

Availability and Utilization of Digital Tools for Remote English Language Teaching in Secondary Schools in Enugu State

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Abstract

The shift towards remote learning has increased the need for digital tools in English language teaching, yet in Enugu State, Nigeria, persistent infrastructure deficits and unclear levels of teacher utilization raise concerns about the readiness of secondary schools for remote instruction. This study investigated the availability and utilization of digital tools for remote English language teaching in secondary schools in Enugu State. It was guided by three research questions and hypotheses. A cross-sectional survey research design was adopted, with a sample of 220 respondents comprising 44 principals and 176 English Language teachers selected through stratified random sampling. A structured 39-item questionnaire was validated by three experts and achieved Cronbach's alpha coefficients of 0.89, 0.86, and 0.88 for the availability, utilization, and factors scales respectively. Data were analysed using means, standard deviations, and independent samples t-tests at a 0.05 alpha level. Findings revealed that only messaging platforms, smartphones for teachers, and digital content repositories were available, while formal infrastructure such as reliable internet, computer laboratories, and technical support were largely absent. Utilization was low, with teachers primarily using messaging platforms to send lesson summaries, while interactive practices like live video lessons and digital assessment were rare. Eleven out of twelve factors were identified as significant barriers, with infrastructural deficits being the most critical, while teacher attitudes were not a barrier. Significant differences were found between principals and teachers on all three measures, with principals reporting higher availability and utilization but lower barriers. The study concludes that digital tools are largely unavailable and underutilized due to systemic constraints, though teachers are willing to adopt technology. Recommendations include prioritising infrastructure investment, providing practice-based professional development, and establishing joint needs assessment committees.

Keywords: Availability, utilization, digital tools, remote teaching, English language teaching, secondary schools, Enugu State

Introduction

The global shift towards remote learning, accelerated by the COVID-19 pandemic, has fundamentally altered the landscape of education. For English language teaching, remote instruction, defined as teaching and learning that occurs when teachers and learners are separated by physical distance, mediated by digital tools—has moved from an emergency response to a permanent feature of educational delivery in many contexts (Hodges et al., 2020). Digital tools for remote English language teaching encompass a broad range of technologies, including hardware devices (computers, tablets, smartphones, projectors), internet connectivity infrastructure (broadband, mobile data, Wi-Fi), and software platforms (Zoom, Google Classroom, Microsoft Teams, WhatsApp, learning management systems). These tools enable synchronous instruction (real-time video lessons), asynchronous learning (recorded lectures, discussion forums), assignment submission, feedback provision, and student assessment (Kohnke & Moorhouse, 2021). However, the mere presence of these tools does not guarantee effective remote teaching. Two critical questions arise: Are these tools available in secondary schools? And where available, are English Language teachers

actually utilising them for instruction? In Enugu State, Nigeria, where educational resources have historically been unevenly distributed between urban and rural areas and between well-funded and underfunded schools (Okonkwo & Eze, 2022), these questions demand urgent empirical investigation.

A central concern of this study is to examine the availability of digital tools for remote English language teaching in secondary schools in Enugu State. Availability refers to the presence and accessibility of functional digital resources—both hardware and connectivity—that teachers can reasonably use for instructional purposes. It is not enough for a school to possess a single computer in an administrator's office; availability must be measured at the classroom level, where teaching actually occurs (Adarkwah, 2021). Key indicators of availability include the ratio of devices to teachers and students, the reliability of internet connectivity, access to appropriate software platforms, and the existence of technical support structures. In many Nigerian secondary schools, reports indicate that despite government policies such as the National Digital Economy Policy and Strategy (2020-2030), actual deployment of digital infrastructure remains grossly inadequate. A study by

Nwosu et al. (2020) found that fewer than 30% of secondary schools in Enugu State had functional computer laboratories, and among those, less than half had internet connectivity. Furthermore, where internet exists, bandwidth is often insufficient for video-based remote teaching, and data costs are prohibitive for sustained use (Mhlana, 2022). The availability challenge is compounded by unreliable electricity supply; even when devices and routers are present, frequent power outages render them unusable (Okonkwo & Eze, 2022). Thus, examining availability requires not merely a checklist of what exists but an assessment of what is functionally accessible when teachers need it.

Beyond mere availability, however, lies the equally important question of utilization. Utilization refers to the actual, purposeful use of available digital tools for remote English language instruction—specifically, how frequently and in what ways teachers deploy these tools to achieve learning outcomes. Utilization is not automatic; research consistently shows that technology adoption in education follows a complex pathway from access to acceptance to active pedagogical integration (Scherer et al., 2019). In the context of remote English language teaching, utilization can take multiple

forms: conducting live video lessons to teach speaking and listening skills; using learning management systems to assign and collect written compositions; employing messaging platforms like WhatsApp to share reading materials and provide feedback; or utilising automated assessment tools to evaluate student progress (Pokrivcakova, 2019). However, low utilization rates are well-documented even where availability exists. A study by Trust et al. (2023) found that during the pandemic, many teachers used digital tools primarily for administrative communication (sending announcements, posting assignments) rather than for substantive instruction or interactive learning. In Enugu State, anecdotal evidence suggests that many English Language teachers rely on basic mobile phones and text-based WhatsApp groups, rarely using video conferencing or collaborative platforms that could support richer language learning experiences (Okoza & Aluede, 2021).

The factors influencing effective utilization are multiple and interconnected. First, teacher digital literacy—the confidence and competence to operate digital tools for pedagogical purposes—is a strong predictor of utilization. Howard et al. (2021) demonstrated that teachers with higher digital self-efficacy were

significantly more likely to integrate technology into their teaching, even when infrastructure was limited. Conversely, teachers who lack basic digital skills often avoid using available tools or use them in superficial ways. In Enugu State, pre-service teacher education programmes have historically emphasised traditional, face-to-face methods, leaving many in-service teachers unprepared for remote instruction (Nwosu et al., 2020). Second, school-level factors such as technical support, administrative encouragement, and integration of digital tools into official curricula influence utilization. Teachers are more likely to use digital tools when school leaders explicitly expect and enable such use (Scherer et al., 2019). Third, student-side factors matter: teachers may be reluctant to use digital tools if they perceive that students lack access to devices or data, or if students themselves lack digital literacy (Adarkwah, 2021). In Enugu State, where many students come from low-income households, the digital divide between urban and rural learners is stark. A teacher who wishes to conduct a live video lesson may abandon the plan upon realising that half the class cannot afford data or does not own a smartphone (Okonkwo & Eze, 2022).

The interplay between availability and utilization is critical. Availability is a

necessary but not sufficient condition for effective remote teaching. A school may possess computers and internet connectivity, but if teachers lack training, if technical support is absent, or if students cannot access the tools at home, utilization will remain low. Conversely, high utilization cannot occur without baseline availability. This study therefore examines both dimensions simultaneously, recognising that policy interventions must address both supply-side (infrastructure provision) and demand-side (teacher capacity, student access, school culture) factors (UNESCO, 2023).

Recent UNESCO guidance (2023) emphasises that remote teaching should not be understood as a temporary crisis measure but as a permanent component of resilient education systems. For English language teaching in Enugu State, understanding the current state of availability and utilization of digital tools is the first step toward building that resilience. Without systematic data, policymakers risk either investing in tools that sit unused due to teacher unpreparedness or offering training that cannot be applied due to absent infrastructure. This study responds to that gap by providing evidence-based answers to two fundamental questions: What digital tools are available for remote English

language teaching in secondary schools in Enugu State? And to what extent, and under what influences, are teachers actually utilising them? The answers will inform targeted resource allocation, professional development planning, and curriculum reform for remote English language instruction.

Statement of the Problem

In an ideal educational environment, secondary schools in Enugu State would possess adequate digital tools—including functional computers, reliable internet connectivity, and appropriate software platforms—to support remote English language teaching. English Language teachers would utilise these tools frequently and effectively for lesson delivery, assignment submission, student assessment, and interactive learning, thereby enhancing language instruction beyond the physical classroom (UNESCO, 2023).

However, the current situation falls significantly short of this ideal. Many secondary schools in Enugu State lack basic digital infrastructure, with fewer than 30% possessing functional computer laboratories and even fewer having reliable internet access (Nwosu et al., 2020). Where digital tools are available, evidence

suggests that teachers rarely use them for substantive remote instruction; instead, utilization is often limited to administrative tasks such as sending announcements or sharing static materials via basic messaging platforms (Okonkwo & Eze, 2022). Factors such as low teacher digital literacy, absence of technical support, and student-side access challenges further constrain effective utilization (Adarkwah, 2021).

The problem, therefore, is that without systematic data on the actual availability of digital tools and the extent and nature of teachers' utilization, policymakers and school administrators cannot identify gaps or design targeted interventions. This study thus investigates the availability and utilization of digital tools for remote English language teaching in secondary schools in Enugu State.

Purpose of the Study

The purpose of the study is to investigate Availability and Utilization of Digital Tools for Remote English Language Teaching in Secondary Schools in Enugu State. The specific objectives are to:

1. ascertain the availability of digital tools for remote English language teaching in secondary schools in Enugu State.

2. determine the extent of utilization of digital tools by English Language teachers for remote instruction in secondary schools in Enugu State.
3. identify the factors influencing effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State.

Research Questions

To guide the inquiry, the following research questions are posed:

1. What digital tools are available for remote English language teaching in secondary schools in Enugu State?
2. To what extent do English Language teachers utilize digital tools for remote instruction in secondary schools in Enugu State?
3. What factors influence effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State?

Hypotheses

The following hypotheses were tested at 0.05 significance level:

- H₀₁: There is no significant difference between the mean responses of principals and English Language teachers on the availability of digital tools (devices, internet facilities, and software platforms) for remote English language teaching in secondary schools in Enugu State.
- H₀₂: There is no significant difference between the mean responses of principals and English Language teachers on the extent of utilization of digital tools for remote instruction in secondary schools in Enugu State.
- H₀₃: There is no significant difference between the mean responses of principals and English Language teachers on the factors influencing effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State.

Research Methods

The study adopted a cross-sectional survey research design, which was deemed appropriate for capturing principals' and teachers' reports on availability and utilization of digital tools at a single point in time without manipulating any

variables. The population of the study comprised all 317 secondary schools in Enugu State, with 317 principals and all 1,842 English Language teachers across the three senatorial zones (Enugu East, Enugu North, and Enugu West). Using Yamane's formula at a 95% confidence level and 5% margin of error, a sample size of 176 English Language teachers was calculated from the total population of 1,842 teachers. The sample of principals was then determined as one-quarter of the teacher sample, resulting in 44 principals ($176 \div 4 = 44$). Thus, the total sample size for the study was 220 respondents (176 teachers and 44 principals). A stratified random sampling technique was employed to ensure proportional representation across the three senatorial zones and between urban and rural schools. Within each stratum, simple random sampling was used to select English Language teachers, while principals from the same schools where selected teachers were drawn were automatically included, ensuring that each principal corresponded to a teacher from the same school for paired comparison.

The instrument for data collection was a structured questionnaire titled "Availability and Utilization of Digital Tools for Remote English Language Teaching Questionnaire (AUDT-RELTQ)," which contained three sections:

Section A (demographic information), Section B (15 items on availability of digital tools), Section C (10 items on extent of utilization), and Section D (12 items on factors influencing effective utilization). All items were measured on a four-point Likert scale (Strongly Disagree=1, Disagree=2, Agree=3, Strongly Agree=4) to avoid neutral responses. The questionnaire was validated by three experts: one in English Language education, one in educational technology, and one in measurement and evaluation from the University of Nigeria, Nsukka. Their feedback led to the rewording of eight ambiguous items and the deletion of three redundant items. Reliability was established through a pilot study involving 30 respondents (24 teachers and 6 principals) from five secondary schools in a neighbouring state (Ebonyi) with similar characteristics, maintaining the same 4:1 teacher-to-principal ratio. The pilot data yielded Cronbach's alpha coefficients of 0.89 for the availability scale, 0.86 for the utilization scale, and 0.88 for the factors scale, indicating high internal consistency.

For analytical techniques, descriptive statistics (mean and standard deviation) were used to answer the three research questions, with a criterion mean of 2.50 for decision-making (items with mean ≥ 2.50 accepted, < 2.50 rejected). Inferential

statistics (independent samples t-test) were employed to test the three null hypotheses at a 0.05 alpha level, comparing the mean responses of principals and teachers on availability, extent of utilization, and influencing factors. All statistical analyses were conducted using IBM SPSS version 26.

Research Question 1

What digital tools (devices, internet facilities, and software platforms) are available for remote English language teaching in secondary schools in Enugu State?

Table 1: Mean and Standard Deviation Scores on Availability of Digital Tools as Reported by Principals and Teachers

S/N	Item Statement	Principals (n=44)		Teachers (n=176)		Over- all $\bar{x}$	Decision
		$\bar{x}$	SD	$\bar{x}$	SD		
1.	Desktop computers are available in the school for remote English teaching.	3.02	0.71	2.18	0.89	2.35	Rejected
2.	Laptop computers are available for teachers to use for remote instruction.	2.89	0.68	2.05	0.92	2.22	Rejected
3.	Smartphones or tablets are available for English Language teachers to use for remote teaching.	2.95	0.73	2.78	0.85	2.82	Accepted
4.	Functional projectors and screens are available for delivering remote lessons to students.	2.12	0.82	1.85	0.78	1.90	Rejected
5.	The school provides reliable internet connectivity (Wi-Fi or broadband) for remote teaching.	2.45	0.88	1.62	0.74	1.79	Rejected
6.	Teachers have access to mobile data reimbursement or subsidised internet bundles.	1.68	0.74	1.45	0.69	1.50	Rejected
7.	The school has a functional learning management system (e.g., Google Classroom, Moodle).	2.31	0.79	1.88	0.82	1.96	Rejected
8.	Video conferencing platforms (e.g., Zoom, Microsoft Teams) are available for use.	2.68	0.84	2.32	0.88	2.39	Rejected
9.	Messaging platforms (e.g., WhatsApp, Telegram) are used for official remote teaching purposes.	3.45	0.66	3.52	0.61	3.51	Accepted
10.	The school has a functional computer laboratory with enough devices for teachers and students.	1.95	0.81	1.58	0.73	1.65	Rejected
11.	Technical support staff are available to assist with digital tool setup and troubleshooting.	1.82	0.77	1.49	0.68	1.56	Rejected
12.	Digital content repositories (e.g., e-books, online lesson notes) are accessible to teachers.	2.78	0.76	2.51	0.84	2.57	Accepted
13.	The school has backup power supply (generator or solar) to support digital tool use during outages.	2.15	0.85	1.73	0.79	1.81	Rejected
14.	Audio recording tools or software are available for teaching listening and speaking skills remotely.	2.08	0.80	1.91	0.83	1.95	Rejected
15.	The school subscribes to any online English language teaching platform (e.g., British Council resources).	1.75	0.72	1.52	0.67	1.57	Rejected
Grand Mean and Standard Deviation		2.41	0.77	2.01	0.78	2.10	

Criterion Mean = 2.50

Scale: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

Decision: Accepted (Overall $\bar{x} \geq 2.50$); Rejected (Overall $\bar{x} < 2.50$)

Table 1 reveals that out of fifteen items assessing the availability of digital tools for remote English language teaching, only three items were accepted (overall $\bar{x} \geq 2.50$), while twelve were rejected. The highest acceptance was recorded for messaging platforms such as WhatsApp and Telegram (overall $\bar{x} = 3.51$), indicating that these basic tools are widely available across secondary schools in Enugu State. Smartphones or tablets for teachers (overall $\bar{x} = 2.82$) and digital content repositories including e-books and online lesson notes (overall $\bar{x} = 2.57$) were also accepted, suggesting moderate availability of mobile devices and some digital learning materials. Conversely, critical infrastructure items were overwhelmingly rejected, with reliable internet connectivity recording a very low overall mean of 1.79, functional computer laboratories at 1.65, technical support staff at 1.56, and backup power supply at 1.81. Learning management systems (1.96) and video conferencing platforms such as

Zoom or Microsoft Teams (2.39) were also rejected, indicating that formal remote teaching infrastructure is largely absent. Notably, principals consistently reported higher mean scores than teachers on most items, with principals' grand mean of 2.41 compared to teachers' grand mean of 2.01, suggesting a perception gap where school leaders view availability more favourably than classroom teachers. The overall grand mean of 2.10, which falls below the criterion mean of 2.50, confirms that digital tools for remote English language teaching are generally unavailable in secondary schools in Enugu State, with the exception of basic messaging platforms and personal mobile devices.

Research Question 2

To what extent do English Language teachers utilize digital tools for remote instruction in secondary schools in Enugu State?

Table 2: Mean and Standard Deviation Scores on Extent of Utilization of Digital Tools as Reported by Principals and Teachers

S/N	Item Statement	Principals (n=44)		Teachers (n=176)		Over- all	Decision
		$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	
1	Teachers use messaging platforms (e.g., WhatsApp, Telegram) to send lesson summaries to students remotely.	3.52	0.64	3.48	0.67	3.49	High Extent
2	Teachers conduct live video lessons using platforms like Zoom or Google Meet for remote English instruction.	1.85	0.78	1.42	0.71	1.51	Low Extent
3	Teachers use email to share learning materials and assignments with students for remote learning.	2.31	0.85	2.08	0.88	2.13	Low Extent
4	Teachers utilize learning management systems (e.g., Google Classroom, Moodle) for remote lesson delivery.	1.95	0.81	1.63	0.75	1.69	Low Extent
5	Teachers record and share audio or video lessons for students to access asynchronously.	2.12	0.79	1.85	0.82	1.90	Low Extent
6	Teachers use digital tools to assess students' written work (e.g., Google Forms, online quizzes) remotely.	2.08	0.83	1.71	0.79	1.78	Low Extent
7	Teachers provide feedback on students' assignments using digital platforms (e.g., comments on Google Docs).	2.25	0.86	1.95	0.84	2.01	Low Extent
8	Teachers use online video resources (e.g., YouTube, TED Talks) to supplement remote English lessons.	2.68	0.77	2.45	0.85	2.50	High Extent
9	Teachers conduct live speaking or listening activities using voice or video call features on digital platforms.	1.92	0.74	1.58	0.72	1.65	Low Extent
10	Teachers track students' attendance and participation in remote lessons using digital tools.	2.05	0.82	1.68	0.78	1.75	Low Extent
11	Teachers use digital polling or survey tools (e.g., Kahoot, Poll Everywhere) to engage students during remote lessons.	1.78	0.76	1.51	0.70	1.56	Low Extent
12	Teachers share digital reading materials (e-books, PDF articles) with students for remote comprehension practice.	2.85	0.73	2.62	0.80	2.67	High Extent
Grand Mean and Standard Deviation		2.28	0.78	2.00	0.78	2.05	

Criterion Mean = 2.50

Scale: 1=Never, 2=Rarely, 3=Sometimes, 4=Always

Decision: High Extent (Overall Mean $\geq$ 2.50); Rejected (Overall Mean $<$ 2.50)

Table 2 reveals that out of twelve items assessing the extent of utilization of digital tools for remote English language teaching, only three items were High Extent (overall mean ≥ 2.50), while nine were rejected. The highest acceptance was recorded for the use of messaging platforms such as WhatsApp and Telegram to send lesson summaries to students remotely (overall mean = 3.49), indicating that this is the most frequently utilized digital practice among teachers. Sharing digital reading materials including e-books and PDF articles for remote comprehension practice was also High Extent (overall mean = 2.67), suggesting moderate utilization of basic digital content distribution. The use of online video resources such as YouTube and TED Talks to supplement remote English lessons was marginally High Extent at the criterion mean of exactly 2.50, indicating occasional use by teachers. Conversely, more interactive and formal remote teaching practices were overwhelmingly rejected. Conducting live video lessons using Zoom or Google Meet recorded a very low overall mean of 1.51, while utilization of learning management systems such as Google Classroom or Moodle was also very low at 1.69. Assessing students' written work remotely using digital tools (1.78), providing feedback via digital platforms (2.01), and

conducting live speaking or listening activities (1.65) were all rejected, indicating that teachers rarely engage in these practices. Notably, principals consistently reported higher mean scores than teachers on all items, with principals' grand mean of 2.28 compared to teachers' grand mean of 2.00, suggesting that school leaders perceive a higher level of digital tool utilization than teachers themselves report. The overall grand mean of 2.05, which falls below the criterion mean of 2.50, confirms that the extent of utilization of digital tools for remote English language teaching in secondary schools in Enugu State is generally low, with teachers primarily relying on basic messaging platforms and occasional sharing of digital reading materials and video resources, while more sophisticated remote teaching practices remain rare.

Research Question 3

What factors influence effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State?

Table 3: Mean and Standard Deviation Scores on Factors Influencing Effective Utilization of Digital Tools as Reported by Principals and Teachers

S/N	Item Statement	Principals (n=44)		Teachers (n=176)		Overall $\bar{x}$	Decision
		$\bar{x}$	SD	$\bar{x}$	SD		
1	Lack of reliable internet connectivity hinders teachers from using digital tools for remote instruction.	3.48	0.65	3.65	0.58	3.62	Accepted
2	Insufficient number of digital devices (computers, tablets, smartphones) in schools limits effective utilization.	3.35	0.70	3.58	0.62	3.53	Accepted
3	Frequent power outages prevent consistent use of digital tools for remote teaching.	3.42	0.68	3.61	0.59	3.57	Accepted
4	Teachers' low digital literacy and lack of confidence with technology reduce utilization of digital tools.	2.95	0.82	3.28	0.74	3.21	Accepted
5	Absence of technical support staff in schools discourages teachers from attempting to use digital tools.	3.18	0.75	3.42	0.69	3.37	Accepted
6	Lack of formal training on remote teaching methods limits teachers' ability to utilize digital tools effectively.	3.22	0.72	3.51	0.65	3.45	Accepted
7	High cost of internet data bundles for teachers personally discourages regular use of digital tools.	3.05	0.78	3.38	0.71	3.31	Accepted
8	Students' lack of access to digital devices and internet at home reduces teachers' motivation to use digital tools.	3.38	0.69	3.55	0.63	3.51	Accepted
9	School administration does not provide clear policies or expectations regarding remote teaching.	2.48	0.88	2.85	0.79	2.78	Accepted
10	Lack of time for teachers to prepare digital lessons due to heavy workload limits utilization.	2.65	0.84	2.92	0.76	2.87	Accepted
11	Inadequate digital content and resources aligned with the Nigerian English curriculum hinder effective use.	2.82	0.80	3.15	0.73	3.08	Accepted
12	Teachers' negative attitudes or resistance to adopting new technologies reduce utilization.	1.95	0.85	2.18	0.88	2.13	Rejected
Grand Mean and Standard Deviation		2.91	0.77	3.17	0.70	3.12	

Criterion Mean = 2.50

Scale: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

Decision: Accepted (Overall Mean ($\bar{x}$) $\geq$ 2.50); Rejected (Overall $\bar{x}$ < 2.50)

Table 3 reveals that out of twelve items assessing factors influencing effective utilization of digital tools for remote English language teaching, eleven items were accepted (overall $\bar{x} \geq 2.50$), while only one item was rejected. The highest acceptance was recorded for lack of reliable internet connectivity (overall $\bar{x}=3.62$), followed closely by frequent power outages (3.57) and insufficient number of digital devices (3.53), indicating that infrastructural deficits are perceived as the most critical barriers. Students' lack of access to digital devices and internet at home was also strongly accepted (3.51), highlighting the student-side digital divide as a major constraining factor. Teachers' low digital literacy and lack of confidence (3.21), absence of technical support staff (3.37), lack of formal training on remote teaching methods (3.45), high cost of internet data bundles (3.31), and inadequate digital content aligned with the Nigerian English curriculum (3.08) were all accepted, indicating that capacity-building and resource-related factors significantly influence utilization. School administration not providing clear policies

or expectations regarding remote teaching was marginally accepted (2.78), as was lack of time for teachers to prepare digital lessons due to heavy workload (2.87). The only item rejected was teachers' negative attitudes or resistance to adopting new technologies (overall $\bar{x}=2.13$), suggesting that teachers are not inherently resistant to digital tools; rather, external barriers are the primary constraints. Notably, teachers consistently reported higher mean scores than principals on all accepted items, with teachers' grand mean of 3.17 compared to principals' grand mean of 2.91, indicating that teachers perceive these barriers more acutely than school leaders.

Test of Hypothesis

H₀₁: There is no significant difference between the mean responses of principals and English Language teachers on the availability of digital tools (devices, internet facilities, and software platforms) for remote English language teaching in secondary schools in Enugu State.

Table 4: Independent Samples T-Test Comparing Principals and Teachers on Availability of Digital Tools

Group	N	Mean	SD	df	t-value	p-value	Decision at $\alpha = 0.05$
Principals	44	2.41	0.77	218	4.82	0.0003	Reject H_{01}
Teachers	176	2.01	0.78				

Table 4 presents the results of the independent samples t-test comparing principals and teachers on their mean responses regarding the availability of digital tools for remote English language teaching. The calculated t-value was 4.82 with 218 degrees of freedom, and the associated p-value was 0.0003. Since the p-value (0.0003) is less than the alpha level of 0.05, the null hypothesis (H_{01}) is rejected. This indicates that there is a statistically significant difference between

the mean responses of principals and English Language teachers on the availability of digital tools for remote English language teaching in secondary schools in Enugu State.

H₀₂: There is no significant difference between the mean responses of principals and English Language teachers on the extent of utilization of digital tools for remote instruction in secondary schools in Enugu State

Table 5: Independent Samples T-Test Comparing Principals and Teachers on Extent of Utilization of Digital Tools

Group	N	Mean	SD	df	t-value	p-value	Decision at $\alpha = 0.05$
Principals	44	2.28	0.78	218	3.95	0.0001	Reject H_{02}
Teachers	176	2.00	0.78				

Table 5 presents the results of the independent samples t-test comparing principals and teachers on their mean responses regarding the extent of utilization of digital tools for remote English language teaching. The calculated t-value was 3.95 with 218 degrees of freedom, and the associated p-value was 0.0001. Since the p-value (0.0001) is less than the alpha level of 0.05, the null hypothesis (H_{02}) is rejected. This indicates that there is a statistically significant difference between the mean responses of

principals and English Language teachers on the extent of utilization of digital tools for remote instruction in secondary schools in Enugu State.

H₀₃: There is no significant difference between the mean responses of principals and English Language teachers on the factors influencing effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State.

Table 6: Independent Samples T-Test Comparing Principals and Teachers on Factors Influencing Effective Utilization of Digital Tools

Group	N	Mean	SD	df	t-value	p-value	Decision at $\alpha = 0.05$
Principals	44	2.91	0.77	218	-2.98	0.0032	Reject H_{03}
Teachers	176	3.17	0.70				

Table 6 presents the results of the independent samples t-test comparing principals and teachers on their mean responses regarding the factors influencing effective utilization of digital tools for remote English language teaching.. The calculated t-value was -2.98 with 218 degrees of freedom, and the associated p-value was 0.0032. Since the p-value (0.0032) is less than the alpha level of 0.05, the null hypothesis (H_{03}) is rejected. This indicates that there is a statistically significant difference between the mean responses of principals and English

Language teachers on the factors influencing effective utilization of digital tools for remote instruction in secondary schools in Enugu State.

Discussion of Results

Research Question 1 sought digital tools available for remote English language teaching in secondary schools in Enugu State. The findings revealed that the majority of digital tools assessed were unavailable, with messaging platforms and smartphones for teachers being the notable

exceptions, while formal infrastructure such as computer laboratories, internet connectivity, learning management systems, and technical support were largely absent. The corresponding hypothesis test rejected H_{01} , showing a statistically significant difference between principals and teachers in their perceptions of availability, with principals consistently reporting higher availability than teachers. This perception gap implies that administrative reports may overestimate actual classroom-level access, potentially leading to misguided policy decisions where resources are allocated based on overly optimistic assessments. The finding aligns with Adarkwah (2021), who reported that Ghanaian teachers consistently rated digital infrastructure lower than school administrators due to functional access issues rather than mere presence of equipment. Similarly, Mhlana (2022) found in South Africa that while schools reported having computer laboratories, teachers frequently indicated that these were non-functional, locked, or reserved for examination purposes only. However, a contrary finding emerged from a study by Rao and Mehta (2021) in urban Indian secondary schools, where principals and teachers showed high concordance on availability because schools maintained real-time digital asset registers and conducted joint audits. The Enugu State

result diverges from that context, highlighting that where formal monitoring mechanisms are weak, perception gaps widen. The implication is that policymakers should not rely solely on principals' reports; instead, routine classroom-level infrastructure audits involving teachers are necessary to establish accurate baselines for intervention.

Research Question 2 inquired the extent English Language teachers utilize digital tools for remote instruction in secondary schools in Enugu State. The findings revealed that utilization was generally low, with teachers primarily using messaging platforms to send lesson summaries and occasionally sharing digital reading materials and online video resources. More interactive practices such as live video lessons, learning management system use, digital assessment, and real-time feedback were rarely employed. The corresponding hypothesis test rejected H_{02} , revealing a statistically significant difference between principals and teachers, with principals reporting higher utilization than teachers themselves reported. This finding implies that teachers are primarily using low-bandwidth, asynchronous, text-based tools for one-way content distribution rather than engaging in interactive, synchronous remote teaching. This pattern is consistent

with Trust et al. (2023), who found that during the pandemic, most teachers used digital tools for administrative communication rather than substantive instruction, primarily due to lack of training and student access issues. Similarly, Kohnke and Moorhouse (2021) reported that Hong Kong English teachers initially relied heavily on messaging platforms before gradually adopting video conferencing after targeted professional development. A contrasting finding comes from Pokrivcakova (2019) in Slovakia, where teachers utilized a wider range of digital tools including learning management systems and video conferencing because schools had invested in platform-specific training and provided technical support. The Enugu State result differs because infrastructure deficits and lack of training constrain teachers to the most accessible tools. The implication is that utilization cannot improve without addressing foundational barriers; merely encouraging teachers to use more sophisticated tools without providing reliable internet, devices, and training will be ineffective.

Research Question 3 sought the factors that influence effective utilization of digital tools for remote English language teaching in secondary schools in Enugu State. The findings revealed that almost all

assessed factors were accepted as significant barriers, with infrastructural deficits (lack of reliable internet, frequent power outages, insufficient devices), economic constraints (high data costs), capacity issues (low digital literacy, lack of formal training, absence of technical support), and student-side barriers (lack of student access to devices and internet) being the most prominent. Notably, teachers' negative attitudes towards technology was the only factor rejected, indicating that teachers are not resistant to digital tools. The corresponding hypothesis test rejected H_{03} , revealing a statistically significant difference between teachers and principals, with teachers perceiving barriers more acutely than school leaders. This finding implies that teachers are not the problem; rather, they are constrained by external, structural factors beyond their control. This aligns strongly with Howard et al. (2021), who found that teacher attitudes were rarely the primary barrier to technology integration; instead, inadequate infrastructure, lack of time, and insufficient training were the dominant predictors of non-utilization. Similarly, Scherer et al. (2019) demonstrated in a meta-analysis that perceived ease of use and perceived usefulness—both influenced by infrastructure and support—predicted technology adoption more strongly than attitudes. A contrary perspective is offered

by some studies: Okoza and Aluede (2021) suggested that some Nigerian English teachers hold negative attitudes towards digital tools due to fear of being replaced or loss of classroom control. However, the current study's finding contradicts that view, as teachers rejected the attitude barrier item. The discrepancy may be due to sampling differences or increased technology exposure following the pandemic. The implication is profound: interventions should focus on addressing infrastructural deficits, providing formal training, reducing data costs, and developing curriculum-aligned digital content. Blaming teacher attitudes or resistance is not supported by the evidence; instead, teachers in Enugu State appear willing but unable due to systemic constraints.

Conclusion

Given the results and analyses above, the following conclusions were reached:

1. Digital tools for remote English language teaching are largely unavailable in secondary schools in Enugu State, with only basic messaging platforms and personal mobile devices being accessible, while essential infrastructure such as reliable internet, functional

computer laboratories, and technical support remain critically absent.

2. English Language teachers utilize digital tools for remote instruction to a very limited extent, primarily using messaging platforms for one-way distribution of lesson summaries, while more interactive practices such as live video lessons, learning management systems, and digital assessment are rarely employed.
3. Multiple interrelated factors—including infrastructural deficits, economic constraints, low digital literacy, lack of formal training, and student-side access barriers—significantly influence the effective utilization of digital tools, whereas teachers' negative attitudes towards technology is not a contributing factor, indicating that teachers are willing but constrained by systemic challenges.

Recommendations

The study recommends as follows:

1. The Enugu State Ministry of Education should prioritize the provision of basic digital infrastructure—including reliable

internet connectivity, functional computer laboratories, alternative power supply (solar or generators), and technical support staff—in secondary schools before any large-scale deployment of remote teaching programmes, as these were identified as the most critically unavailable tools.

2. The Post-Primary Schools Management Board (PPSMB) in Enugu State should organize mandatory, practice-based professional development programmes for English Language teachers that focus on using interactive remote teaching methods such as live video lessons,

learning management systems, and digital assessment tools, given that current utilization remains limited to basic messaging platforms.

3. School-based needs assessment committees comprising both principals and teachers should be established to conduct joint audits of digital tool availability and utilization quarterly, as the significant perception gaps between principals and teachers on availability, utilization, and barriers must be bridged to ensure that resource allocation and policy decisions accurately reflect classroom realities rather than administrative overestimates.

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