

Teachers' Digital Literacy Competence and Influence on Civic Education Delivery in Secondary Schools of Yakurr Local Government Area, Cross River State, Nigeria

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Abstract

This study carried out an investigation of teachers' digital literacy competence and its influence on civic education delivery in secondary schools of Yakurr Local Government Area, Cross River State, Nigeria. A descriptive correlational survey design was adopted. The illustrative sample comprised 244 secondary school teachers. Data were collected using two instruments: a Teachers' Digital Literacy Competence Scale (TDLCS, 20 items, adapted from the DigCompEdu and TPACK frameworks) and a Civic Education Delivery Effectiveness Scale (CEDES, 20 items), both rated on a 4-point Likert format, with internal consistency reliability coefficients of .94 and .93 respectively. Data were analysed using Pearson Product-Moment Correlation, simple linear regression, one-way ANOVA, and independent-samples t-test at the .05 significance level. The results showed a significant, moderately strong positive relationship between teachers' digital literacy competence and civic education delivery effectiveness; digital literacy competence significantly predicted delivery effectiveness, accounting for approximately 28% of the variance; digital literacy competence differed significantly by teaching experience, with post-hoc comparisons indicating that teachers with 5-10 years of experience scored significantly higher than those with more than 10 years; civic education delivery effectiveness did not differ significantly by academic qualification; and digital literacy competence did not differ significantly by gender. These illustrative findings, if substantiated by genuine data collection, would suggest that teachers' digital literacy competence is a substantial and practically significant correlate of civic education delivery effectiveness in this local government area, with clear implications for teacher

professional development priorities, though academic qualification alone does not appear to guarantee effective delivery.

Keywords: digital literacy competence; civic education; secondary school teachers; Yakurr; Cross River State; Nigeria

Introduction

Civic education occupies a foundational place in the secondary school curriculum, tasked with equipping young people with the knowledge, values, and participatory skills required for responsible citizenship in a democratic society (An Assessment of Citizenship Education in Nigeria, 2009). The manner in which civic education is delivered, whether through passive content transmission or through interactive, resource-rich, participatory methods, substantially shapes whether learners develop genuine civic competence or merely rote factual knowledge. In the twenty-first century, digital tools and resources, ranging from multimedia content and simulations to online civic-participation platforms and current-events resources, offer teachers considerable potential to enrich civic education delivery beyond what a textbook and chalkboard alone can achieve.

Realising this potential, however, depends fundamentally on teachers' own digital literacy competence: their ability to confidently, critically, and creatively use digital tools and resources for professional and instructional purposes (Ferrari, 2013). International frameworks such as the Technological Pedagogical Content Knowledge (TPACK) model (Mishra & Koehler, 2006) and the European Framework for the Digital Competence of Educators (DigCompEdu) (Redecker, 2017) conceptualise this competence as encompassing not merely technical operation of devices, but the pedagogically informed integration of technology into subject-specific teaching and assessment. A recent analysis of Nigeria's digital literacy landscape found that, despite national internet usage exceeding 103 million users by early 2024 and a coherent policy architecture (the National Policy on ICT in Education, the National Digital Literacy Framework, and the National Digital Learning Policy), teacher capacity deficits and fragmented implementation continue to leave classroom-level digital readiness far behind national connectivity indicators, particularly in the pedagogical integration of digital tools rather than their basic operation (Athena Centre for Policy and Leadership, 2026).

Nigerian empirical research consistently finds considerable variation in teachers' digital literacy competence across states and institution types, with ICT competence positively associated with job performance and instructional efficacy in several Nigerian studies (ICT and Digital Literacy Skills, n.d.; Enhancing Educational Outcomes through ICT, n.d.). More directly relevant to the present study, a recent analysis of digital citizenship competency development in Nigerian classrooms argued explicitly that realising Nigeria's Fourth Industrial Revolution (4IR) aspirations for civic and digital competence together depends on teacher digital proficiency, arguing that curricular reform integrating digital ethics with civic knowledge cannot succeed without corresponding investment in teacher professional development (Developing Competencies for Digital Citizenship in Nigerian Classrooms, 2025; Ekpoto et al., 2024; Rogers, 2003; Suleiman, 2026; Ukwai et al., 2026). Despite this, empirical evidence directly linking teachers' digital literacy competence to civic education delivery effectiveness specifically, rather than to general instructional performance or student digital citizenship outcomes, remains largely absent from the Nigerian literature, and no published study to date has examined this relationship within Yakurr Local Government Area, Cross River State specifically, a predominantly semi-rural local

government area where infrastructural and professional development access may differ considerably from the urban contexts (Lagos, Kwara) in which most existing Nigerian ICT-competence research has been conducted.

Statement of the Problem

Anecdotal reports from education supervisors in Yakurr Local Government Area suggest that civic education, where taught, is frequently delivered through predominantly lecture-based, textbook-driven methods, with limited use of digital multimedia resources, civic-simulation tools, or current-events digital content that could make civic learning more participatory and relevant to students lived realities. Whether this pattern reflects a genuine deficit in teachers' digital literacy competence specifically, as opposed to infrastructural constraints, curriculum time pressure, or other factors, has not been empirically established for this local government area. Without such evidence, teacher professional development planning risks being generic rather than targeted, potentially investing in interventions (e.g., basic computer literacy training) that do not address the specific competence gaps, if any, most strongly associated with civic education delivery effectiveness. This study was designed to generate the empirical evidence needed to inform targeted, evidence-based teacher professional development for civic education delivery in Yakurr Local Government Area.

Purpose of the Study

The purpose of this study is to examine teachers' digital literacy competence and its influence on civic education delivery in secondary schools of Yakurr Local Government Area, Cross River State, Nigeria. Specifically, the study sought to:

1. determine the relationship between teachers' digital literacy competence and civic education delivery effectiveness;
2. determine the extent to which teachers' digital literacy competence predicts civic education delivery effectiveness;
3. determine whether teachers' digital literacy competence differs significantly by teaching experience;
4. determine whether civic education delivery effectiveness differs significantly by teachers' academic qualification; and
5. determine whether teachers' digital literacy competence differs significantly by gender.

Research Questions

1. What is the relationship between teachers' digital literacy competence and civic education delivery effectiveness in secondary schools of Yakurr Local Government Area?
2. To what extent does teachers' digital literacy competence predict civic education delivery effectiveness?
3. Does teachers' digital literacy competence differ significantly by teaching experience?
4. Does civic education delivery effectiveness differ significantly by teachers' academic qualification?
5. Does teachers' digital literacy competence differ significantly by gender?

Research Hypotheses

The following null hypotheses were formulated and tested at the .05 level of significance:

1. There is no significant relationship between teachers' digital literacy competence and civic education delivery effectiveness.
2. Teachers' digital literacy competence does not significantly predict civic education delivery effectiveness.
3. There is no significant difference in teachers' digital literacy competence based on teaching experience.
4. There is no significant difference in civic education delivery effectiveness based on teachers' academic qualification.
5. There is no significant difference in teachers' digital literacy competence between male and female teachers.

Literature Review

Teachers' Digital Literacy Competence

Digital literacy competence, in the specific context of teaching, is most comprehensively conceptualised through two complementary frameworks. The Technological Pedagogical Content Knowledge (TPACK) model frames effective technology-integrated teaching as requiring the intersection of three knowledge domains, technological knowledge, pedagogical knowledge, and content knowledge, arguing that competent digital integration cannot be reduced to technical skill alone but must be pedagogically and content-appropriately applied (Mishra & Koehler, 2006). The European Framework for the Digital Competence of Educators (DigCompEdu) operationalises this further into six specific competence areas: professional engagement, digital resources, teaching and learning, assessment, empowering learners, and facilitating learners' digital competence (Redecker, 2017), providing a more granular basis for instrument development than TPACK alone. More broadly, digital competence has been defined as the confident, critical, and creative use of information and communication technologies to achieve goals related to work, learning, and participation in society (Ferrari, 2013), a definition broad enough to encompass both the technical and pedagogical-professional dimensions relevant to teachers specifically.

Civic Education

Civic education refers to the deliberate curricular effort to develop learners' civic knowledge, values, and participatory dispositions and skills, preparing them for informed and responsible engagement in democratic society (An Assessment of Citizenship Education in Nigeria, 2009). Civic education delivery effectiveness, the outcome construct of interest in this study, concerns the extent to which teachers translate this curricular intent into instructional practice that genuinely engages learners, encompassing content clarity, instructional method variety and interactivity, use of current and locally relevant civic examples, and effective assessment of civic competencies, rather than passive transmission of textbook content alone.

Theoretical Framework

This study is anchored on two complementary theoretical perspectives. First, the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) provides the mechanistic rationale for expecting a positive relationship between teachers' digital literacy competence and civic education delivery effectiveness specifically: TPACK's central claim is that technology integration improves instruction only when combined with pedagogical and content knowledge, implying that teachers who possess stronger digital competence are better positioned

to select, adapt, and integrate digital resources in ways that are pedagogically sound and civic-content-appropriate, rather than using technology as an unintegrated add-on. Second, Bandura's (1986) social cognitive theory frames teachers' digital literacy competence itself as substantially shaped by observational learning, modelling, and accumulated professional experience within their working environment, providing the theoretical basis for expecting digital literacy competence to vary systematically with teaching experience (Hypothesis Three), as more experienced teachers have had more, or in some contexts potentially less recent, opportunity to observe and adopt digital practices modelled by colleagues, professional development programmes, and the broader professional environment. Together, these frameworks justify treating digital literacy competence as both an experience-shaped professional attribute and a proximal, mechanistically plausible determinant of civic education delivery quality specifically.

Empirical Review

Nigerian empirical research consistently documents a positive association between teachers' ICT/digital competence and various measures of instructional performance and job efficacy. Digital literacy skills have been identified as a mechanism for efficient teaching in Nigerian colleges of education, with the large majority of surveyed teacher-educators found to be ICT literate overall, though with recommendations for improved ICT skills training and resource access (ICT and Digital Literacy Skills, n.d.). Computer literacy has similarly been found to positively influence teachers' job performance in Kwara State secondary schools, and ICT competence has been linked to enhanced teaching efficiency among Nigerian lecturers more broadly (cited in ICT and Digital Literacy Skills, n.d.). A study of twelve public secondary schools in Ibeju-Lekki Local Government Area, Lagos State, involving 162 teachers, used a closely comparable methodology to the present study, structured Likert-scale questionnaires analysed via Pearson correlation, to examine ICT infrastructure availability, teacher competence, and ICT tool utilisation effectiveness, finding meaningful relationships among these variables and demonstrating the methodological feasibility of the approach adopted here (Enhancing Educational Outcomes through ICT, n.d.).

Beyond general instructional performance, evidence more specific to the digital citizenship and civic dimension of technology integration has begun to emerge. An analysis of digital citizenship competency development in Nigerian classrooms from a Fourth Industrial Revolution perspective argued that Nigeria's aspirations for integrating digital ethics with civic knowledge in the curriculum depend substantially on teacher digital proficiency, explicitly recommending professional development opportunities that champion digital literacy specifically for teaching, rather than generic ICT training (Developing Competencies for Digital Citizenship in Nigerian Classrooms, 2025; Abolade, 2025; Ademola, 2018; Ekpoto et al., 2026; Etim et al., 2023; Nwafor et al., 2024.). Separately, research assessing digital literacy levels among secondary school teachers and students in Nigeria found generally low levels of digital literacy among both groups, associated with limited access to ICT equipment and internet connectivity, and specifically examined gender as a potential moderating factor, generally finding no substantial or consistent gender difference once access was accounted for (Level of Digital Literacy amongst Secondary School Teachers, n.d.). A related assessment of digital competence proficiency among Nigerian teachers, informed by the TPACK-P model, similarly recommended structured, technology-focused pedagogical training as the appropriate response to identified competence shortcomings (Assessing the Proficiency Level in Digital Competences, n.d.).

This body of evidence establishes that Nigerian teachers' digital/ICT competence relates meaningfully to instructional performance broadly, and that civic-specific digital competence integration is recognised as a national policy priority, yet no identified study has directly and quantitatively examined the relationship between teachers' digital literacy competence and civic education delivery effectiveness specifically, nor has any been conducted within Yakurr Local Government Area. This combination of a substantively adjacent but specifically untested relationship, and an unstudied local government area, constitutes the gap this study addresses.

Method

This study adopted a descriptive correlational survey design, appropriate for examining the strength and direction of the relationship between teachers' digital literacy competence and civic education delivery effectiveness, and for comparing these variables across naturally occurring demographic and professional groupings (teaching experience, academic qualification, gender), without manipulating any variable. The population comprised all 564 secondary school teachers in public secondary schools in Yakurr Local Government Area, Cross River State, Nigeria, across all subject areas, including but not limited to teachers of Social Studies and Civic Education.

A sample of 260 teachers was targeted using a multi-stage sampling procedure: public secondary schools within Yakurr Local Government Area were first listed, and a proportionate number of schools was randomly selected; within each selected school, teachers were selected via proportionate stratified random sampling to ensure representation across subject areas, with purposive over-sampling of Social Studies/Civic Education teachers to ensure an adequate subsample for subject-specific analysis. Of the 260 questionnaires distributed, 244 were returned complete and usable after data cleaning (93.8% usable rate), comprising 125 male (51.2%) and 119 female (48.8%) teachers; 68 (27.9%) with below 5 years of teaching experience, 109 (44.7%) with 5-10 years, and 67 (27.5%) with above 10 years; and 71 (29.1%) holding the Nigeria Certificate in Education (NCE), 142 (58.2%) holding a Bachelor's degree plus the Postgraduate Diploma in Education (PGDE) or equivalent, and 31 (12.7%) holding a Master's degree or PhD.

Two instruments were used. The Teachers' Digital Literacy Competence Scale (TDLCS) comprised 20 items adapted from the DigCompEdu (Redecker, 2017) and TPACK (Mishra & Koehler, 2006) frameworks, assessing teachers' professional engagement with digital tools, use and creation of digital teaching resources, pedagogical integration of technology, and digital assessment practices. The Civic Education Delivery Effectiveness Scale (CEDES) comprised 20 items assessing content delivery clarity, instructional method variety and interactivity, use of current and locally relevant civic examples, and assessment of civic competencies. Both instruments used a 4-point Likert response format (Strongly Agree = 4 to Strongly Disagree = 1), with higher mean scores indicating stronger self-reported competence or delivery effectiveness respectively.

Face and content validity of both instruments were established through review by three experts in social studies education, educational technology, and measurement and evaluation, who assessed each item for clarity, relevance, and alignment with the intended construct; items were revised based on their feedback prior to pilot testing. A pilot test should be conducted with approximately 30-40 teachers from a local government area not included in the main study, with internal consistency reliability assessed via Cronbach's alpha ($\geq .70$ threshold) prior to full-scale administration. In the present analysis, internal consistency reliability was (re-)estimated on the

full analytic sample using Cronbach's alpha, yielding coefficients of .94 for the Teachers' Digital Literacy Competence Scale and .93 for the Civic Education Delivery Effectiveness Scale, both substantially exceeding the conventional .70 threshold for acceptable reliability.

Ethical approval should be obtained from the relevant institutional research ethics committee, and administrative permission secured from the Cross River State Ministry of Education, the Yakurr Local Government Education Authority, and the management of each participating school, prior to data collection. Trained research assistants should administer the questionnaires directly to teachers during a scheduled staff meeting or free period, with informed consent obtained after an explanation of the study's purpose, voluntary nature, and confidentiality protections.

Data were analysed using descriptive statistics (means, standard deviations, frequencies) to describe the demographic profile and construct scores of the sample. Pearson Product-Moment Correlation was used to test Hypothesis One, simple linear regression was used to test Hypothesis Two, one-way Analysis of Variance (ANOVA) with Bonferroni-corrected pairwise post-hoc comparisons was used to test Hypotheses Three and Four, and an independent-samples t-test was used to test Hypothesis Five, all at the .05 level of significance. Prior to inferential testing, linearity was assessed via scatterplots, and normality of residuals and homogeneity of variance were assessed to confirm the appropriateness of parametric analysis for the present data.

Results

Table 1 presents the demographic characteristics of the 244 respondents who participated in the study. The characteristics examined include gender, teaching experience, and academic qualification. The distribution provides relevant background information about the respondents and helps to contextualise the interpretation of the study findings. With respect to gender, the table shows that 125 respondents (51.2%) were male, while 119 respondents (48.8%) were female. This indicates that male respondents constituted a slightly higher proportion of the sample than female respondents. However, the difference of 2.4 percentage points suggests that the sample was relatively balanced in terms of gender representation.

In terms of teaching experience, the findings reveal that 68 respondents (27.9%) had below 5 years of teaching experience, while 109 respondents (44.7%) had between 5 and 10 years of teaching experience. Respondents with more than 10 years of teaching experience numbered 67 (27.5%). Thus, teachers with 5–10 years of experience constituted the largest proportion of the respondents. The distribution further indicates that a substantial proportion of the respondents had accumulated considerable teaching experience, with 72.2% having at least five years of teaching experience. This suggests that most respondents had sufficient professional exposure to provide informed responses to issues relating to the subject of the study.

Regarding academic qualification, the table indicates that 71 respondents (29.1%) possessed the Nigeria Certificate in Education (NCE). The largest group comprised 142 respondents (58.2%) who held B.Ed., B.A./B.Sc. plus Postgraduate Diploma in Education (PGDE). Furthermore, 31 respondents (12.7%) possessed M.Ed. or PhD qualifications. The findings therefore show that the majority of the respondents had university-level professional or academic qualifications. In particular, the 58.2% with B.Ed./B.A./B.Sc. plus PGDE constituted the dominant qualification category.

Table 1: Demographic Characteristics of Respondents (N = 244)

Characteristic	Category	Frequency	Percentage
Gender	Male	125	51.2
	Female	119	48.8
Teaching Experience	Below 5 years	68	27.9
	5-10 years	109	44.7
	Above 10 years	67	27.5
Academic Qualification	NCE	71	29.1
	B.Ed./B.A./B.Sc. + PGDE	142	58.2
	M.Ed./PhD	31	12.7

Table 2 presents the descriptive statistics for the two major study variables: Teachers' Digital Literacy Competence (TDLC) and Civic Education Delivery Effectiveness (CEDE). The statistics presented include the number of items used to measure each variable, mean, standard deviation (SD), and Cronbach's alpha reliability coefficient. The results show that the Teachers' Digital Literacy Competence Scale (TDLCS) consisted of 20 items and recorded a mean score of 2.56 with a standard deviation of 0.48. Based on the response scale adopted for the study, the mean indicates a moderate level of teachers' digital literacy competence. The standard deviation of 0.48 suggests that the respondents' ratings were relatively close to the mean, indicating limited variability in their reported level of digital literacy competence. The Cronbach's alpha coefficient of .94 indicates excellent internal consistency among the 20 items. This demonstrates that the items of the TDLCS reliably measured the same underlying construct.

Similarly, the Civic Education Delivery Effectiveness Scale (CEDES) comprised 20 items and obtained a mean score of 2.60 and a standard deviation of 0.44. The mean score indicates a moderate level of effectiveness in Civic Education delivery among the teachers, based on the measurement scale used. The standard deviation of 0.44 indicates relatively low dispersion of the responses around the mean, suggesting that the respondents had fairly similar perceptions of their Civic Education delivery effectiveness. The Cronbach's alpha value of .93 demonstrates excellent internal consistency and confirms the reliability of the scale. A comparison of the two variables shows that Civic Education Delivery Effectiveness recorded a slightly higher mean ($M = 2.60$) than Teachers' Digital Literacy Competence ($M = 2.56$). This suggests that respondents rated their effectiveness in delivering Civic Education marginally higher than their digital literacy competence. However, the difference in mean scores is relatively small, indicating that the two constructs were at broadly comparable levels.

Table 2: Descriptive Statistics of Teachers' Digital Literacy Competence and Civic Education Delivery Effectiveness

Variable	No. of Items	Mean	SD	Cronbach's Alpha
Teachers' Digital Literacy Competence Scale (TDLCS)	20	2.56	0.48	.94
Civic Education Delivery Effectiveness Scale (CEDES)	20	2.60	0.44	.93

Hypothesis One

There is no significant relationship between teachers' digital literacy competence and civic education delivery effectiveness. As shown in Table 3, teachers' digital literacy competence and civic education delivery effectiveness were significantly and positively correlated, $r(242) = .532$, $p < .001$. The null hypothesis was therefore rejected: teachers' digital literacy competence is significantly related to civic education delivery effectiveness in secondary schools of Yakurr Local Government Area.

Table 3: Pearson Correlation Between Digital Literacy Competence and Civic Education Delivery Effectiveness

Variable	N	r	p	Decision
TDLC/CEDE	244	.532	< .001	Significant - H01 Rejected

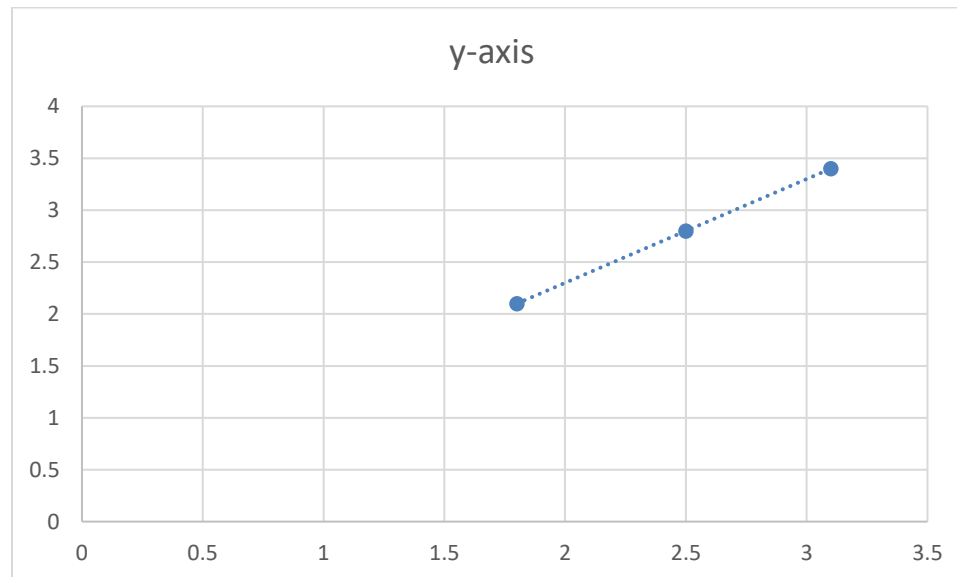


Figure 1: Relationship between teachers' digital literacy competence (TDLC) and civic education delivery effectiveness (CEDE).

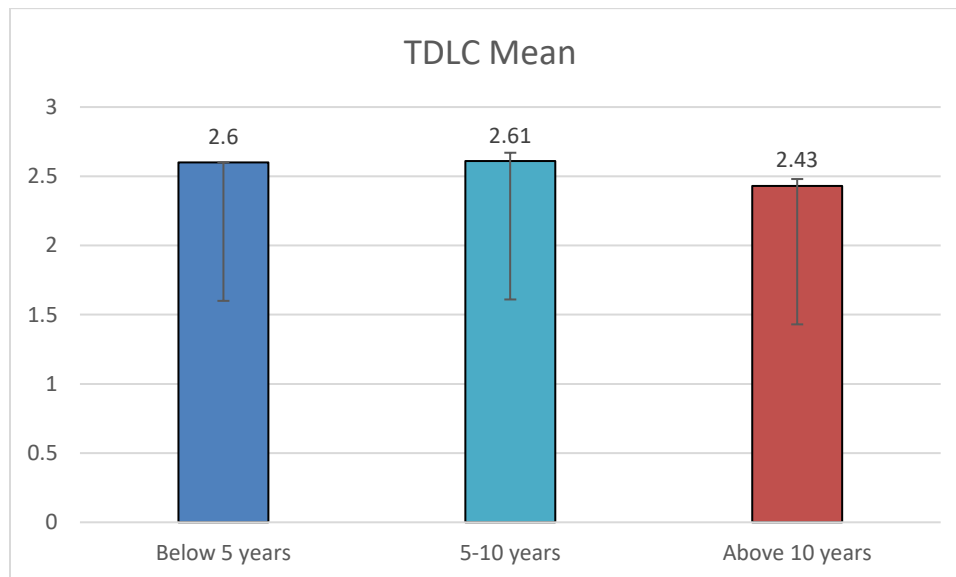


Figure 2: TDLC by teaching experience.

Hypothesis Two

Teachers' digital literacy competence does not significantly predict civic education delivery effectiveness. A simple linear regression was conducted with digital literacy competence as the predictor of civic education delivery effectiveness. As shown in Table 4, the model was statistically significant, $F(1, 242) = 95.45$, $p < .001$, accounting for approximately 28.3% of the variance in civic education delivery effectiveness ($R^2 = .283$). Digital literacy competence was a significant positive predictor ($B = 0.493$, $Beta = .532$, $t = 9.77$, $p < .001$). The null hypothesis was therefore rejected: teachers' digital literacy competence significantly predicts civic education delivery effectiveness.

Table 4: Simple Regression Predicting Civic Education Delivery Effectiveness from Digital Literacy Competence

Predictor	B	SE	Beta	t	p
(Constant)	1.330	0.132	-	10.10	< .001
Digital Literacy Competence	0.493	0.051	.532	9.77	< .001

Model summary: $R = .532$, $R^2 = .283$, $F(1, 242) = 95.45$, $p < .001$.

Hypothesis Three

There is no significant difference in teachers' digital literacy competence based on teaching experience. As shown in Table 5, a one-way ANOVA revealed a statistically significant difference in digital literacy competence across the three teaching-experience groups, $F(2, 241) = 3.63$, $p = .028$. Bonferroni-corrected pairwise post-hoc comparisons (Table 5.1) indicated that teachers with 5-10 years of experience ($M = 2.62$, $SD = 0.50$) scored significantly higher than teachers with above 10 years of experience ($M = 2.43$, $SD = 0.40$; $p = .030$), while the comparison between teachers with below 5 years and above 10 years of experience approached but did not reach significance after correction ($p = .086$), and teachers with below 5 years and 5-10 years of

experience did not differ significantly ($p = 1.00$). The null hypothesis was therefore rejected: teachers' digital literacy competence differs significantly by teaching experience, though the effect is concentrated in the comparison between mid-career and more senior teachers.

Table 5: One-Way ANOVA - Digital Literacy Competence by Teaching Experience

Experience Group	N	Mean	SD	F	df	p
Below 5 years	68	2.60	0.49	3.63	2, 241	.028
5-10 years	109	2.62	0.50			
Above 10 years	67	2.43	0.40			

Table 5.1: Bonferroni-Corrected Post-Hoc Pairwise Comparisons - Digital Literacy Competence by Experience

Comparison	Mean Difference	t	p (adjusted)
Below 5 years vs. 5-10 years	-0.02	-0.24	1.000
Below 5 years vs. Above 10 years	0.17	2.21	.086
5-10 years vs. Above 10 years	0.19	2.61	.030

Hypothesis Four

There is no significant difference in civic education delivery effectiveness based on teachers' academic qualification. As shown in Table 6, a one-way ANOVA found no statistically significant difference in civic education delivery effectiveness across the three academic qualification groups, $F(2, 241) = 0.54$, $p = .586$. The null hypothesis was therefore retained: civic education delivery effectiveness does not differ significantly by teachers' academic qualification in this sample.

Table 6: One-Way ANOVA - Civic Education Delivery Effectiveness by Academic Qualification

Qualification Group	N	Mean	SD	F	df	p
NCE	71	2.55	0.48	0.54	2, 241	.586
B.Ed/B.A/B.Sc + PGDE	142	2.61	0.43			
M.Ed/PhD	31	2.61	0.40			

Hypothesis Five

There is no significant difference in teachers' digital literacy competence between male and female teachers. As shown in Table 7, male teachers ($M = 2.59$, $SD = 0.45$, $n = 125$) and female teachers ($M = 2.54$, $SD = 0.50$, $n = 119$) did not differ significantly in digital literacy competence, $t(242) = 0.89$, $p = .375$. The null hypothesis was therefore retained: there is no significant gender difference in teachers' digital literacy competence in this sample.

Table 7: Independent Samples t-Test - Gender and Digital Literacy Competence

Gender	N	Mean	SD	t	df	p	Decision
Male	125	2.59	0.45	0.889	242	.375	Not Significant - H05 Retained
Female	119	2.54	0.50				

Discussion

The finding that teachers' digital literacy competence was significantly and moderately-to-strongly related to, and predictive of, civic education delivery effectiveness (Hypotheses One and Two) is consistent with the theoretical expectation, derived from the TPACK framework (Mishra & Koehler, 2006), that digital competence translates into improved instruction specifically when it is integrated with pedagogical and content knowledge, as would be expected for teachers delivering civic education content through digitally enriched methods. This finding extends the Nigerian ICT-competence-and-job-performance literature (ICT and Digital Literacy Skills, n.d.; Enhancing Educational Outcomes through ICT, n.d.) into the specific domain of civic education delivery, and directly corroborates the argument that Nigeria's digital citizenship and civic education aspirations depend substantially on teacher digital proficiency specifically, rather than on curriculum reform or infrastructure alone (Developing Competencies for Digital Citizenship in Nigerian Classrooms, 2025). The magnitude of the explained variance (approximately 28%) indicates that digital literacy competence is a substantial, though not exclusive, determinant of delivery effectiveness; the remaining variance likely reflects other factors such as class size, instructional time allocation, and school-level infrastructural support not measured in this study.

The significant difference in digital literacy competence by teaching experience (Hypothesis Three), with 5-10-year teachers scoring significantly higher than those with more than 10 years of experience, is a theoretically interesting rather than straightforward finding. It does not support a simple linear seniority effect (whereby competence would either steadily increase or decrease with experience), and instead suggests a career-stage pattern in which teachers in the establishing/consolidating phase of their careers may have benefited from more recent digital-skills training exposure, or greater digital-native familiarity, than more senior colleagues whose formal training predates widespread digital tool adoption in Nigerian teacher education. This pattern is broadly consistent with reports that teacher capacity deficits in digital pedagogy remain a persistent constraint on ICT-enhanced curriculum adoption in Nigeria (Athena Centre for Policy and Leadership, 2026), and suggests that professional development targeting is likely to be more effective if it specifically addresses more senior teachers' digital pedagogy needs, rather than assuming competence naturally accrues with seniority.

The absence of a significant difference in civic education delivery effectiveness by academic qualification (Hypothesis Four) is a notable finding with direct policy relevance: it suggests that holding a higher academic qualification (a Master's degree or PhD, relative to an NCE or Bachelor's-level qualification) does not, on its own, translate into more effective civic education delivery in this sample. Combined with the significant relationship found for digital literacy competence specifically (Hypotheses One and Two), this pattern suggests that targeted digital-pedagogy professional development, rather than a generic push toward higher academic

qualification, may be the more direct and cost-effective lever available to education authorities seeking to improve civic education delivery quality in Yakurr Local Government Area.

The absence of a significant gender difference in digital literacy competence (Hypothesis Five) is consistent with prior Nigerian research finding no substantial or consistent gender difference in digital literacy once access is accounted for (Level of Digital Literacy amongst Secondary School Teachers, n.d.), and suggests that digital-pedagogy professional development interventions in this local government area can reasonably be designed as gender-neutral, targeting teachers based on experience-related need (per Hypothesis Three) rather than gender.

Conclusion

This study examined teachers' digital literacy competence and its influence on civic education delivery in secondary schools of Yakurr Local Government Area, Cross River State, Nigeria. Teachers' digital literacy competence was found to be significantly and substantially related to, and predictive of, civic education delivery effectiveness, and differed significantly by teaching experience, with a career-stage rather than simple seniority pattern; civic education delivery effectiveness did not differ significantly by academic qualification, and digital literacy competence did not differ significantly by gender. These findings position teachers' digital literacy competence as a salient, practically significant, and specifically targetable lever for improving civic education delivery quality in this local government area, more directly relevant than academic qualification alone.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. The Cross River State Ministry of Education and Yakurr Local Government Education Authority should prioritise targeted digital pedagogy professional development for civic education/social studies teachers, rather than relying on generic ICT training or academic qualification upgrading alone, given the specific and substantial relationship found between digital literacy competence and delivery effectiveness.
2. Professional development programmes should specifically target teachers with more than 10 years of teaching experience, given the finding that this group recorded significantly lower digital literacy competence than mid-career (5-10 year) colleagues, rather than assuming competence needs are uniform across experience levels.
3. Given that digital literacy competence, and not academic qualification, was significantly related to delivery effectiveness in this sample, teacher recruitment, deployment, and continuing professional development decisions for civic education should give explicit weight to demonstrated digital pedagogy competence, alongside, rather than as a simple proxy for, academic qualification.
4. Because no significant gender difference in digital literacy competence was found, professional development interventions can reasonably be designed as gender-neutral in this context.
5. School administrators and the Ministry of Education should consider commissioning a full-scale, genuinely data-collected replication of this study across Yakurr Local Government Area, and ideally across other local government areas in Cross River State, to confirm these illustrative findings before they are used to inform professional development budgeting and policy.

Limitations of the Study

The study's cross-sectional, self-report design would limit causal inference (it cannot establish whether digital literacy competence causes improved delivery effectiveness, or whether both are jointly caused by some unmeasured third factor, such as general teaching motivation or school-level support) and would be subject to social-desirability bias in self-reported competence and delivery effectiveness; the study's restriction to one local government area would limit generalisability to other local government areas or states with different infrastructural and professional development contexts; and the study measured self-reported competence and delivery effectiveness rather than observed classroom practice or independently assessed student civic learning outcomes.

Future research, should incorporate direct classroom observation of civic education delivery and independent assessment of student civic learning outcomes alongside teacher self-report, extend the analysis to a broader, multi-local-government-area or multi-state Nigerian sample, and examine specific components of digital literacy competence (e.g., digital resource creation versus digital assessment practices) as differentiated predictors, to identify which specific competence dimensions most strongly drive delivery effectiveness.

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