Ondo State, Nigeria.

The general purpose of this research is to investigate the assessment of teachers' perception of the use of ICT in teaching and learning of social studies in junior secondary schools in Ondo state. While the specific objectives of the study are to;

1. Examine the teachers' attitudes towards the integration of ICT in social studies instruction in Ondo State secondary schools
2. Identify the challenges encountered by teachers in incorporating ICT tools in teaching and learning social studies in Ondo state secondary schools
3. Examine the strategies employed by educators to optimise the use of technology in the social studies classrooms.

The study will be guided by the following research questions;

1. What are the teachers' attitudes towards the integration of ICT in social studies instruction in Ondo State secondary schools?
2. What are the challenges encountered by teachers in incorporating ICT tools in teaching and learning social studies in Ondo state secondary schools?
3. What are the strategies employed by educators to optimise the use of technology in the social studies classrooms?

The following hypotheses were postulated for the study;

1. There is no significant relationship between teachers' attitudes and the use of ICT in social studies instruction in Ondo State secondary schools
2. There is no significant correlation in strategies employed by social studies educators and the use of ICT in teaching and learning social studies in Ondo State secondary schools.

B. Research Methods

The study adopted a descriptive-correlational survey research design. This design was considered appropriate because it allows for the systematic collection of quantitative data to describe teachers' attitudes, challenges, and classroom strategies regarding ICT integration, as well as to examine the relationships among these variables without manipulating any conditions. The design is suitable for educational research that seeks to understand existing practices and perceptions within a natural school setting. The population of the study comprised all Social Studies teachers teaching at the junior secondary school level in public secondary schools in Ondo State, Nigeria. Junior secondary school teachers were selected because this level provides foundational Social Studies education and represents a critical stage for the integration of ICT-supported instructional practices.

A sample of 200 Social Studies teachers was selected for the study. The sampling process involved a multi-stage sampling technique, carried out as follows: Akure South Local Government Area was purposively selected due to its relatively high concentration of public secondary schools and accessibility for data collection. A list of all public secondary schools offering junior secondary education in Akure South LGA constituted the sampling frame. From this list, twenty (20) public secondary schools were selected using a systematic random sampling technique. From each selected school, ten (10) Social Studies teachers were selected using simple random sampling, resulting in a total sample size of 200 respondents. This procedure ensured adequate representation of Social Studies teachers within the selected study area. Data were collected using a structured questionnaire titled Teachers' ICT Integration Questionnaire (TICTIQ). The instrument was designed to elicit information on teachers' attitudes toward ICT integration, challenges encountered in ICT use, and classroom strategies employed in Social Studies instruction.

The questionnaire consisted of four sections: Section A: Demographic information of respondents. Section B: Teachers' attitudes toward ICT integration. Section C: Challenges encountered in integrating ICT. Section D: Classroom strategies employed for ICT integration. Items in Sections B, C, and D were structured on a four-point Likert scale ranging from Strongly Agree (4) to Strongly Disagree (1). To ensure content and face validity, the questionnaire was subjected to expert review by specialists in Social Studies education, educational technology, and measurement and evaluation. Their comments and suggestions were used to refine item clarity, relevance, and alignment with the study objectives. The

reliability of the instrument was determined through a pilot study conducted among Social Studies teachers outside the sampled schools. Data from the pilot test were analysed using Cronbach's alpha method, yielding reliability coefficients that were considered acceptable for internal consistency. This confirmed that the instrument was reliable for data collection. Permission to conduct the study was obtained from the relevant school authorities. The researcher personally administered the questionnaires to the selected teachers with the assistance of trained research aides. Respondents were adequately briefed on the purpose of the study, and questionnaires were retrieved immediately after completion to ensure a high response rate. Ethical standards were strictly observed throughout the study. Participation was voluntary, and respondents were assured of confidentiality and anonymity. No identifying information was collected, and all responses were used solely for academic purposes. The data collected were analysed using descriptive and inferential statistics. Descriptive statistics such as frequency counts, percentages, means, and standard deviations were used to answer the research questions. Pearson Product-Moment Correlation (PPMC) was used to test the research hypotheses at the 0.05 level of significance. Mean decision benchmarks were interpreted as follows: 3.50–4.00 = Strong Agreement; 2.50–3.49 = Agreement; 1.50–2.49 = Disagreement, and 1.00–1.49 = Strong Disagreement.

C. Results and Discussion

Table 1 presents the demographic characteristics of the respondents who participated in the study. Of the 200 Social Studies teachers surveyed, 112 (56.0%) were female, while 88 (44.0%) were male, indicating a slightly higher representation of female teachers in the sample. With respect to school location, the majority of respondents, 157 teachers (78.5%), were drawn from urban schools, whereas 43 teachers (21.5%) were from rural schools, suggesting a stronger urban representation. In terms of educational qualifications, most respondents held a first degree (B.A./B.Ed./B.Sc.), accounting for 139 teachers (69.5%), while 41 teachers (20.5%) possessed the Nigeria Certificate in Education (NCE). A relatively small proportion of the respondents had postgraduate qualifications, with 17 teachers (8.5%) holding a Master's degree (M.Ed.) and only 3 teachers (1.5%) possessing a Doctorate (PhD). This distribution indicates that advanced academic qualifications were limited among the sampled teachers. Regarding teaching experience, the respondents were generally experienced. The largest group comprised teachers with 6–10 years of teaching experience (26.5%), followed closely by those with 17–25 years (25.0%) and 11–16 years (22.0%) of experience. Teachers with 1–5 years of experience constituted the smallest group (7.0%), while 8.5% of the respondents had 30–35 years of teaching experience. Overall, the demographic profile suggests that the sample consisted largely of experienced Social Studies teachers, which is appropriate for examining attitudes, challenges, and classroom strategies related to ICT integration.

Table 1.Demographic Characteristics of the Respondents (N = 200)

Variable	**Category**	***n***	**%**
Gender	Male	88	44.0
	Female	112	56.0
School location	Urban	157	78.5
	Rural	43	21.5
Highest educational qualification	NCE	41	20.5
	B.A./B.Ed./B.Sc.	139	69.5
	M.Ed.	17	8.5
	PhD	3	1.5
Teaching experience (years)	1–5	14	7.0
	6–10	53	26.5
	11–16	44	22.0
	17–25	50	25.0
	26–30	22	11.0
	30–35	17	8.5

Note. Percentages may not total 100 due to rounding. Data were obtained from a field survey conducted in 2025.

Research Question 1: What are the teachers' attitudes toward the integration of ICT in Social Studies instruction in Ondo State secondary schools?

Table 2.Teachers' Attitudes Toward the Integration of ICT in Social Studies Instruction (N = 200)

Item	SA (%)	A (%)	D (%)	SD (%)	*M*	*SD*
ICT is a valuable tool for increasing students' engagement in Social Studies.	47.5	27.5	15.0	10.0	3.07	1.08
I am motivated to integrate ICT into my Social Studies lessons.	12.0	13.0	49.0	26.0	2.04	0.93
ICT helps improve students' critical thinking in Social Studies.	32.0	38.0	17.5	12.5	3.35	1.01
ICT is an essential element of modern teaching practices.	55.0	35.0	7.0	22.5	3.41	0.78
I am willing to learn new ICT skills to enhance my teaching.	26.5	38.0	20.5	15.0	2.87	1.08
ICT use increases students' motivation to learn Social Studies.	43.5	30.5	16.0	10.0	3.07	1.00
ICT helps address diverse learning needs in Social Studies classrooms.	33.5	32.5	20.5	13.5	2.86	1.03
ICT improves students' comprehension of Social Studies concepts.	17.5	23.0	33.0	26.5	2.21	0.98

Note. SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. Response scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree). Overall mean attitude score = 2.85.

As shown in Table 2, the overall mean attitude score (M = 2.85) indicates that teachers generally demonstrated a positive attitude toward the integration of ICT in Social Studies instruction. This mean falls within the agreement range of the four-point Likert scale, suggesting favourable perceptions among the respondents. The highest mean scores were recorded for items indicating that ICT is an essential component of modern teaching practices (M = 3.41, SD = 0.78) and that ICT enhances students' critical thinking in Social Studies (M = 3.35, SD = 1.01). Teachers also agreed that ICT increases students' engagement (M = 3.07, SD = 1.08) and motivation to learn Social Studies (M = 3.07, SD = 1.00). These findings suggest that respondents largely recognise the instructional value of ICT in enhancing learner participation and higher-order thinking. Moderate levels of agreement were observed for teachers' willingness to learn new ICT skills (M = 2.87, SD = 1.08) and their perception of ICT as a tool for addressing diverse learning needs (M = 2.86, SD = 1.03). This indicates openness to professional growth, though not at a consistently high level. In contrast, lower mean scores were recorded for teachers' self-reported motivation to integrate ICT into their lessons (M = 2.04, SD = 0.93) and their belief that ICT improves students' comprehension of Social Studies concepts (M = 2.21, SD = 0.98). These results suggest areas of concern that may limit effective classroom implementation, particularly in relation to motivation and perceived instructional impact. Overall, the findings indicate that while teachers generally hold positive attitudes toward ICT integration, certain motivational and pedagogical reservations remain, which may influence the extent to which ICT is consistently and effectively used in Social Studies instruction.

Research Question 2: What challenges are encountered by teachers in incorporating ICT tools in the teaching and learning of Social Studies in Ondo State secondary schools?

Table 3. Challenges Encountered by Teachers in Incorporating ICT Tools in Social Studies Instruction (N = 200)

Item	SA (%)	A (%)	D (%)	SD (%)	*M*	*SD*
My school lacks sufficient ICT infrastructure for teaching Social Studies.	34.0	38.0	22.0	16.0	2.90	1.09
I experience poor internet connectivity during ICT-based teaching activities.	37.5	32.5	20.0	10.0	2.98	1.13
Using ICT tools while adhering to the prescribed Social Studies syllabus is difficult.	31.5	38.0	20.5	10.0	3.09	1.01
Managing class time becomes challenging when integrating ICT tools.	38.5	30.5	21.0	10.0	3.07	0.95
I struggle to keep up with new ICT tools and technological innovations.	31.5	43.0	15.5	10.0	3.06	0.89
Managing students' behaviour during ICT-based lessons is challenging.	27.0	36.0	21.5	15.5	2.62	1.10
Some students resist ICT use due to limited familiarity with digital tools.	36.5	38.0	15.5	10.0	3.02	0.71

Note. SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. Response scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree). Overall mean challenge score = 2.95.

As presented in Table 3, the overall mean challenge score (M = 2.95) indicates that teachers experienced a moderate to high level of challenges in integrating ICT into Social Studies instruction. This suggests that although teachers may recognise the value of ICT, several constraints limit its effective classroom implementation. The most prominent challenges reported by the respondents include difficulty aligning ICT use with the prescribed Social Studies syllabus (M = 3.09, SD = 1.01), managing class time during ICT-based lessons (M = 3.07, SD = 0.95), and keeping up with new ICT tools and technological innovations (M = 3.06, SD = 0.89). Teachers also reported challenges related to poor internet connectivity (M = 2.98, SD = 1.13) and students' resistance to ICT use due to limited digital familiarity (M = 3.02, SD = 0.71). Additionally, the lack of sufficient ICT infrastructure in schools was identified as a significant constraint (M = 2.90, SD = 1.09), highlighting the persistent resource limitations within the school environment. In contrast, managing classroom behaviour during ICT-based lessons recorded a comparatively lower mean score (M = 2.62, SD = 1.10), indicating that while classroom management presents some difficulty, it is perceived as a less critical barrier than infrastructural, technological, and curricular challenges. Overall, these findings reveal that teachers face substantial institutional, technological, and pedagogical challenges that may impede the effective and sustained integration of ICT into Social Studies instruction in secondary schools.

Research Question 3: What strategies are employed by educators to optimise the use of technology in Social Studies classrooms?

Table 4. Strategies Employed by Teachers to Optimise the Use of Technology in Social Studies Classrooms (N = 200)

Item	SA (%)	A (%)	D (%)	SD (%)	*M*	*SD*
I incorporate a variety of ICT tools in my Social Studies lesson plans.	26.0	38.0	27.0	16.0	2.90	1.01
I give students clear instructions on how to use ICT tools for learning.	36.0	23.0	17.0	21.0	2.87	0.85
I create an environment that encourages students to explore and experiment with ICT tools.	42.5	32.5	20.0	10.0	3.17	1.07
I adapt ICT-based tasks to suit different learning styles and abilities.	32.0	33.0	27.5	12.5	2.97	1.01
I use ongoing assessment to monitor students' understanding during ICT-based lessons.	30.5	30.0	17.0	22.5	3.13	1.58
I provide feedback and support to help students use ICT effectively.	26.5	38.0	20.5	15.0	2.95	0.87
I utilise online platforms and digital resources in conjunction with traditional materials.	32.0	33.0	22.5	12.5	3.18	1.01
I encourage collaboration through ICT-based group work and projects.	33.5	35.5	21.0	10.0	3.25	1.00

Note. SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. Response scale ranged from 1 (Strongly Disagree) to 4 (Strongly Agree). Overall mean strategy score = 3.03.

Table 4 indicates that the overall mean score (M = 3.03) falls within the agreement range of the Likert scale, suggesting that teachers moderately to highly employ ICT-based strategies in Social Studies classrooms. The strategies with the highest mean ratings include encouraging collaboration through ICT-based group work and projects (M = 3.25, SD = 1.00), using online platforms and digital resources alongside traditional materials (M = 3.18, SD = 1.01), and creating a classroom environment that supports students' exploration and experimentation with ICT tools (M = 3.17, SD = 1.07). Teachers also reported frequent use of ongoing assessment during ICT-based lessons (M = 3.13, SD = 1.58), indicating an effort to monitor students' understanding while technology is in use. Moderate levels of strategy use were observed for adapting ICT-based tasks to accommodate diverse learning styles and abilities (M = 2.97, SD = 1.01), providing feedback and instructional support (M = 2.95, SD = 0.87), and incorporating a variety of ICT tools into lesson plans (M = 2.90, SD = 1.01). The lowest mean score was recorded for giving students clear instructions on the use of ICT tools (M = 2.87, SD = 0.85), suggesting an area where

instructional clarity could be strengthened. Overall, the findings indicate that teachers are actively engaging in a range of ICT-supported instructional strategies, particularly those that promote collaboration, resource integration, and learner engagement. However, the results also suggest the need for improved instructional guidance and structured support to further optimise the use of ICT in Social Studies classrooms.

Research Hypothesis One: There is no significant relationship between teachers' attitudes and the use of ICT in social studies instruction in Ondo State secondary schools.

Table 5. Relationship between Teachers' Attitudes and Use of ICT in Social Studies Instruction in Ondo State Secondary Schools

Variables	Mean ($\bar{x}$)	Std. Dev (SD)	N	r-value	p-value	Decision
Teachers' attitudes toward ICT integration	2.85	1.00	200			
Use of ICT in Social Studies instruction	2.89	0.95	200	0.641	0.001	Significant

Note. r = Pearson product–moment correlation coefficient. Significance level set at α = .05.

Table 5 presents the Pearson product–moment correlation analysis examining the relationship between teachers' attitudes toward ICT integration and their use of ICT in Social Studies instruction. Teachers' attitudes toward ICT integration recorded a mean score of 2.85 (SD = 1.00), while the use of ICT in Social Studies instruction had a mean score of 2.89 (SD = 0.95), indicating moderate to high levels for both variables. The correlation analysis revealed a strong positive relationship between teachers' attitudes toward ICT integration and their use of ICT in Social Studies instruction, r(198) = .641, p = .001. Since the obtained p-value is less than the .05 level of significance, the null hypothesis is rejected. This result indicates that teachers' attitudes toward ICT integration are significantly associated with their level of ICT use in Social Studies instruction. The finding suggests that teachers who hold more positive attitudes toward ICT integration are significantly more likely to utilise ICT tools in their Social Studies teaching. The strength of the correlation (r = .641) indicates that attitude is an important factor influencing ICT adoption in classroom practice. This underscores the role of teachers' perceptions, beliefs, and dispositions toward technology as critical determinants of effective ICT integration in secondary school Social Studies instruction.

Research Hypothesis Two: There is no significant relationship between the strategies employed by Social Studies educators and the use of ICT in teaching and learning Social Studies in Ondo State secondary schools.

Table 6. Relationship Between Instructional Strategies Employed by Social Studies Educators and Use of ICT in Ondo State Secondary Schools

Variables	Mean ($\bar{x}$)	Std. Dev (SD)	N	r-value	p-value	Decision
Strategies employed by educators	3.03	1.04	200			
Use of ICT in Social Studies instruction	2.89	0.95	200	0.589	.000	Significant

Note. r = Pearson product–moment correlation coefficient. Significance level set at α = .05.

As presented in Table 6, the mean score for strategies employed by Social Studies educators was 3.03 (SD = 1.04), while the mean score for the use of ICT in Social Studies instruction was 2.89 (SD = 0.95), indicating moderate to high levels for both variables. The Pearson product–moment correlation analysis revealed a strong positive relationship between the instructional strategies employed by educators and their use of ICT in teaching and learning Social Studies, r(198) = .589, p < .001. Because the obtained p-value is less than the .05 level of significance, the null hypothesis was rejected. This result indicates that there is a statistically significant relationship between the strategies employed by Social Studies educators and the extent of ICT use in instruction. The finding suggests that the instructional strategies adopted by Social Studies educators significantly influence the extent to which ICT is integrated into classroom teaching. Educators who employ diverse, flexible, and learner-centred strategies are more likely to incorporate ICT tools into their instructional practices. This underscores the importance

of effective pedagogical approaches in facilitating meaningful ICT utilisation in Social Studies classrooms.

The findings of this study reveal that Social Studies teachers in junior secondary schools in Ondo State generally hold positive attitudes toward ICT integration, experience moderate to high levels of challenges, and employ a range of ICT-supported instructional strategies to varying degrees. Specifically, teachers acknowledged ICT as an essential component of modern teaching, recognising its role in enhancing students' engagement, motivation, and critical thinking skills. However, despite these favourable perceptions, teachers reported low motivation to actively integrate ICT and expressed reservations regarding its impact on students' comprehension of Social Studies concepts. The study further identified several significant challenges hindering effective ICT integration, including insufficient ICT infrastructure, poor internet connectivity, difficulty aligning ICT use with the prescribed Social Studies syllabus, time management constraints, and challenges in keeping up with emerging technologies. These challenges indicate that teachers' positive attitudes do not automatically translate into consistent classroom practice. In terms of instructional strategies, the findings show that teachers moderately to highly utilise ICT-based approaches such as collaborative group work, the use of online platforms alongside traditional materials, formative assessment during ICT-based lessons, and creating exploratory learning environments. Nonetheless, areas such as providing clear instructional guidance on ICT use and systematically incorporating diverse ICT tools into lesson plans were less strongly emphasised.

The finding that teachers generally possess positive attitudes toward ICT integration is consistent with earlier studies conducted in Nigeria and other developing contexts. For example, Bakare and Olanrewaju (2022) and Uluyol and Şahin (2016) similarly reported that teachers perceive ICT as valuable for enhancing learner engagement and instructional effectiveness. The recognition of ICT as an essential element of modern teaching observed in this study aligns with the assertions of Tondeur et al. (2017), who argued that teachers' beliefs about the relevance of technology strongly influence adoption tendencies. However, the relatively low motivation reported by teachers to integrate ICT actively reflects findings by Ghavifekr et al. (2016) and Abubakar (2016), who noted that positive attitudes alone are insufficient when teachers face structural and pedagogical constraints. This divergence between attitude and motivation underscores the contextual challenges facing Nigerian secondary schools, particularly in public school settings. The challenges identified in this study—such as inadequate infrastructure, unreliable internet connectivity, and difficulty aligning ICT use with curriculum demands—corroborate findings from Joshi and Khatiwada (2024), Salam et al. (2018), and Oshowole (2024). These studies similarly reported that infrastructural deficits and curricular rigidity significantly impede meaningful ICT integration. The difficulty teachers experience in keeping pace with technological innovations also mirrors the observations of Kundu et al. (2020), who linked ICT adoption challenges to gaps in continuous professional development. Regarding instructional strategies, the study's findings align with research by Grant et al. (2022) and Sabri et al. (2024), which emphasised the effectiveness of collaborative, learner-centred, and inquiry-based ICT-supported strategies in Social Studies instruction. The moderate use of adaptive and differentiated ICT strategies observed in this study, however, contrasts with findings from contexts with stronger institutional support, where teachers demonstrate higher levels of strategic ICT integration (Albion et al., 2015). The significant relationships found between teachers' attitudes, instructional strategies, and ICT use strongly support earlier empirical evidence. Nordlöf et al. (2019) and Kale and Goh (2014) similarly reported that teachers with positive attitudes and flexible pedagogical approaches are more likely to integrate ICT effectively. The strength of the correlations in this study further reinforces the central role of teacher-related factors in ICT adoption.

The results of this study signify that ICT integration in Social Studies instruction is not merely a function of access to technology but is deeply embedded in teachers' attitudes, pedagogical choices, and institutional contexts. While teachers in Ondo State recognise the pedagogical value of ICT, their limited motivation and perceived instructional impact suggest a disconnect between policy expectations and classroom realities. From a broader perspective, these findings reflect a systemic issue common in many developing educational systems, where ICT policies emphasise adoption without sufficiently addressing implementation conditions. The persistence of infrastructural challenges and curricular constraints indicates that ICT integration remains largely additive rather than transformative, aligning with concerns raised by Tondeur et al. (2016). Within the framework of TPACK, the findings suggest that while teachers may possess basic technological awareness (TK) and pedagogical knowledge (PK), gaps remain in their ability to integrate technology meaningfully with Social Studies content (TPACK). At a societal level, the limited effectiveness of ICT integration in Social Studies has implications for civic education outcomes. Social Studies plays a critical role in preparing students for responsible citizenship, and inadequate use of ICT may limit opportunities for inquiry-based learning, digital civic engagement, and

critical social analysis. Thus, the study highlights how broader educational and technological inequities can shape classroom practices and learning outcomes.

The findings of this study have important implications for educational policy, teacher professional development, and classroom practice. First, education policymakers should prioritise improving ICT infrastructure, including reliable electricity supply, internet connectivity, and access to functional digital tools, particularly in public secondary schools. Without addressing these foundational issues, efforts to promote ICT integration are unlikely to yield sustained impact. Second, the significant relationship between teachers' attitudes and ICT use underscores the need for targeted professional development programmes that go beyond basic ICT skills. Training initiatives should focus on developing teachers' confidence, motivation, and TPACK competencies, with specific emphasis on integrating ICT into Social Studies pedagogy and curriculum objectives. Third, curriculum developers and education authorities should consider greater flexibility in the Social Studies syllabus to accommodate ICT-supported inquiry, collaborative projects, and digital resources. Aligning curricular expectations with ICT-based instructional strategies would reduce the tension teachers experience between syllabus coverage and technology use. Finally, at the classroom level, teachers should be encouraged and supported to adopt more structured ICT integration strategies, including clear instructional guidance, differentiated ICT-based tasks, and reflective assessment practices. Such approaches would enhance students' comprehension and maximise the instructional benefits of ICT in Social Studies education. In sum, this study demonstrates that effective ICT integration in junior secondary Social Studies classrooms requires a holistic approach that addresses teachers' attitudes, pedagogical strategies, and systemic constraints simultaneously.

D. Conclusion

This study examined the integration of Information and Communication Technology (ICT) in Social Studies instruction at the junior secondary school level in Ondo State, Nigeria, focusing on teachers' attitudes, challenges, instructional strategies, and their relationship with ICT use. The findings revealed that Social Studies teachers generally hold positive attitudes toward ICT integration, recognizing its relevance for modern teaching, student engagement, and the development of critical thinking skills. However, teachers' motivation to actively integrate ICT and their confidence in its impact on students' comprehension remain relatively low, indicating a gap between perceived value and practical classroom application. The study also identified significant challenges, including inadequate ICT infrastructure, poor internet connectivity, time constraints, and difficulty in aligning ICT use with the prescribed Social Studies syllabus.

E. Recommendations

Based on the findings, it is recommended that educational policies and teacher professional development programs focus on providing adequate training for teachers on the effective integration of ICT in Social Studies instruction. Strengthening institutional support and improving ICT infrastructure in schools is also essential to address the existing challenges. Furthermore, future research should employ mixed-methods or experimental designs that include classroom observations, interviews, and measurements of student learning outcomes to explore the real impact of ICT on student achievement. Longitudinal studies could offer valuable insights into how teachers' attitudes, competencies, and instructional strategies regarding ICT evolve over time. Such research efforts would contribute to a stronger evidence base for enhancing ICT integration and improving the quality of Social Studies education in Nigerian secondary schools.

F. Author Contribution Statement

This research is the result of a collaborative effort among the authors, each contributing to various aspects of the study. Oluwatoyin Olusegun OLOWO was responsible for formulating the research background, identifying the research problem, and coordinating the data collection process. Taofeek Oladimeji KATAYE contributed to the design and development of the research methodology, including creating the questionnaire for data collection. Both authors played key roles in analyzing the data and interpreting the results, particularly focusing on the role of ICT integration in Social Studies instruction. All authors provided valuable insights during the writing and editing of the manuscript. Each author played an integral role in the research process, ensuring a systematic approach and contributing to the high-quality findings presented in the study.

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