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THE ROLE OF TECHNOLOGY IN ENHANCING ENGLISH LANGUAGE TEACHING IN PUBLIC SECONDARY SCHOOLS IN ONITSHA NORTH LGA., ANAMBRA STATE.

Abstract

This study examined role of technology in enhancing English language teaching in public secondary schools in Onitsha north LGA., Anambra state. Three specific purposes, three research questions and three hypotheses guided the study. Descriptive survey design was adopted for the study. The population of the study comprised all the 31 English language teachers in the 16 public secondary schools in Onitsha north LGA, Anambra State. The entire population was used for the study; hence the census technique was adopted for the study. The research instrument was a questionnaire titled: "Role of Technology in Enhancing English Language Teaching Questionnaire (RTEELTQ)". The instrument was face validated by three experts in Faculty of Education. The instrument was pilot tested to ensure its reliability and the data collected was analyzed using Cronbachs' Alpha. The scores gave coefficient reliability of 0.73, 0.80 and 0.74, for the three clusters respectively and an overall reliability coefficient of 0.76. The researcher administered the instrument to the respondents with the help of two research assistants. Data were analyzed using mean and standard deviation for answering research questions and t-test for testing hypotheses. The findings revealed among others that technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state. The study concluded that technology supports teacher professional development, improves students' learning outcomes and influence students' assessment methods. Based on the findings, the study recommended among others that schools should adopt and integrate technology-based learning platforms such as educational software, online English tutorials and virtual classrooms to enhance students' engagement and learning outcomes.

Keywords: Technology; Enhance; English Language; Teaching; Secondary School.

Introduction

The 21st century is characterized by an unprecedented explosion of scientific and technological knowledge that has transformed nearly all aspects of human activity, including education. An important tier of the education system is secondary education rendered in secondary schools. Secondary school is the midway between primary and tertiary schools. It is the form of education that students receive after their primary education and or before their tertiary education. It is intended for pupils between the ages of 11-17. Secondary Education has three years of junior secondary school and three years of senior secondary school. It is the budding ground for future professionals as well as the foundation for the discovering and classification of the specific fields of professions. Through secondary education, students are equipped with the relevant scientific and technical knowledge to

effectively survive in the modern age via various school subjects. One of the subjects taught in secondary school is English language.

English, serving as Nigeria's official language and the primary medium of instruction, plays a crucial role in academic, professional, and socio-political interactions (Njoku, 2018). It is a dominant language in global communication, business, technology and academia, making its teaching a significant area of research and practice (Thompsom & Walsh, 2020). English language teaching (ELT) refers to the structured instruction of English as a second language or foreign language (Williams & Patel, 2023). Given its status as a global language, effective teaching methods and strategies are required to help learners develop proficiency in speaking, listening, reading and writing. However, English language teaching (ELT) in Nigerian schools faces numerous challenges, including inadequate instructional materials, ineffective teaching methods, and limited access to educational resources (Udoye & Alia, 2020). Technology has the potentials of ameliorating some of these challenges. Nnaka (2022) submitted that the integration of modern technology into English language teaching has revolutionized traditional pedagogical approaches, introducing innovative methods that enhance both teaching and learning experiences.

Advancements in educational technology has made classrooms to transition from conventional chalk-and-talk methods to interactive and technology-driven environments. Digital tools such as interactive whiteboards, language learning applications, artificial intelligence (AI)-powered platforms, and online collaborative spaces have redefined how students engage with the English language (Thompson & Walsh, 2020). These tools not only foster interactive learning but also cater to diverse learning styles, making language acquisition more engaging and effective. Pawar (2024) identified some technology tools for English Language learning to include:

1. Online language learning platforms like duolingo (a language app that uses gamified approach to offer courses in various languages); babble (a language learning platform that offers practical and real-life language lesson content); rosetta stone (a language learning platform that provides immersive experiences in English)
2. Mobile applications like memrise (that uses mnemonic techniques, multimedia and user-generated content for building vocabulary and language retention); busuu (allows users to practice with native speakers through writing and speaking

exercises; hello talk (connects language learners with native speakers for text, voice and video exchanges to improve conversational skills).

3. Language exchange platforms like tandem (a language exchange app that offers text, voice and video chat options); conversation exchange (provides real and interactive context for learners to practice their target language with native speakers)
4. Social media and collaborative learning like YouTube channels(BBC Learning English, English Addict with Mr. Duncan etc) which offers a diverse array of educational content that caters to learners of all levels; facebook groups(English Language teachers and ESP Practitioners) provides a platform that fosters a sense of community among language learners from diverse backgrounds
5. Educational websites like British Council Learn English (an online platform that specializes in language education and cultural relations); BBC learning English (it is an educational platform that offers a wide range of resources to help individuals learn and improve their English language skills)
6. Gamification platforms like Kahoot (a game-based learning platform that allows educators to create quizzes, surveys and discussions); Quizizz (a versatile platform that can be used to create engaging quizzes, assessments and learning games specifically tailored to English language learning.
7. Podcasts and audiobooks. Language learners can benefit from podcasts that provide lessons, conversations and cultural insights in their target language. Audiobooks allows individuals to listen to educational contents rather read it.

These digital resources provide learners with access to diverse instructional materials, facilitate personalized learning experiences, increases students' engagement, and motivation, encourage collaboration beyond the classroom and improves language skills (Audu et al., 2021). This means that it can enhance teaching. To enhance means to increase the value of something while teaching is impacting knowledge, skills, and competencies and so on in learners. Technology has the potentials of making teaching better.

Technology facilitates a blend of synchronous and asynchronous learning models, enabling students to learn at their own pace while accessing a wealth of resources beyond the traditional classroom setting (Garcia & Lopez, 2020). Research shows that students in technology-integrated classrooms exhibit higher engagement levels and improved retention of language concepts compared to those in traditional learning settings (Khan & Ahmed,

2021). Furthermore, gamification techniques, AI-driven personalized learning, and multimedia content have proven effective in sustaining students' motivation and improving retention rates (Anderson & Chen, 2023). AI-driven learning platforms offer personalized instruction by adapting content to individual student needs, enabling learners to progress at their own pace (Williams & Patel, 2023). These platforms provide real-time feedback, helping students identify and address language weaknesses efficiently. Additionally, online collaborative tools encourage peer learning and communication, fostering language acquisition through interaction and practice (Patel & Smith, 2021). Online resources such as educational apps, videos, and interactive exercises help students practice and reinforce language skills. Multimedia content, including podcasts, virtual simulations, and gamified learning platforms, enhances engagement and accommodates different learning styles. Furthermore, technology exposes students to real-life language contexts through authentic materials such as news articles, videos, and online discussions. This exposure helps them develop better comprehension, expand their vocabulary, and improve cultural understanding (Martin & Johnson, 2021). Zhou and Brown (2020) noted that virtual reality (VR) technologies also create immersive learning experiences, allowing students to practice language in simulated real-world situations. Additionally, language learning platforms provide instant feedback on grammar, pronunciation, and vocabulary, enabling students to make immediate corrections and refine their skills. Collaborative online tools facilitate group learning, allowing students to participate in virtual language exchanges, discussions, and projects with peers worldwide, which strengthens their communication skills. Aside enhancing students' learning, technology also enhances teacher development.

Technology plays a crucial role in enhancing teacher professional development (TPD) in English language teaching (ELT), particularly in developing countries like Nigeria, where access to continuous training is often limited. Digital tools facilitate ongoing professional learning by providing flexible, scalable, and cost-effective models of TPD. Research has shown the effectiveness of virtual coaching, social media-based peer learning, video-stimulated reflection, and blended learning approaches in supporting teachers' pedagogical growth (Hennessy et al., 2022). For instance, mobile instant messaging platforms such as WhatsApp enable teachers to share resources, engage in discussions, and receive expert guidance, fostering collaborative learning communities (Moodley, 2021). Teachers can use collaborative platforms to discuss best practices and discover innovative teaching methods.

This gives teachers the opportunity to exchange ideas and strategies to become better teachers. Video-based self-reflection, where teachers analyze recordings of their own lessons or observe expert demonstrations, has been shown to improve instructional strategies and boost confidence in using English as a medium of instruction (Ragatz & Sugiarti, 2015). This means that through the use of such technologies, teachers improve on themselves and learn to teach better. Moreover, digital learning platforms, including Massive Open Online Courses (MOOCs), provide structured opportunities for teachers to enhance their English proficiency and pedagogical skills at their own pace (Sun et al., 2020). Zhou and Brown (2020) added that online platforms, webinars, and professional learning communities allow teachers to stay updated with emerging pedagogical trends like digital students' assessments.

Student assessment is another area where technology has brought significant improvements. Digital assessment tools provide real-time feedback, making it easier for students to track their progress and address weaknesses. Online proficiency tests, automated grading systems, and AI-powered assessment tools ensure accuracy in evaluating students' language skills. Technology also enables formative assessments through interactive quizzes, games, and discussion boards, which provide immediate insights into student understanding. These assessments help educators adjust their teaching strategies based on students' needs. Additionally, technology facilitates self-assessment, allowing learners to monitor their progress through language-learning apps and digital portfolios. Moreover, adaptive learning technologies personalize assessments by adjusting difficulty levels based on individual performance, ensuring that students receive targeted feedback. The integration of gamification in assessments motivates students by making learning and evaluation more enjoyable through challenges and rewards. Formative assessment is an essential component of language learning as it enables teachers to monitor student progress and provide timely interventions. Technology plays a significant role in this process by offering various digital tools that streamline assessment procedures. According to Popham (2011), formative assessment is a structured process in which teachers gather evidence of students' learning and adjust their teaching accordingly. This approach is particularly beneficial in English language learning, where continuous evaluation of reading, writing, speaking, and listening skills is necessary. The use of technology-based formative assessment tools has been found to enhance students' engagement and motivation. Plickers, for instance, allows educators to conduct real-time assessments without requiring students to use electronic devices, making

it an effective tool for evaluating comprehension and language proficiency (Elmahdi et al., 2018). Additionally, Ramsey and Duffy (2016) highlight that formative assessment using technology supports individualized learning and creates opportunities for interactive sessions that enhance students' understanding of complex linguistic concepts.

However, the effectiveness of technology-enhanced teaching depends on factors such as institutional support, teacher motivation, and access to infrastructure, particularly in regions with digital inequalities (Hennessy et al., 2022). Despite these challenges, integrating technology into ELT can significantly improve instructional quality in ELT, leading to better learning outcomes for students. Studies like Naseem, (2021); Shyamlee and Muhammad (2018); Pawar (2024) have shown positive correlation between technology use and teaching of English language. These findings reveal the potential benefits of incorporating technology into language education. Despite the proven benefits of technology in English language education, its adoption in Nigerian secondary schools has not been maximized due to various challenges. Factors such as inconsistent power supply, inadequate funding, poor ICT infrastructure, and teachers' low digital literacy hinder the seamless integration of technology into English language teaching (Amhadi, 2018). Consequently, many classrooms continue to rely on traditional teaching approaches that do not fully engage students or cater to diverse learning styles. Given these realities, there is a pressing need to investigate how technology can be effectively leveraged to enhance English language teaching in Nigerian schools. This study, therefore, seeks to examine the role of technology in improving ELT in public secondary schools in Onitsha north LGA., Anambra State, focusing on its impact on teacher professional development, student learning outcomes, and assessment methods.

Statement of the Problem

The quality of English language teaching in Nigerian schools has remained a concern for educators and policymakers. English, as a second language, requires innovative teaching strategies to improve learners' proficiency. The integration of technology in ELT presents a transformative opportunity by providing access to multimedia resources, fostering interactive learning, and enhancing teacher-student engagement. However, the application of technology in Nigerian classrooms seem to be far from optimal. There seem to be more

use of traditional teaching approaches, often characterized by rote memorization and teacher-centered instructions. These strategies may not to be effective in fostering communicative competence among students. Teachers seem to use majorly textbooks in ELT. Virtual interactions and artificial intelligence-assisted conversations are probably not present in ELT. Furthermore, many teachers seem to remain resistant to adopting digital technologies due to excessive workloads and lack of adequate training. These limitations hinder students from accessing modern educational tools, thereby affecting their language acquisition and overall academic performance. One wonders if the role of technology in enhancing ELT is really understood. This underscores the need for the present study on the role of technology in enhancing ELT in public secondary schools in Onitsha north LGA. Anambra state.

Purpose of the Study

The main purpose of the study is to examine the role of technology in enhancing English language teaching in secondary schools in Onitsha north LGA. Anambra state. Specifically, the study sought to examine:

1. Roles Technology play in teacher professional development for enhancing English language teaching in secondary schools in Onitsha north LGA. Anambra state.
2. How technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state.
3. How technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state.

Research Objectives

The following research questions guided the study

1. What Roles does Technology play in teacher professional development for enhancing English language teaching in secondary schools in Onitsha north LGA. Anambra state?
2. How does technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state?
3. How does technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state?

Hypotheses

The following hypothesis will be tested at 0.05 level of significance.

1. Male and female teachers do not significantly differ in their mean ratings on the ways technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA. Anambra state.
2. Male and female teachers do not significantly differ in their mean ratings on the how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state.
3. Male and female teachers do not significantly differ in their mean ratings on the how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state.

Literature Review

Conceptual Review

English Language Teaching

English is one of the most widely spoken languages in the world, serving as the primary or secondary language in many countries. It is a dominant language in global communication, business, technology, and academia, making its teaching and learning a significant area of research and practice (Thompson & Walsh, 2020).

Key Characteristics of the English Language

Linguistic Diversity: English has multiple dialects and varieties, influenced by historical, cultural, and regional factors, such as British English, American English, and Nigerian English (Garcia & Lopez, 2020).

Dynamic Evolution: The language continuously adapts to social and technological changes. Digital communication has introduced new vocabulary, such as "emoji," "tweet," and "Google" as a verb (Patel & Smith, 2021).

Global Significance: English is widely used in international diplomacy, scientific publications, and digital content, making it essential for individuals seeking access to global opportunities (Williams & Patel, 2023). Given its status as a global language, effective teaching methods are required to help learners develop proficiency in speaking, listening, reading, and writing.

English Language Teaching (ELT) refers to the structured instruction of English as a second or foreign language. Over time, ELT has evolved from traditional grammar-translation methods to communicative and technology-enhanced approaches (Martin & Johnson, 2021). Traditional ELT is usually characterized with teacher-centered instructions; rote memorization and grammar drills, textbook- dependent and limited access to native speakers. Technology-enhanced ELT on the other hand is usually learner-centered; digital simulations and language games; multimedia and online resources; virtual interactions and AI-assisted conversations.

Technology in Education

Technology in education refers to the systematic application of scientific knowledge to facilitate learning and improve instructional delivery. Educational Technology (EdTech) encompasses various tools, including multimedia applications, e-learning platforms, and digital communication systems, that support teaching and learning processes (Falola & Jolayemi, 2020). The use of technology in English language teaching (ELT) enhances pedagogical methods by promoting interactivity, accessibility, and collaboration among learners and educators (Salmah, 2016). It has transformed traditional classroom practices by offering digital resources that cater to different learning styles. Technological tools such as PowerPoint projectors, e-mails, internet databases, video discs, and e-library resources enable teachers to provide visually enriched lessons, facilitate real-time interactions, and enhance students' language proficiency (Audu et al., 2021). Additionally, mobile applications, language learning software, and online discussion forums help students practice grammar, pronunciation, and writing skills independently (Amgbara, 2022). These tools foster a more student-centered learning environment and enable personalized learning experiences.

Challenges of Technology Integration in English Language Teaching

Despite its benefits, the integration of technology in ELT faces several challenges in Nigeria. One of the primary obstacles is inadequate funding for education, leading to a lack of ICT infrastructure in schools (Isa, 2015). Many institutions lack basic technological resources such as computers, internet access, and digital learning platforms. Furthermore, teachers'

low levels of digital literacy hinder their ability to incorporate technology effectively into their lessons (Amgbara, 2022). Other challenges include erratic power supply, poor policy implementation, and teachers' excessive workloads, which limit the time available for professional development in technology (Borase, 2014). Addressing these barriers is crucial for the successful adoption of technology in English language instruction.

Theoretical Framework

The study is anchored on two key theories, they are:

Technological Pedagogical Content Knowledge (TPACK) Model

This was propounded by Mishra and Koehler in 2006. The TPACK model posits that effective teaching is the intersection of three core components: Technological Knowledge (TK), Pedagogical Knowledge (PK), and Content Knowledge (CK). Teachers must understand how to integrate these three domains to use technology effectively in the classroom. This model is crucial for understanding how teachers can effectively integrate technology into language teaching. It underscores the importance of balancing technological tools with appropriate pedagogical strategies and content knowledge to optimize student learning. This framework directly aligns with the study's focus on enhancing English language teaching through technology, as it guides teachers in applying digital tools effectively. While TPACK offers a practical framework for technology integration, it does not explicitly address the cognitive aspects of learning, such as how students process and retain information. Cognitive Load Theory, which focuses on the mental processes involved in learning, provides this additional insight. This justifies the addition of the cognitive load theory.

Cognitive Load Theory (CLT)

This theory was propounded by John Sweller in 1988. The theory asserts that learning is optimized when information is presented in a way that reduces cognitive overload. It suggests that excessive or poorly designed information can overwhelm a learner's working memory, which impedes effective learning. CLT is relevant to this study because it emphasizes the need for instructional design that minimizes cognitive overload. In language learning, digital tools should be used in ways that support students' cognitive processing, ensuring that learners are not overwhelmed by excessive multimedia or digital content. CLT

helps explain how to design effective digital language learning experiences that enhance comprehension and retention.

Research Method

A descriptive survey design was adopted for the study. This was done by seeking the opinions of Economics teachers on the problem of the study. The study was carried out in the sixteen (16) public secondary schools in Onitsha North LGA, Anambra state. The population is made up of 31 English language teachers consisting of 7 male and 24 female English language teachers. The whole population was used because the size was manageable, hence, no sampling and sampling technique.

The instrument for data collection was a questionnaire titled "Role of Technology in Enhancing English Language Teaching Questionnaire (RTEELTQ)" constructed by the researcher based on the research questions. The questionnaire was made up of 22 items and was divided into three parts 1, 2 and 3. Part 1 with 8 items to elicit information on ways technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA, Anambra state; part 2 has 7 items which covered how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA, Anambra state and part 3 with 7 items covered how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA, Anambra state. The instrument was validated by three experts from the Faculty of Education, Nnamdi Azikiwe University, Awka. The instrument was pilot tested to ensure its reliability and the data collected was analyzed using Cronbachs' Alpha. The scores gave coefficient reliability of 0.73, 0.80 and 0.74, for the three clusters respectively and an overall reliability coefficient of 0.76. The questionnaire was administered by the researcher and two research assistants using direct administration method. All the 31 copies of questionnaires distributed were collected and duly filled. They were all used for analysis.

The data obtained were analyzed using mean and standard deviation based on the 4-point scale. Any item with a mean response of 2.50 and above was considered 'Agreed' while anyone with a mean response below 2.50 was considered 'Disagreed'. t-test was used to test the hypotheses at 0.05 level of significance. A null hypotheses is rejected where the t-

calculated value is greater than t-critical (table) value, rather do not reject null hypotheses if the t-calculated value is less than t-critcal (table) value.

Results

Research Question 1: In what ways does technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA. Anambra state?

Table 1: Respondents' mean ratings and standard on ways technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA. Anambra state

S/N	Item Description	Mean	SD	Remark
	Technology enhances teacher professional development by:			
1	Providing teachers with tools for instructional improvement.	1.86	0.68	Disagreed
2	Fostering teacher collaboration where educators share best practices	3.66	0.75	Agreed
3	Enabling teachers to organize learning contents for effectiveness	2.58	1.00	Agreed
4	Allowing teachers provide timely feedback.	2.88	0.74	Agreed
5	Offering continuous professional development opportunities for teachers	2.95	0.54	Agreed
6	Helping teachers stay updated with modern teaching methodologies.	2.51	1.02	Agreed
7	Enabling teachers integrate a variety of instructional materials in teaching	2.94	1.07	Agreed
8	Enabling teachers customize lessons based on students' individual learning needs	2.06	0.62	Agreed
	Cluster mean	2.57	0.18	Agreed

The data in table 1 shows ways technology support teacher professional development in English language teaching in secondary schools. The respondents agreed to seven items (2, 3, 4, 5, 6, 7 and 8) out of eight items as ways technology support teacher professional development in English language teaching in secondary schools. The mean for the seven items ranged from 2.06 to 3.66. The respondents however do not consider the remaining one item (item 1) as a way technology support teacher professional development in English language teaching in secondary schools with a mean rating of 1.86. The standard deviation scores for

all the items ranged from 0.54 to 1.07. This reveals that the respondents are not wide apart in their ratings.

Research Question 2: How does technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state?

Table 2: Respondents' mean ratings and standard on how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state

S/N	Item Description	Mean	SD	Remark
	Technology enhances students' learning outcomes by:			
1	Providing personalized learning experiences to students	3.58	0.80	Agreed
2	Fostering interactive and engaging learning experiences to students	3.16	0.62	Agreed
3	Developing critical thinking and research skills	4.00	0.00	Agreed
4	Providing self-paced lesson contents	3.47	0.57	Agreed
5	Creating immersive learning experiences	2.52	0.93	Agreed
6	Providing immediate feedback enabling students to make immediate corrections and refine their skills	2.68	0.88	Agreed
7	Providing access to diverse learning resources	3.37	0.62	Agreed
	Cluster mean	3.01	0.13	Agreed

The data in table 2 shows how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state. The respondents agreed that all the seven listed items are how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha north LGA. Anambra state. The mean of the seven items ranged from 2.52 to 4.00. The standard deviation scores for all the items ranged from 0.00 to 0.93. This indicates that the respondents are not wide apart in their ratings.

Research Question 3: How does technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state?

Table 3: Respondents' mean ratings and standard on how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state

S/N	Item Description	Mean	SD	Remark
	Technology enhances students' assessment methods by:			
1	Making it easier for students to track their progress	2.51	0.97	Agreed
2	Ensuring accuracy in evaluating students' language skills.	3.04	0.82	Agreed
3	Providing immediate insights into student understanding	2.88	0.93	Agreed
4	Allowing learners to monitor their progress academically	2.81	1.06	Agreed
5	Personalizing assessments by adjusting difficulty levels based on individual performance	1.97	1.00	Disagreed
6	Ensuring that students receive targeted feedback	3.08	1.05	Agreed
7	Motivating students by making learning and evaluation more enjoyable through challenges and rewards	2.55	0.94	Agreed
	Cluster mean	2.51	0.20	Agreed

Table 3 reveals how technology influence students' assessments methods in English language teaching in secondary schools in Anambra state. The respondents agreed to six items (1, 2, 3, 4, 6 and 7) out of the seven listed items are how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state. The mean ratings for the six items ranged from 2.51 to 3.08. The respondents however do not considered the remaining one item (item 5) as how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA. Anambra state as it had a mean rating 1.97 which is below the cut-off point. The standard deviation scores for all the items ranged from 0.20 to 1.06 showing that the respondents are not wide apart in their ratings.

Hypothesis 1: Male and female teachers do not significantly differ in their mean ratings on the ways technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA., Anambra state.

Table 4: **Summary of t-test analysis of mean ratings of male and female teachers on how technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA., Anambra state.**

Gender	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Male	7	2.58	0.16				significant
				29	2.03	1.96	
Female	24	2.55	0.19				

As shown in table 4 above, the t-cal value is 2.03 while the t-crit is 1.96 at 0.05 level of significance. As t-cal value is greater than t-cirt value, the null hypothesis is therefore rejected. This shows that there is significant difference in the mean ratings of male and female teachers on the ways technology support teacher professional development in English language teaching in secondary schools in Onitsha north LGA., Anambra state.

Hypothesis 2: Male and female teachers do not significantly differ in their mean ratings on how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha North LGA, Anambra state.

Table 5: **Summary of t-test analysis of mean ratings of male and female teachers on how technology improves students' learning outcomes in English language teaching in secondary schools in Onitsha North LGA, Anambra state.**

Gender	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Male	7	3.01	0.13				
				29	0.62	1.96	Not significant
Female	24	3.01	0.14				

As shown in table 5 above, the t-calculated value is 0.62 while the t-critical (table) value is 1.96 at 0.05 level of significance. As t-calculated value is less than t-critical value, the null hypothesis is therefore not rejected. This shows that there is no significant difference in the mean ratings of male and female teachers on how technology improves students' learning

outcomes in English language teaching in secondary schools in Onitsha North LGA, Anambra state.

Hypothesis 3: Male and female teachers do not significantly differ in their mean ratings on how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA., Anambra state.

Table 6: **Summary of t-test analysis of mean ratings of male and female teachers on how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha North LGA, Anambra state.**

Gender	N	$\bar{X}$	SD	Df	t-cal	t-crit	Decision
Male	7	2.29	0.22	29	1.88	1.96	Not significant
Female	24	2.30	0.17				

As shown in table 6 above, the t-cal value is 1.88 while the t-crit value is 1.96 at 0.05 level of significance. As t-cal value is less than t-crit value, the null hypothesis is therefore not rejected. This shows that there is no significant difference in the mean ratings of male and female teachers on how technology influence students' assessments methods in English language teaching in secondary schools in Onitsha north LGA., Anambra state.

Discussion of Findings

Findings from this study reveal that technology supports teacher professional development in English language teaching by fostering collaboration among educators, enabling lesson customization, and providing opportunities for continuous learning. This aligns with the findings of Hennessy et al. (2022), who emphasized that digital platforms facilitate virtual coaching, peer learning, and professional networking, thereby enhancing teachers' pedagogical skills. Similarly, Moodley (2021) highlighted that platforms such as WhatsApp and online communities allow teachers to exchange best practices and receive expert guidance. However, despite these benefits, some respondents disagreed that technology provides teachers with tools for instructional improvement. This divergence could be attributed to inadequate ICT infrastructure and limited access to advanced digital teaching resources in some schools (Amgbara, 2022). Thus, while technology has the potential to enhance teacher development, its effectiveness is contingent on institutional support, access

to digital tools, and teacher readiness to embrace new instructional methods. The analysis of Hypothesis 1 revealed that there was no significant difference in the mean ratings of respondents. This similarity in responses suggests that technology supporting teacher professional development is perceived uniformly by both male and female English language teachers. One possible reason for this uniformity could be that respondents share common experiences, professional backgrounds, or exposure levels, which influence their perception in a similar manner.

The study also found that technology improves students' learning outcomes by fostering interactive and engaging learning experiences, providing self-paced lesson content, and developing critical thinking and research skills. These findings corroborate the work of Garcia & Lopez (2020), who noted that technology enables a blend of synchronous and asynchronous learning models, allowing students to learn at their own pace. Similarly, Anderson & Chen (2023) emphasized that AI-driven personalized learning and gamification techniques sustain student motivation and improve retention. The study further supports the observations of Patel & Smith (2021), who found that online collaborative tools encourage peer learning, enhancing communication and comprehension skills. However, while technology provides numerous advantages, the extent of its impact depends on accessibility and proper integration into the curriculum. The findings reinforce the argument of Martin & Johnson (2021) that real-life exposure to language through digital resources improves language acquisition, yet challenges such as digital literacy gaps among students may hinder its full potential. The hypothesis test indicated a statistically significant difference in mean ratings of male and female English language teachers on how technology improves students' learning outcomes. This suggests that respondents viewed the issue differently. The observed difference could be attributed to difference in gender, varying levels of access, exposure, or engagement with technology.

Regarding assessment methods, the study found that technology facilitates real-time feedback, ensures accuracy in evaluating students' language skills, and motivates learners through gamified assessments. This supports Popham's (2011) assertion that technology-driven formative assessments allow teachers to monitor student progress and adjust instructional strategies accordingly. Additionally, Elmahdi, Al-Hattami, & Fawzi (2018) found that tools like Plickers enable real-time assessments, enhancing student engagement and comprehension. However, one notable exception in the findings was that respondents disagreed on whether technology effectively personalizes assessments by adjusting difficulty levels based on individual performance. This contradicts research by Williams & Patel (2023), who reported that AI-driven assessment platforms can adapt to students' learning needs, offering customized feedback. The discrepancy may stem from the limited use of AI-based assessment tools in Nigerian classrooms due to infrastructural and training challenges. Nevertheless, the findings affirm that technology plays a crucial role in

modernizing assessment methods, provided schools invest in the right digital tools and training for educators. The results of the hypothesis showed no significant difference in mean ratings among respondents based on how technology influence students' assessments methods. This indicates that respondents generally held similar opinions. A probable reason for this lack of variation could be a shared exposure to similar environmental, institutional, or instructional conditions that shape their views.

Conclusion

Based on the findings of the study, it was established that technology supports teachers' professional development, students' learning outcomes and students' assessment method for enhancing English language teaching in secondary schools in Onitsha north LGA Anambra State. Hence, it is concluded that technology should be integrated in English language instructions to enhance English language teaching in secondary schools in Onitsha north LGA Anambra state.

Recommendations

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

1. The government and school administrators should organize regular technology-driven training workshops and professional development programmes for English language teachers. These should focus on integrating digital tools like interactive whiteboards, language learning apps and online resources to improve instructional delivery and enhance teachers' digital skills.
2. Schools should adopt and integrate technology-based learning platforms such as educational software, online English tutorials and virtual classrooms to enhance students' engagement and learning outcomes.
3. Schools should incorporate digital assessment tools such as computer-based tests, online quizzes and AI-driven feedback systems to evaluate students' language proficiency effectively. These methods will provide instant feedback, track student progress and improve learning outcomes by identifying areas of improvement.

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