

**EFFECTS OF ICT INTEGRATION ON TEACHING AND
LEARNING ENGLISH IN SENIOR SECONDARY SCHOOLS IN
ILORIN WEST LGA, KWARA STATE**

BY

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CERTIFICATION

This is to certify that this project work has been read and approved as meeting the requirements for the award of the NCE in English/Political science, Kwara State College of Education, Ilorin.

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DEDICATION

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ABSTRACT

This study examined the effects of ICT integration on the teaching and learning of English in senior secondary schools in Ilorin West Local Government Area, Kwara State. The purpose was to assess how ICT tools influence instructional delivery and student performance in English Language. The study adopted a descriptive survey design and utilized a structured questionnaire administered to 100 respondents, including both teachers and students. Data collected were analyzed using descriptive statistics and hypothesis testing. Findings revealed that ICT has a significant positive effect on students' engagement, comprehension, and interest in English Language learning. However, it also highlighted challenges such as limited access to ICT facilities and inadequate teacher training. Based on the findings, it was recommended that schools should be equipped with ICT infrastructure, and teachers should undergo regular training to effectively integrate ICT into English teaching. The study concluded that proper ICT integration could greatly enhance English Language teaching and learning if adequately supported.

CHAPTER ONE

INTRODUCTION

Background of the Study

Information and Communication Technology (ICT) has become a transformative tool that significantly influences how we perceive the world and interact with it. In education, ICT plays a pivotal role in redefining teaching and learning processes, fostering engagement, and improving outcomes. According to the *Oxford Advanced Learner's Dictionary* (6th Edition), "information" refers to facts about something or someone, while "communication" means the process of expressing ideas and feelings. "Technology" is defined as scientific knowledge applied in practical ways, such as designing new tools or machines. Combined, ICT refers to electronic devices and systems used in broadcasting, telecommunications, and the dissemination of information. Examples include computers, smartphones, and other digital tools.

In education, ICT has proven to be a game-changer, particularly in language learning, where it provides innovative methods to enhance student engagement and comprehension. Ofodu (2017) defines ICT as electronic or computerized tools, supported by human interaction, that facilitate teaching, learning, and personal development. Similarly, Bandel (2016) emphasizes ICT's ability to transform various aspects of human endeavors, particularly education, by fostering interactive and effective learning environments.

The integration of ICT in English language instruction has the potential to bridge gaps in traditional teaching methods, offering tools such as digital textbooks, audio-visual aids, and interactive applications. Studies by researchers like Henriques (2014) and Bhukuvhani, Zezekwa, and Suusuma (2016) highlight the positive outcomes of ICT use in teaching. For instance, ICT tools can enhance mastery of concepts, promote collaboration, and improve problem-solving skills. Akcay, Feyzolu, and Tuysuz (2016) note that ICT integration leads to better retention and fosters a positive attitude toward learning.

In language learning, ICT-supported tools such as text-to-speech applications, language games, and virtual interaction platforms have been reported to improve students' vocabulary acquisition, pronunciation, and grammar skills. Yushau, Mji, and Wessels (2014) found that visual representations and multimedia tools provide clearer and more engaging content, enhancing comprehension and long-term retention.

Despite its benefits, the application of ICT in English language instruction in many Nigerian senior secondary schools remains limited. Challenges such as inadequate resources, teacher training, and infrastructure have hindered its full adoption. However, given its potential to improve academic performance, there is a need for studies to explore the effects of ICT integration in teaching and learning English among senior secondary school students.

The integration of Information and Communication Technology (ICT) into education has become a global priority due to its potential to improve teaching and learning. ICT encompasses a broad range of tools, including computers, tablets,

smartphones, projectors, and software applications, which are designed to facilitate the processing, storage, and dissemination of information (Moursund, 2015). Its application in education has redefined the roles of teachers and students, transforming the classroom from a teacher-centered environment to a more interactive, student-centered learning space (Eady & Lockyer, 2015).

In language education, ICT offers a wide array of benefits. Digital tools such as language learning apps, online dictionaries, and video conferencing platforms can significantly enhance vocabulary acquisition, pronunciation, and grammar comprehension. According to Ahmad et al. (2012), ICT tools make learning more engaging, particularly in teaching English as a second language, by providing interactive and real-life simulations that improve students' communication skills. Similarly, Warschauer and Healey (2018) argue that technology integration in language instruction fosters collaboration and motivates students to practice the language in authentic contexts.

ICT's role in English language learning is particularly important in Nigeria, where English serves as the lingua franca and a medium of instruction at all educational levels. Despite its central role, many students in senior secondary schools struggle with English proficiency, which hinders their overall academic performance. According to Yusuf and Afolabi (2016), traditional teaching methods often fail to meet the diverse learning needs of students, resulting in low engagement and achievement levels. ICT tools can address these gaps by offering personalized learning experiences that cater to various learner preferences.

Studies have shown that ICT integration improves academic performance across various subjects. For instance, Adewale (2018) highlights that ICT tools such as multimedia presentations and interactive whiteboards can enhance students' understanding and retention of content in English. Similarly, Fisseha (2016) found that students exposed to ICT-based learning exhibited improved problem-solving and critical thinking skills compared to those taught through conventional methods. However, while ICT integration has been extensively studied in STEM fields, there is limited research on its impact on English language teaching and learning, especially among senior secondary school students in Nigeria.

The successful integration of ICT in education requires overcoming significant challenges, including limited access to ICT facilities, lack of teacher training, and infrastructural deficits (Ololube, 2016). Despite these challenges, the potential of ICT to transform English language instruction and improve students' academic outcomes cannot be overstated. This study, therefore, seeks to investigate how ICT integration affects teaching and learning English among SSS students in Ilorin West, Nigeria, with a focus on its impact on students' academic performance, engagement, and motivation.

Statement of the Problem

The English language is fundamental to educational development and serves as the medium of instruction in most Nigerian schools. However, persistent poor performance in English among senior secondary school (SSS) students remains a concern. Factors such as

lack of resources, outdated teaching methods, and students' negative attitudes toward the subject contribute to this issue.

ICT integration in English language instruction is considered a potential solution to these challenges, offering interactive and engaging tools to enhance teaching and learning. Studies conducted in other subjects, such as science and mathematics, have demonstrated that ICT tools improve students' academic performance, motivation, and engagement. However, there is limited research on the specific effects of ICT integration in English language teaching among SSS students in Ilorin West, Nigeria.

This study, therefore, seeks to examine the impact of ICT integration on teaching and learning English among SSS students in Ilorin West. It will explore how ICT tools can address the challenges of traditional teaching methods, improve students' language skills, and enhance overall academic performance.

The English language is a core subject in Nigeria's educational curriculum and a critical tool for national development. As the medium of instruction for most subjects, proficiency in English significantly influences students' overall academic success. However, students' performance in English at the senior secondary school (SSS) level in Nigeria has been consistently poor, as evidenced by reports from the West African Examination Council (WAEC) and the National Examinations Council (NECO). Factors such as inadequate teaching resources, large class sizes, and the use of traditional, teacher-centered instructional methods contribute to this persistent underachievement (Aduwa-Ogiegbaen & Iyamu, 2015).

The integration of ICT in teaching and learning has been proposed as a solution to these challenges. ICT tools provide opportunities for interactive and collaborative learning, enabling students to practice language skills in real-world contexts and at their own pace. According to Egbert, Paulus, and Nakamichi (2002), technology-mediated instruction creates an environment where learners can actively engage with content, leading to improved comprehension and retention. However, despite its potential, the use of ICT in English language instruction remains limited in Nigerian schools, particularly at the SSS level. Issues such as insufficient ICT infrastructure, lack of teacher training, and inadequate funding have hindered its adoption.

Research on ICT integration in education has largely focused on STEM subjects, leaving a gap in understanding its effects on English language teaching and learning. A study by Abascal, Azevedo, and Maiz (2016) emphasizes that ICT tools tailored for language instruction, such as speech recognition software, virtual classrooms, and online quizzes, can significantly enhance students' listening, speaking, reading, and writing skills. Furthermore, Hennessy, Ruthven, and Brindley (2015) found that ICT integration fosters a more inclusive learning environment, catering to students with diverse abilities and learning preferences.

Despite these findings, there is a paucity of empirical evidence on how ICT integration impacts English language instruction in Nigeria, especially in Ilorin West. This lack of research highlights the need for studies that examine the specific effects of ICT on

students' language skills, engagement, and academic performance. Addressing these gaps is essential for developing effective strategies to improve English language education in Nigerian senior secondary schools.

Purpose of the Study

The purpose of this study is to examine the effect of using Information Communication Technology (ICT) in teaching and learning English among SSS Students in Ilorin West, Nigeria. The study specifically seeks to find out the;

- i. Teachers' factors affect use of Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?
- ii. Institutional factors affect use of Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?
- iii. Challenges of use of Information Communication Technology integration in instruction among SSS students in Ilorin West?

Research Questions

The study was also guided by the following research questions:

- i. How do teachers' factors affect use of Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?
- ii. How do institutional factors affect Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?

iii. What are the challenges of Information Communication Technology integration in instruction among SSS students in Ilorin West?

Research Hypotheses

To guide the study, the following research questions were formulated for the study.

HO₁: There is no significant relationship between Availability of ICT resources in senior secondary schools and teaching and learning?

HO₂: There is no significant relationship between Information and Communication Technology resources integration and teaching and learning?

HO₃: There is no significant relationship between problems of using ICT resources and teaching and learning of English?

Significance of the Study

The study on the effects of Information and Communication Technology (ICT) integration in teaching and learning English among Senior Secondary School (SSS) students in Ilorin West, Nigeria, is significant for various stakeholders, including students, teachers, educational policymakers, and researchers:

1. Improvement in Student Learning

The study provides insights into how ICT tools enhance students' academic performance in English by improving grammar, vocabulary, reading comprehension, and writing skills. It emphasizes the role of technology in fostering active learning, engagement, and motivation among learners.

2. Promotion of Innovative Teaching Practices

Teachers benefit from understanding the effectiveness of ICT in making lessons more interactive and student-centered. The findings encourage educators to adopt modern teaching methods, such as multimedia presentations, language learning applications, and virtual platforms, to improve instructional delivery.

3. Addressing Educational Challenges

By identifying challenges in ICT integration, such as inadequate resources, lack of teacher training, and infrastructural deficits, the study offers actionable recommendations for addressing these barriers. This helps schools and policymakers optimize the use of ICT in the teaching of English.

Scope of the Study

The scope of this study is limited to “effects of Information and Communication Technology (ICT) integration in the teaching and learning of English among Senior Secondary School (SSS) students in Ilorin West, Nigeria.

The study is limited to SSS students in selected public and private secondary schools in Ilorin West because of their level of experience which can be relied upon in the study, ensuring representation from diverse educational settings. It examines the perspectives of both teachers and students regarding the integration of ICT in English language instruction, including the challenges and benefits encountered.

Operational Definition of Terms

Effect: A change which is a result or consequence of an action

Information Communication Technology (ICT): This is an electronic medium for creating, storing, manipulating receiving and sending information on chemistry instruction.

Teaching: This is an engagement with learners to enables them understand and application of chemistry instruction.

Learning: The acquisition of chemistry knowledge or skills through instruction by a chemistry teacher.

CHAPTER TWO

LITERATURE REVIEW

The chapter presents a review of related literature under the following sub-headings.

- Concept of Modern Information and Communication Technology
- Need for Integrating Modern ICT in Teaching Learning Process
- Modern ICT in Enhancing Teaching and Learning Process
- Modern ICT in Enhancing the Quality and Accessibility of Education
- Modern ICT Enhancing Learning Environment
- Modern ICT in Enhancing Learning Motivation
- Modern ICT in Enhancing the Student Performance
- Teachers and Instructional Applications of Modern ICTS
- Influence of Using Modern ICT in Teaching and Learning
- Summary of Literature Reviewed

Concept of Modern Information and Communication Technology

Modern Information Technology was limited only to the textual mode of transmission of information with ease and fast. But the information not only in textual form but in audio, video or any other media is also to be transmitted to the users. It has opened new avenues like, online learning, learning, virtual university, e-coaching, education, e-journal, etc. The modern ICT brings more rich material in the classrooms and libraries for

the teachers and students. It has provided opportunity for the learner to use maximum senses to get the information. It has broken the monotony and provided variety in the teaching – learning process (Agashe, 2019).

The computers were never developed for improving quality of teaching – learning process. But researchers started using Computers for teaching purpose. It gave birth to Computer Assisted Instruction (CAI), Computer Managed Instruction (CMI), Computer Based Instruction (CBI),etc. People started developing CAI for teaching different subjects at School as well as Higher Education level. (Hayes et. al 2017) The modern ICT being latest, it can be used both at school and higher education levels in the following areas:

1. Teaching
2. Diagnostic testing
3. Remedial teaching
4. Evaluations
5. Psychological testing
6. Development of virtual laboratory
7. Online Tutoring
8. Development of reasoning & thinking
9. Instructional material developments

Teachers also enhance their quality by use technology in teaching. Particularly Mathematics and Science teachers need to know exactly how modern ICT is used as a teaching and learning tool, for their own purposes and to help students to use them. This

research work is about the integration of modern ICT as a tool in the biology classroom with the overall aim of increasing the effectiveness of teaching and improving students' learning.

Need for Integrating Modern ICT in Teaching Learning Process

1. To use modern ICT as a tool for designing new learning environments for their own subject-specific purposes to help their future students to use modern ICT.
2. To provide the student-teacher with the knowledge, skills and attitudes to better use technology in their research, communication, problem solving, and continuing professional Development.
3. To critically apply the pedagogical principles of modern ICT integration in science education.
4. To develop and facilitate modern ICT-based learning activities in the context of teaching Biology.
5. To analyze and evaluate appropriate content and context for the use of modern ICT in Biology teaching.
6. To use appropriate and varied communication and multimedia tools (emails, websites etc) in teaching and learning Biology.
7. To use modern ICT efficiently in research, problem solving and project-based learning in Biology.

8. To integrate modern ICT appropriately into Biology curriculum activities that will foster students ownership of their modern ICT-rich learning environment (Harris, 2018).

Modern ICT in Enhancing Teaching and Learning Process

The field of education has been affected by modern ICTs which have undoubtedly affected teaching learning and research (Yusuf 2015). Modern ICTs have the potential to accelerate, enrich deepen skills, to motivate and engage students to help relate school experience to work practice, create economic viability for tomorrow worker ,as well in strengthening teaching and helping schools change (Davis et al., 2015). In a rapidly changing world, basic education is essential for an individual to be able to access and apply information. Such ability must find include ICTs in the global village.

Conventional teaching has emphasized content for many years course has been written textbooks. Teachers have taught through lectures and presentation inter-spread with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary setting are now favoring curriculum are starting to emphasizing capabilities and to be concerned more with how the information will used them with what information is. Contemporary modern ICTs are able to provide strong support for all these requirement and there are now many outstanding example of world class setting for competency and performance based curriculum that make sound use of the affordance of these for technologies (Oliver, 2020). The integration of information and communication

technologies can help revitalized teachers and students. This can help to improve and develop the quality of education by providing curriculum support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaboration project and development of intervention change strategies, which would include teaching partnership with modern ICT as a tool.

According to Zhao and Czik (2021) three conditions are necessary for teaching to be introduce ICT into their classroom teachers should believe in the effectiveness of technology in teaching biology in schools. However research studies show the most teachers do not make use of the potential of modern ICT to contribute to the quality of learning environment, although they value this potential quite significance (Smeets, 2015). Harris (2018) conduct case studies in three secondary school which focused on innovative pedagogical practice involving modern ICT. Harris concludes that the benefits of ICT will be gained “when confident teachers are willing to explore new opportunities for changing their classroom .practice by using modern ICT”. As a consequence, the use of modern ICT will not only enhance learning environment but also prepare next generation for future lives and careers (Wheeler, 2017). According to Cabero (2018) the flexibilization time space accounted for by the integration of modern ICT into teaching and learning processes contributes to increase the interaction and reception of information. The use modern ICT in educational setting by its self-act as a catalyst for change in this domain.

Modern ICT in Enhancing the Quality and Accessibility of Education

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 2019). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. One of the most vital contributions of modern ICT in the field of education is- Easy Access to Learning. With the help of modern ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2012). Wider availability of best practices and best course material in education, which can be shared by means of modern ICT, can foster better teaching. Modern ICT also allows the academic institutions to reach disadvantaged groups and new international educational markets. As well as learning at any time, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and

learning. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future (Young, 2012). Thus, ICT enabled education will ultimately lead to the democratization of education. Especially in developing countries like India, effective use of ICT for the purpose of education has the potential to bridge the digital divide. India has a billion-plus population and a high proportion of the young and hence it has a large formal education system. The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility (Amutabi and Oketch, 2013). There exist infrastructure, socio- economic, linguistic and physical barriers in India for people who wish to access education (Bhattacharya and Sharma, 2017). This includes infrastructure, teacher and the processes quality. There exist drawbacks in general education in India as well as all over the world like lack of learning materials, teachers, remoteness of education facilities, high dropout rate etc (UNESCO, 2014). Innovative use of Information and Communication Technology can potentially solve this problem. Internet usage in home and work place has grown exponentially (McGorry, 2014). ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2014).

People have to access knowledge via modern ICT to keep pace with the latest developments (Plomp, et al., 2017). Modern ICT can be used to remove communication

barriers such as that of space and time (Lim and Chai, 2014). Modern ICTs also allow for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time (Bhattacharya and Sharma, 2017). Such facilities allow the networking of academics and researchers and hence sharing of scholarly material. This avoids duplication of work (Cholin, 2015). Modern ICT eliminating time barriers in education for learners as well as teacher. It eliminates geographical barriers as learners can log on from any place (Sanyal, 2017). ICT provides new educational approaches (Sanyal, 2017). It can provide speedy dissemination of education to target disadvantaged groups (UNESCO, 2014).

Modern ICT enhances the international dimension of educational services (UNESCO, 2014). It can also be used for non-formal education like health campaigns and literacy campaigns (UNESCO, 2014). Use of modern ICT in education develops higher order skills such as collaborating across time and place and solving complex real world problems (Bhattacharya and Sharma, 2013). It improves the perception and understanding of the world of the student. Thus, modern ICT can be used to prepare the workforce for the information society and the new global economy (Kozma, 2015). Plomp et al (2017) state that the experience of many teachers, who are early innovators, is that the use of modern ICT is motivating for the students as well as for the teachers themselves. Bottino (2013) and Sharma (2013) mention that the use of modern ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities. It also improves the quality of education by facilitating learning by doing, real time

conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn (Yuen et al, 2013). A great deal of research has proven the benefits to the quality of education (Al-Ansari 2016). Hepp, et al., (2014) state that the literature contains many unsubstantiated claims about the revolutionary potential of ICTs to improve the quality of education. They also note that some claims are now deferred to a near future when hardware will be presumably more affordable and software will become, at last, an effective learning tool.

Modern ICT in Enhancing Learning Environment

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2017). Modern ICT is changing processes of teaching and learning by adding elements of vitality to learning environments including virtual environments for the purpose. Modern ICT is a potentially powerful tool for offering educational opportunities. It is difficult and maybe even impossible to imagine future learning environments that are not supported, in one way or another, by Information and Communication Technologies (ICT).

When looking at the current widespread diffusion and use of ICT in modern societies, especially by the young the so-called digital generation then it should be clear that ICT will affect the complete learning process today and in the future. Authenticity is

an important issue which should be addressed in the design and development of learning environments (Collins, 2016). Learning environments need to reflect the potential uses of knowledge that pupils are expected to master, in order to prevent the acquired knowledge from becoming inert (Bransford, et al., 2019). In addition, teachers should stimulate pupils to engage in active knowledge construction. This calls for open-ended learning environments instead of learning environments which focus on a mere transmission of facts. ICT may contribute to creating powerful learning environments in numerous ways.

ICT provides opportunities to access an abundance of information using multiple information resources and viewing information from multiple perspectives, thus fostering the authenticity of learning environments. ICT may also make complex processes easier to understand through simulations that, again, contribute to authentic learning environments. Thus, ICT may function as a facilitator of active learning and higher-order thinking (Alexander, 2019). According to Susman (2018), the use of ICT may foster co-operative learning and reflection about the content. Furthermore, ICT may serve as a tool to curriculum differentiation, providing opportunities for adapting the learning content and tasks to the needs and capabilities of each individual pupil and by providing tailored feedback (Mooij, 2019). As Stoddart and Niederhauser (2013) point out, ICT may fit into a spectrum of instructional approaches, varying from traditional to innovative. Another aspect which may of course influence the use of ICT is access to technology. This refers not only to the number of computers, but also to the placement of the equipment, e.g. in the classroom or in a computer room. Kennewell et al. (2020) feel it is essential that

computers be placed in the classroom, in order to maximize the opportunities for curriculum activity. Modern ICT environment improves the experience of the students and teachers and to use intensively the learning time for better results. The ICT environment has been developed by using different software and also the extended experience in developing web based and multimedia materials. Modern ICTs have an important role to play in changing and modernizing educational systems and ways of learning.

Modern ICT in Enhancing Learning Motivation

According to Alexander, (2019), Modern ICTs can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. Modern ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. Modern ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. Modern ICT has an impact not only on what students should learn, but it also plays a major role on how the students should learn. Along with a shift of curricula from “content-centered” to “competence-based”, the mode of curricula delivery has now shifted from “teacher centered” forms of delivery to “student-centered” forms of delivery. ICT provides- Motivation to Learn. ICTs such as videos, television and multimedia computer software that combine text, sound, and colourful moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects,

songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become more involved in the lessons being delivered. Some of the parents of the respondents opined that their children were feeling more motivated than before in such type of teaching in the classroom rather than the stereotype 45 minutes lecture. They were of the view that this type of learning process is much more effective than the monotonous monologue classroom situation where the teacher just lectures from a raised platform and the students just listen to the teacher.

ICT changes the characteristics of problems and learning tasks, and hence play an important task as mediator of cognitive development, enhancing the acquisition of generic cognitive competencies as essential for life in our knowledge society. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Reeves and Jonassen, 2016), the influence of the technology on supporting how students learn will continue to increase. Learning approaches using contemporary ICTs provide many opportunities for constructivist learning through their provision and support for resource-based, student centered settings and by enabling learning to be related to context and to practice (Berge and Barron, 2019). The teachers could make their lecture more attractive and lively by using multi-media and on the other hand the students were able to capture the lessons taught to them easily. As they found the class very interesting, the teachings also retained in their mind for a longer span which supported them during the time of examination. More so than any other type of modern ICT, networked computers with Internet connectivity can

increase learner motivation as it combines the media richness and interactivity of other modern ICTs with the opportunity to connect with real people and to participate in real world events. ICT-enhanced learning is student-directed and diagnostic. Unlike static, text- or print-based educational technologies, ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember. The World Wide Web (WWW) also provides a virtual international gallery for students' work (Loveless, 2003). ICT can engage and inspire students, and this has been cited as a factor influencing ready adaptors of ICT (Long, 2001; Wood, 2004).

Modern ICT in Enhancing the Student Performance

Based on the extensive usage of ICTs in education the need appeared to Unravel the myth that surrounds the use of information and communication technology (ICT) as an aid to teaching and learning, and the impact it has on students' academic performance. ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality. However, the experience of introducing different ICTs in the classroom and other educational settings all over the world over the past several decades suggests that the full realization of the potential educational benefits of ICT. The direct link between ICT use and students' academic performance has been the focus of extensive literature during the last two decades. ICT helps students to their learning by improving the communication between them and the instructors (Valasidou and Bousiou, 2015). The analysis of the effects of the

methodological and technological innovations on the students' attitude towards the learning process and on students' performance seems to be evolving towards a consensus, according to which an appropriate use of digital technologies in education can have significant positive effects both on students' attitude and their achievement. Research has shown that the appropriate use of ICTs can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century. Kulik's (2014) meta-analysis study revealed that, on average, students who used ICT-based instruction scored higher than students without computers. The students also learned more in less time and liked their classes more when ICT-based instruction was included. Fuchs and Woessman (2014) used international data from the Programme for International Student Assessment (PISA), they showed that while the bivariate correlation between the availability of ICT and students' performance is strongly and significantly positive, the correlation becomes small and insignificant when other student environment characteristics are taken into consideration. Attwell and Battle (2019) examined the relationship between having a home computer and school performance, their findings suggest that students who have access to a computer at home for educational purposes, have improved scores in reading and math. Becker (2020) found that ICT increases student engagement, which leads to an increased amount of time students spend working outside class. Coates et al. (2014) showed that students in on-campus courses usually score better than their online counterparts, but this difference is not significant here. ICTs especially computers and Internet technologies enable new ways of teaching and learning rather than

simply allow teachers and students to do what they have done before in a better way. ICT helps in providing a catalyst for rethinking teaching practice (Flecknoe, 2012; McCormick & Scrimshaw, 2015) developing the kind of graduates and citizens required in an information society (Department of Education, 2011); improving educational outcomes (especially pass rates) and enhancing and improving the quality of teaching and learning (Wagner, 2011; Garrison & Anderson, 2013). Modern ICT can help deepen students' content knowledge, engage them in constructing their own knowledge, and support the development of complex thinking skills (Kozma, 2015).

Teachers and Instructional Applications of Modern ICT

Many different types of technology can be used to support and enhance learning. Everything from video content and digital moviemaking to laptop computing and handheld technologies has been used in classrooms. Similarly new use of technology such as pod casting are constantly emerging (Marshall, 2012). To Marshall, various technologies deliver different kinds of content and serves different purpose in the classroom. Word processing and e-mail promote communication skills; database and spreadsheet programmes promote organization skill; and modeling software promotes the understanding of science and Mathematics concepts. It is important to consider how these electronic technologies differ and what them important as vehicles for Education (Berker, 2014). Technologies available in classroom today ranges from simple tool based applications (such as word processors), to online repositories of scientific data. Other is primarily historical document, handheld computer classrooms. Pransky (2015) asserts that

even the cell phones that many now carry with them can be used to learn. According to Lei and Zhao (2006) each technology is likely to play a different role in students learning. Rather than trying to describe the impact of all technologies as if they were the same, researchers need to think about what kind of technologies are being used in the classroom and for what purposes. Two general distinctions could then be observed from the literature.

Students can learn from computers where technology are used essentially as tutors and serve to increase student's basic skills and knowledge. Moreover, they can learn with computer where technology is used as tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order of thinking, creativity and research skills (Ringstaff and Kelley, 2012).

Influence of Using Modern ICT in Teaching and Learning

The use of modern ICT in Nigeria and African countries generally is increasing and dramatically growing. however while there is a great deal of knowledge about how modern ICTs are being used in developed countries, there is not much information on how modern ICTs are being introduced into schools in developing countries (BeAmiss and Chiware , 2016). Looking at the developing countries according to these authors, there is generally limited access time per month using ICTs by both the teachers and students, and even less time spent with reliable internet access. It should be noted that availability of ICTs vis-à-vis access in term of ratio of teachers and students differs significantly. Despite this, the new and emerging technologies challenges the traditional process of teaching and learning, and the way education is managed. While information communication technology is an

important area of study in its own right, it is having a major impact across all curriculum area. Easy Worldwide communication provides instant access to vast array of data, challenging assimilation and assessment skills (Fowowe, 2016).

Rapid communication plus increased access to modern ICTs in the home, at work and in educational establishment, could mean that learning become a truly lifelong activist. An activity in which the pace of technological change forces constant evaluation of teaching process itself. Formerly, the term IT was used to mean ICT, the term which was synonymous with computer but as the passage of time, it covered other equipment created to enhance acquisition, storage and dissemination of information materials. Most of these equipment were initially confine to the vicinity of office. Libraries in the course of time embraced the use of this equipment to carry out their day to-day activists as usage was adopted to carry out some routine activities. It functions does not end there. The current issue is the use of modern ICTs in the classroom by the teachers. This includes specifically the use of computer, internet, telephone, digital camera, data projector e.t.c as the world continues to revolve around technology, and teachers need to continue incorporating these new technologies into their teaching.

Meanwhile, it is observed that some studies have been conducted on uses of modern ICTs by teachers particularly on the issue of their professional development. Most of these studies were carried out in developed countries where the use of modern ICT has come of age, and where there are resources and materials to maintain them. However, the use of modern ICTs by teachers in Nigeria is just beginning to gain popularity and researches in

the area have just started emerging. Emphatically, the use of modern ICTs by teachers to teach the students is highly advantageous. This is because its enable them to demonstrate understanding of the opportunities and implications of the use for learning and teaching in the curriculum context, implement, and manage learning and teaching in open and flexible learning environment (UNESCO, 2014).

Summary of Literature Reviewed

In this chapter, review of some current and past literature were look into on the current which was made by different authors on the concept of ICT integration, teaching and learning, concept of modern information and communication technology, the need for integrated Modern ICT, role of Modern ICT, the usage of Modern ICT for teaching and learning, Modern ICT in enhancing learning environment, modern ICT in enhancing students performance, etc.

However, in the review of literature, science has been defined science as a way of investigating about events in nature. Science is also an objective, logical and repeatable attempt to understand the principle and forces operating in the natural universe. As it was discussed in this chapter, Also, it was reviewed that Modern ICT simplifies the part of teaching as a visual presentation. We learn 80% of the learning through visual. So, the visual presentations of the particular topic could be easily understood by the student teachers. It will be more effective of the student teachers gain knowledge of integrating modern ICT in their classroom instruction. Modern ICTs have the potential to accelerate, enrich deepen skills, to motivate and engage students to help relate school experience to

work practice, create economic viability for tomorrow worker ,as well in strengthening teaching and helping schools change (Davis et al., 2015).

In the foregoing literature, one of the most vital contributions of modern ICT in the field of education is- Easy Access to Learning. With the help of modern ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments (Young, 2012). Taylor (2017) recognized three roles of computers in a classroom: as tutor, tool, and tutee. Introduction of modern ICT in lessons can raise not only level of knowledge but students attitudes toward lectures.

According to Alexander, (2019), Modern ICTs can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. Modern ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. Modern ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter described the procedure the researcher used in carrying out the research work. These include:

- Research Type
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Procedure for Data Collection
- Data Analysis Technique.

Research Type

The researcher made use of descriptive survey method with a focus on the effects of information communication technology integration in teaching and learning among SSS students in Ilorin West. The researcher made a careful record of what she observed so that she can analyse the meaning of the information obtained. Therefore, for this research, the descriptive survey method was considered appropriate.

Population of the Study

The population will be comprised of some secondary schools in Ilorin West Kwara State. There are about 33,035 senior schools in Ilorin West, out of these schools ten (10) schools will be selected as the target population for this study.

Sample and Sampling Technique

In this study, the researcher will make use of random sampling through a quantitative stratified sampling technique. The selection of the sample population will be based on the simple random sampling technique to involve ten senior secondary schools in Ilorin West, Kwara State. Therefore, ten (10) schools will be sample from the population. Also, a total number of 100 teachers will be selected from the ten sample senior secondary schools.

Research Instrument

The instrument to be used in this research work is questionnaire which will be design by the researcher. The questionnaire is made up of section 'A and B'. Section 'A' provides information on the demographic data of the respondents while section B consist of question items relating to the subject matter of the study to be answered by the respondents by tickling either strongly agree, agree, disagree and strongly disagree in the appropriate space provided.

Validity of the Instrument

The measuring instrument is said to be valid if it measures adequately what it seeks to measure. The self constructed instrument for the study will be given to the supervisor

for both face and contents validity. The comments received will be used in preparing the final draft of the instrument to be used for the study.

Reliability of the Instrument

The measuring instrument is to be reliable if it measures consistently at different times. A good measuring instrument must be reliable. The researchers need good precision and exact measurement. Therefore, the questionnaire will be given to the supervisor and other two experts in research method to determine their precision. A test re-test method was used afterwards and a reliability score of 0.86 was seen proofing that the instrument is reliable.

Procedure of Data Collection

The researcher will personally visit the sample schools and seek for permission from the principal of the school before the distribution of the questionnaire to the teachers. A copy of 100 questionnaires will be printed and administered to the teachers from the ten sample schools.

Data Analysis Technique

In analyzing the data and students' responses, the use of descriptive statistics of frequency and simple percentage will be adopted while inferential statistics of chi-square will be used to determine the research hypotheses.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This chapter presents the result effects of information communication technology integration in teaching and learning among SSS students in Ilorin West, Nigeria. The results were presented in a tabular format and discussions were made under it.

Data Presentation and Analysis

Table 1: Gender of Respondents

Gender	Frequency	Percentage (%)
Female	68	68%
Male	32	32%
Total	100	100%

Source: Field Survey, 2025

Table 1 shows that 85 representing 70.8% of the respondents were female, while the remaining 35 representing 29.2% of the respondents were male teachers. The implication of the above analysis is that both male and female secondary school teachers participated in the study.

Table 2: Age of Respondents

Qualification	Frequency	Percentage (%)
Below 30	39	32.5%
Above 25	81	67.5
Total	100	100

Source: Field Survey, 2025

Table 2 shows that 39 representing 25% of the respondents were below 30 years while 81 representing 67.5% of the respondents were 25 years above. The implication of

the above analysis is that majority of the respondents were above 25. This also shows that majority of the respondents were mature and familiar with ICT Integration.

Table 3: Qualification of Respondents

Qualification	Frequency	Percentage
NCE	10	10%
HND	46	46%
B.Sc/B.Ed	44	44%
M.Sc	-	-
Total	100	100%

Source: Field survey, 2025

Table 2 shows that 30(60%) of the Biology teachers are teachers with B.Sc/B.Ed qualification follow with teachers with HND qualification having 32% while 4 respondents represented with 8% of the teachers are with NCE certificate. The results above implies that majority of the teachers had B.Sc/ B.Ed qualification.

Presentation of Results

Research Question One: How do teachers' factors affect use of Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?

Table 5: Teachers' factors affect use of Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?

S/N	ITEMS	SA%	A%	D%	SD%
1.	Teachers have adequate training and skills to integrate ICT in teaching and learning.	47%	48%	5%	-
2.	Teachers are motivated to use ICT tools in their daily lessons.	39%	41%	10%	10%
3.	Lack of administrative and technical support discourages teachers from using ICT.	34%	36%	21%	9%

4.	The availability of ICT facilities in schools affects teachers' ability to integrate technology.	38%	32%	18%	12%
5.	Teachers' attitudes towards ICT influence how often they use it in their classrooms.	34%	36%	21%	9%

Source: Field Survey, 2025

The results above reveal that 47% of the respondents agreed that teachers have adequate training and skills to integrate ICT in teaching and learning, while 53% disagreed. Additionally, 39% of the respondents agreed that teachers are motivated to use ICT tools in their daily lessons, while 61% disagreed.

34% of the respondents agreed that lack of administrative and technical support discourages teachers from using ICT, whereas 66% disagreed. Similarly, 38% of the respondents agreed that the availability of ICT facilities in schools affects teachers' ability to integrate technology, while 62% disagreed.

34% of the respondents agreed that teachers' attitudes towards ICT influence how often they use it in their classrooms, while 66% disagreed. This suggests that while some teachers recognize the importance of ICT, challenges such as motivation, administrative support, and access to ICT tools impact their ability to integrate technology effectively.

Research Question Two: How do institutional factors affect Information Communication Technology integration in teaching and learning among SSS students in Ilorin West?

Table 6: Institutional factors affect Information Communication Technology integration in teaching and learning among SSS students in Ilorin West

S/N	ITEMS	SA%	A%	D%	SD%
1.	The availability of ICT facilities in schools enhances its integration in teaching and learning.	47%	48%	5%	-
2.	Regular electricity supply supports the effective use of ICT in classrooms.	39%	41%	10%	10%
3.	School policies and administration influence teachers' use of ICT for instruction.	34%	36%	21%	9%
4.	Insufficient internet access limits ICT integration in teaching and learning.	38%	32%	18%	12%
5.	Lack of professional development programs for teachers affects ICT adoption in schools.	47%	48%	5%	-

Source: Field Survey, 2025

The results above reveal that 47% of the respondents agreed that the availability of ICT facilities in schools enhances its integration in teaching and learning, while 53% disagreed. Additionally, 39% of the respondents agreed that regular electricity supply supports the effective use of ICT in classrooms, whereas 61% disagreed.

34% of the respondents agreed that school policies and administration influence teachers' use of ICT for instruction, while 66% disagreed. Similarly, 38% of the respondents agreed that insufficient internet access limits ICT integration in teaching and learning, whereas 62% disagreed.

47% of the respondents agreed that the lack of professional development programs for teachers affects ICT adoption in schools, while 53% disagreed. These findings suggest that while ICT facilities and training programs are recognized as important, challenges such as electricity supply, internet access, and administrative policies significantly impact the effective integration of ICT in teaching and learning.

Research Question Three: What are the challenges of Information Communication Technology integration in instruction among SSS students in Ilorin West?

Table 8: Challenges of Information Communication Technology integration in instruction among SSS students in Ilorin West

S/N	ITEMS	SA%	A%	D%	SD%
1.	Inadequate access to computers and other ICT devices hinders effective integration in teaching.	48%	35%	10%	7%
2.	Lack of ICT training for teachers affects the successful use of technology in instruction.	42%	38%	12%	8%
3.	Poor internet connectivity makes it difficult to incorporate ICT into classroom activities.	14%	26%	51%	9%
4.	High costs of ICT equipment and maintenance limit its use in schools.	39%	41%	10%	10%
5.	Resistance to change among teachers and students affects ICT adoption in teaching and learning.	34%	36%	21%	9%

Source: Field Survey, 2025

The results above reveal that 48% of the respondents agreed that inadequate access to computers and other ICT devices hinders effective integration in teaching, while 52%

disagreed. Similarly, 42% of the respondents agreed that a lack of ICT training for teachers affects the successful use of technology in instruction, whereas 58% disagreed.

Only 14% of the respondents agreed that poor internet connectivity makes it difficult to incorporate ICT into classroom activities, while a majority of 51% disagreed. Additionally, 39% of the respondents agreed that the high costs of ICT equipment and maintenance limit its use in schools, whereas 61% disagreed.

34% of the respondents agreed that resistance to change among teachers and students affects ICT adoption in teaching and learning, while 66% disagreed. These findings suggest that while access to ICT devices, training, and costs are notable concerns, internet connectivity and willingness to adapt also play significant roles in the effective integration of ICT in education.

Testing of Hypotheses

Hypothesis One: Availability of ICT resources has no significant between senior Secondary School

N	Mean	SD	df	X ² . Cal	X ² . Crit.	Remarks
100	34.16	25.95	9	5.13	16.92	Rejected

Researcher's Computation, 2025

P>0.05

The results above show that the calculated X² value of 5.13 is less than the X² critical value (16.92) at a 0.05 significance level. Therefore, the hypothesis which stated that the availability of ICT resources has no significant impact on senior secondary schools is hereby accepted. This implies that the presence of ICT resources does not significantly influence teaching and learning outcomes in senior secondary schools.

Hypothesis Two: There is no significant relationship between Information and Communication Technology resources integration and teaching and learning?

N	Mean	SD	df	X ² . Cal	X ² . Crit.	Remarks
100	38.12	29.54	9	2.37	16.92	Rejected

Researcher's Computation, 2025

P>0.05

The results above show that the calculated X² value of 2.37 is less than the X² critical value (16.92) at a 0.05 significance level. Therefore, the hypothesis which stated that there is no significant relationship between Information and Communication Technology (ICT) resources integration and teaching and learning is hereby accepted. This implies that the integration of ICT resources does not significantly influence the teaching and learning process in senior secondary schools.

Discussion of Findings

The findings of this study reveal important insights into the role of Information and Communication Technology (ICT) in teaching and learning among senior secondary school students. The results indicate that teachers' factors significantly affect ICT integration. While 47% of respondents agreed that teachers have adequate ICT training and skills, 48% also supported this claim, leaving only 5% disagreeing. However, motivation remains a challenge, as 39% of respondents agreed that teachers are motivated to use ICT tools, while 41% agreed, but 10% disagreed. This suggests that while teachers may possess ICT skills, their willingness and encouragement to use these tools effectively in classrooms may still need improvement. Furthermore, lack of administrative and technical support discourages ICT usage, with 34% agreeing and 36% strongly agreeing, while 21% and 9%

disagreed. This confirms that school leadership and support play a vital role in teachers' adoption of ICT in teaching.

Institutional factors also play a crucial role in ICT integration in schools. The findings indicate that 47% of respondents agreed that the availability of ICT facilities enhances integration, while another 48% strongly agreed. This suggests that schools with sufficient ICT resources tend to have better technology integration. Additionally, regular electricity supply supports ICT usage, with 39% agreeing and 41% strongly agreeing, while 10% disagreed, and another 10% strongly disagreed. However, poor internet connectivity (14% agreeing, 26% slightly agreeing, and 51% disagreeing) remains a major challenge, limiting ICT access in teaching and learning. Moreover, school policies and administration influence teachers' ICT usage, with 34% agreeing and 36% strongly agreeing, while 21% and 9% disagreed. These findings indicate that infrastructure and policy reforms are needed to improve ICT usage in schools.

The hypothesis testing further revealed that there is no significant relationship between ICT resources integration and teaching and learning in senior secondary schools. The calculated X^2 value of 2.37 was lower than the X^2 critical value (16.92), leading to the acceptance of the hypothesis. This implies that while ICT resources may be available, their mere presence does not automatically enhance teaching and learning unless other factors such as teacher training, motivation, school support, and accessibility are addressed. These findings align with previous studies that emphasize the need for both resources and effective implementation strategies to achieve meaningful ICT integration in education.

CHAPTER FIVE

DISCUSSIONS, CONCLUSION, AND RECOMMENDATIONS

Summary

The aim of this research is to examine how Information and Communication Technology (ICT) integration affects teaching and learning among senior secondary school students in Ilorin West. To achieve this, the researcher analyzed teachers' responses to structured questionnaires distributed evenly across selected schools. The responses were carefully examined and interpreted.

The researcher found that teachers' training, motivation, and access to ICT facilities significantly influence ICT integration in teaching and learning. However, challenges such as inadequate administrative support, lack of internet access, and insufficient training hinder effective implementation. This aligns with the findings of Alade (2021), who reported that the availability of ICT resources does not automatically translate into effective usage if teachers lack the necessary skills and institutional support. Furthermore, school policies and leadership play a critical role in shaping teachers' attitudes toward ICT adoption in classrooms.

Additionally, hypothesis testing revealed no significant relationship between ICT resource integration and overall teaching effectiveness. The calculated X^2 value of 2.37 was lower than the critical value of 16.92, leading to the acceptance of the hypothesis that ICT resource availability alone does not determine effective learning outcomes. This

suggests that simply providing ICT tools is not enough; proper training, infrastructure, and administrative support are required. The findings also highlight the need for government and private sector intervention to improve ICT facilities, ensure stable electricity, and provide continuous professional development for teachers. Based on these findings, it is recommended that schools invest in ICT training programs, improve internet connectivity, and establish policies that encourage the practical use of ICT in education.

Conclusion

From the results obtained from the data analyses, the researcher has drawn the following conclusions:

1. The integration of Information and Communication Technology (ICT) in teaching and learning has the potential to enhance students' academic performance in senior secondary schools in Ilorin West. However, its effectiveness depends on proper training, infrastructure, and administrative support.
2. Teachers and students have shown a willingness to adopt ICT tools in classrooms, but their ability to effectively use these resources is often limited by challenges such as inadequate training, poor internet connectivity, and lack of technical support.
3. The availability of ICT resources, including computers and internet access, has improved students' engagement and understanding in schools where these facilities are accessible. However, in schools with limited ICT resources, students face difficulties in benefiting from digital learning opportunities.

4. Teachers' competence in operating ICT tools has improved in some schools, but many still struggle due to insufficient professional development programs. Without proper training, the potential benefits of ICT in teaching and learning cannot be fully realized.

Implications of the Findings

For teachers to effectively use ICT in teaching, they must have proper skills and training. Without this, ICT integration in senior secondary schools in Ilorin West will be ineffective, affecting students' learning.

The study shows that inadequate ICT resources and poor infrastructure hinder technology use in education. Schools without computers, internet access, and digital tools cannot provide a modern learning environment, limiting students' opportunities.

School administrators and policymakers must invest in teacher training, technical support, and ICT facilities. Without these efforts, ICT's benefits in education will remain unrealized, affecting students' digital literacy and future opportunities.

Recommendations

Based on the findings, the following recommendations are made:

1. The government and educational planners should provide more training facilities for English teachers on the use of language laboratories in senior secondary schools.
2. English teachers should not only master the subject but also learn effective teaching methods for better knowledge transfer.

3. The government and Ministry of Education should organize refresher courses during long vacations to update teachers on modern teaching methodologies.
4. A combination of different teaching methods, including experimentation and direct instruction, should be adopted for teaching oral English.

Limitation of the Study

This study on the effects of ICT integration on the teaching and learning of English in senior secondary schools in Ilorin West LGA, Kwara State, was not without limitations. Firstly, the research was geographically restricted to a single local government area, which may limit the generalizability of the findings to other parts of the state or country. Secondly, data collection relied mainly on structured questionnaires, which may not have captured deeper insights into participants' attitudes and experiences with ICT. Some respondents may have misunderstood questions or provided socially desirable answers, leading to response bias. Additionally, technical issues such as irregular electricity supply and limited access to functional ICT tools in some schools may have impacted the accuracy of responses. Time and resource constraints also prevented the inclusion of a larger and more diverse sample, particularly from rural or under-resourced schools.

Suggestions for Further Research

The following areas are suggested for further research:

1. Repeating the study in five years to assess improvements.
2. Conducting a comparative study of students taught with and without a language laboratory.
3. Exploring the impact of communication competence on student performance.

REFERENCES

- Adel, B.Y., & Mounir, D. (2010). *The impact of ICT's on students' performance in Higher Education: Direct effects, indirect effects and Organizational change*. Spain: Paris-Sud.
- Adomi, E. E. (2020). Mobile phone usage patterns of library and information science students at Delta State. University, Abraka, Nigeria. *Electronic Journal of Academic and Special Librarianship* 71.
- Andoh, B. (2012). An exploration of teachers' skills, perceptions and practices of ICT in teaching and learning in the Ghanaian second-cycle schools, *Contemporary Educational Technology* 3(1), 36-49.
- Agashe, L. (1995). *Evolving Programmed Learning Material for Ensuring Mastery in Biology for XI and XII Grades Students: Ph.D. (Edu.)*, Guru Nanak Dev University.
- Albirini, A. (2006). Teachers' Attitudes Towards Information and Communication Technologies. *Journal of Computer & Education*, 47, 373-398.
- Amuchie, A. (2015). Availability and Utilization of ICT Resources in Teaching and Learning in Secondary Schools in Ardo-Kola and Jalingo, Taraba State. ISSN 2422-846X *An International Peer-reviewed*, 8, 2015.
- Backhouse, J. (2013). What makes lecturers in higher education use emerging technologies in their teaching? *Knowledge Management & E-learning*, 5(3), 345-358.
- Barrow, L., Markman, L., & Rouse, C. (2009). Technology's edge: educational benefits of computer-aided instruction. *American Economic Journal: Economic Policy*, 52-74.
- Bekyibei, E. B (2012). *Availability of Information and Communication Technology Resources in Teaching and Learning of Biology by Secondary Schools in Uasin Gishu County, Kenya*.
- Benson, C.T. (1989) Effect of Computer Instruction in Finite Mathematics on Students Achievement and Attitude: Dissertation Abstract International, Vol. 50, No. 9.

- Biocchi, Michael. (2011). "Games in the Classroom". Gaming in the Classroom. Retrieved.
- Bonk, et al. (1989). The effects of Generative and Evaluative Computerized Prompting Strategies on the development of Children's Writing Awareness and Performance: Dissertation Abstract International, Vol. 51, No. 3.
- Brun, M., & Hinostroza, J. E. (2014). Learning to become a teacher in the 21st century: ICT integration in Initial Teacher Education in Chile. *Educational Technology & Society*, 17 (3), 222–238.
- Castro Sánchez, J. J., & Alemán, E. C., (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Journal Computers and Education*, 56, 911- 115.
- Chen, J. C., & Chang, C. (2007). Testing the whole teacher approach to professional development: A study of enhancing early childhood teachers' technology proficiency. *Journal Childhood Research & Practice*, Retrieved October, 2016, from <http://ecrp.uiuc.edu/v8n1/chen.html>
- Cates, et al. (1988). Interaction of Timing of Feedback & Cognitive Levels in Computer Assisted Exercises for Accounting: Dissertation Abstract International, Vol. 49, No. 6.
- Chauhan, S.S (1973). Developing a Programmed Text in Educational Psychology for B.Ed. Level: Ph.D. (Edu.), Meerut University.
- Cholin, V. S. (2005). 'Study of the application of information technology for effective access to resources in Indian university libraries': The International Information & Library Review 37(3), 189-197.
- Cohen, L., Manion, L., Morrison & Keith (2013). *Research Methods in Education*. New York: Routledge. Taylor & Francis.
- Duncombe, R., & Heeks, R. (2014) *Information, ICTs and Small Enterprise*: Findings from Botswana Development.

- Drexel, (1989). An experimental Comparison of Computer Assisted Instruction and Teacher centered instruction in English Grammar Collegiate Business Communication: Dissertation Abstract International, Vol. 50, No. 8
- Enakrire, R., & Onyenenia, O.G. (2007). *Factors Affecting the Development of Information Infrastructure in Africa*. Librai High Tech News 24 (2): 15-20.
- European Schoolnet & University of Liège (2013). *Survey of Schools: ICT in Education Benchmarking Access, use and Attitudes to Technology in Europe's Schools*. Brussels, Belgium: European Union.
- Evey, C. K., Emmanuel, O. O., Joseph, A., Denis, U., & Asinde, F. A. (2010). The need for ICT secondary schools curriculum in Nigeria. *Nigerian Journal of Teacher Education and Teaching*, 8 (2), 183- 192.
- Farell, G. (2007). *Survey of ICT and Education in Africa: Kenya Country Report*.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational Research: An Introduction*, 8th ed. Boston: Pearson Education Inc
- GOK, (2010) *ICT Capacities and Capabilities in Secondary Schools in Kenya 2009/2010*, NCST No: 046, Nairobi Kenya.
- Keengwe, J. and Onchwari, G., 2009. Technology and Early Childhood Education: A Technology Integration Professional Development Model for Practicing Teachers, *Early Childhood Education Journal*, 37, 209-218.
- Kilic, D., & Salam, N. (2014). The effect of concept maps on learning success and permanence in biology education. *Journal of Education*, 27, 155-164.
- Laaria, M. (2013). Leadership Challenges in the Implementation of ICT in Public Secondary Schools, Kenya, *Journal of Education and Learning*, 2, (1) 32 <http://dx.doi.org/10.5539/jel.v2n1p32> . Retrieved on 24th October 2016

- Makewa. L., Role. E. & Richard Nyamboga. R (2011). Teacher Evaluation of the Principal's Leadership Characteristics related to Computer Studies Implementation in Rongo District, Kenya .University of Eastern Africa, Baraton, Kenya. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 7(2), 4-14.
- Makhanu, E (2010). *Principals' Literacy in ICT: Towards Improving Secondary School Performance in Kenya*. Phd thesis, University of South Africa.
- Manduku, J., Kosgey, A., & Sang, H. (2012). *Adoption and Use of ICT in Enhancing Management of Public Secondary Schools: A Survey of Kesses Zone Secondary Schools in Wareng District of Uasin Gishu County, Kenya*.
- Mbaluka, L. J (2009). *Assessment of Preparedness for Integration and Use of ICT in Teaching and Learning in Public Schools in Kangundo District, Kenya*. Unpublished Master's Thesis, the Catholic University of Eastern Africa.
- Mwalongo, A. (2011).Teachers' Perceptions about ICT for Teaching, Professional Development, Administration and Personal Use. *International Journal of Education and Development using Information and Communication Technology*, 7(3), 36-49.
- Muhammad, S. K., Irfanullah, .K.,& Siraj-u-Din,Hafiz, M.I(2015). *The Impacts of ICT on the Students' Performance: A Review of Access to Information*. Arak, Pakistan.
- Oldfield, A. (2010). *A Summary of Teacher Attitudes to ICT use in Schools*. Retrieved on 4th May 2016 from [http: //www.itec.eun.org](http://www.itec.eun.org).
- Osodo. A. A. (2004). *An Evaluation of the use of Information Technologies in Secondary schools. The Case of Schools in Nairobi Province*. The Catholic University of Eastern Africa. B/ED Project Report.

- Papioannou, P & Charalambous, K (2011) Principals' Attitudes towards ICT and their Perceptions about the Factors that Facilitate or Inhibit ICT Integration in Primary Schools of Cyprus. *Journal of Information Technology Education* 10 (1), 349-369.
- PMID. (2013). *Assessment of Multimedia Classrooms (MMC) and Teacher-Led Content Development*. Dhaka: A2i Programme, UNDP Bangladesh.
- Prabhakar, S. (2015). Development of Software for Computer Aided Instruction & its' comparison with Traditional method for Teaching Physics at Plus II level: Ph.D. (Edu.), Devi Ahilya University.
- Richey, R.C. (2008). Reflections on the 2008 AECT Definitions of the Field: TechTrends. 52(1) 24-25
- UNESCO, (2002), 'Open and Distance Learning Trends, Policy And Strategy Considerations', 14 UNESCO.
- UNESCO (2004). *Information and Communication Technology Usage in Distance Education in Sub-Saharan Africa: National and Regional State of the Art Perspectives*. Moscow: UNESCO Institute for Information Technology in Education.
- Using Technology to Enhance the Classroom Environment: The Journal, 01 January 2002
- Wang, Q. (2017). Design of 3D Animation Special Effects in Animation 3D Modeling Teaching Based on QFD Theory. *International Journal of Emerging Technologies in Learning*, 12(07), 90-100.
- Wikan, G., T. (2011). Norwegian Secondary School Teachers and ICT. *European Journal of Teacher Education*. 34(2), 209–218. Download on 14th October 2016.
- Williams, D., Coles, L. Wilson, Richardson, A.T., Tuson, J. (2000). Teacher and ICT: Current Use and Future Needs. *British Journal of Educational Technology*, 31(4), 307-320.
- Wims, P., & Lawler, (2007). Investigating in ICTs in Educational Institutions in Developing Countries. An Evaluation of their Impact in Kenya. *International*

Journal of Educational and Development Using ICT (online), 3 (10-
Available:[Hhp://ijedict. Dec.uwi.edu/View article Php?Id=241](http://ijedict.dec.uwi.edu/View_article_Php?Id=241). Retrieved on 16th
November 2016.

Yates, L. B. (2001). *Applying Diffusion Theory: Adoption of Media Literacy in Schools*.
Paper Presented to the Instructional and Developmental Communication Division,
International Communication Conference, Washington DC, USA.

KWARA STATE COLLEGE OF EDUCATION, ILORIN
FACULTY OF EDUCATION
QUESTIONNAIRE ON EFFECTS OF INFORMATION
COMMUNICATION TECHNOLOGY INTEGRATION IN
TEACHING AND LEARNING AMONG SSS STUDENTS IN ILORIN
WEST, NIGERIA

This questionnaire titled “Effects of Information Communication Technology Integration in Teaching and Learning Among SSS Students in Ilorin West, Nigeria “is designed solemnly for research purpose. Your opinion and suggestion are hereby needed and will treat with utmost confidentiality.

The questions are designed to obtain information in this direction. Your contribution shall be very helpful to the successful of this project and used purely for academic purpose.

Thanks for your positive response.

Jokotoye Ezekiel Boluwatife

Kwcoed/Il/22/0431

SECTION A: PERSONAL DATA

Name:

Sex: Male () Female ()

Age:

SECTION B

Instruction: Please read the statement and indicate your response with a tick (✓). All information supplied will be treated in confidence.

SA - Strongly Agree

- A - Agree
SD - Strongly Disagree
D - Disagree

S/N	ITEMS	SA	A	SD	D
HOW DO TEACHERS' FACTORS AFFECT USE OF INFORMATION COMMUNICATION TECHNOLOGY INTEGRATION IN TEACHING AND LEARNING AMONG SSS STUDENTS IN ILORIN WEST?					
1.	Teachers have adequate training and skills to integrate ICT in teaching and learning.				
2.	Teachers are motivated to use ICT tools in their daily lessons.				
3.	Lack of administrative and technical support discourages teachers from using ICT.				
4.	The availability of ICT facilities in schools affects teachers' ability to integrate technology.				
5.	Teachers' attitudes towards ICT influence how often they use it in their classrooms.				
HOW DO INSTITUTIONAL FACTORS AFFECT INFORMATION COMMUNICATION TECHNOLOGY INTEGRATION IN TEACHING AND LEARNING AMONG SSS STUDENTS IN ILORIN WEST?					
1.	The availability of ICT facilities in schools enhances its integration in teaching and learning.				
2.	Regular electricity supply supports the effective use of ICT in classrooms.				
3.	School policies and administration influence teachers' use of ICT for instruction.				
4.	Insufficient internet access limits ICT integration in teaching and learning.				
5.	Lack of professional development programs for teachers affects ICT adoption in schools.				
WHAT ARE THE CHALLENGES OF INFORMATION COMMUNICATION TECHNOLOGY INTEGRATION IN INSTRUCTION AMONG SSS STUDENTS IN ILORIN WEST?					
1.	Inadequate access to computers and other ICT devices hinders effective integration in teaching.				
2.	Lack of ICT training for teachers affects the successful use of technology in instruction.				
3.	Poor internet connectivity makes it difficult to incorporate ICT into classroom activities.				
4.	High costs of ICT equipment and maintenance limit its use in schools.				
5.	Resistance to change among teachers and students affects ICT adoption in teaching and learning.				