

***Information and Communication Technology (ICT) and Academic Performance of Students in English Language in Junior Secondary Schools in Zaria Metropolis, Kaduna State***

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**Abstract**

*This study sought to establish the relationship between Information and Communication Technology (ICT) and academic performance of students in English Language in Junior Secondary Schools in Zaria metropolis, Kaduna State. Two research questions and hypotheses guided the study. This research employed correlational design. The population of this study was made up of six hundred and fifty (650) junior secondary school students in Zaria metropolis, Kaduna State, Nigeria. The sample of this study was 272 students selected using simple random sampling technique. The instrument used for data collection was “Questionnaire on Impact of ICT in Teaching” and Students Termly English Language Performance Result. Cronbach alpha was used to calculate the reliability coefficient of the instrument, which was 0.821. The data collected were analyzed using Pearson Product Moment Correlation PPMC(r). The hypotheses were tested at 0.05 alpha level of significance. The findings of this study revealed that tablet-computer, and smart phones have significant positive relationships with academic performance of students in English language in junior secondary schools in Zaria metropolis. It was recommended among others that English language teachers should utilize ICT tools such as tablet-computer and other digital contents related to their academic subjects.*

**Keywords:** ICT, academic, performance, English language, students

**Introduction**

Information and Communication Technology (ICT) can be defined as a term that includes any communication device or application such as television, mobile phone, radio, computer and network hardware and software and satellite system which enables users to access, store, transmit and manipulate information. This system has certain benefits such as low cost, enhanced service delivery, and increase in transparency and interaction between citizens and government (Din & Xue, 2017). According to Baydas and Goktas (2016), ICT applications are defined as the interaction between humans and machines, as well as the environment, in which individuals prefer to apply appropriate technical processes to their practical activities. Taher (2015) opined that ICT is an umbrella term

that includes any communication device or application, encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

ICT is a combination of microelectronics, computers, and telecommunications that allows data, such as text, video, and audiovisual signals, to be sent to any location on the earth that can receive digital signals. They include fixed, wireless, and satellite telecommunications networks as well as applications and broadcasting networks like the internet, database management systems, and multi-media tools. ICT encompasses all technologies that create, store, process, and use data in various formats to enable, facilitate, and encourage communication. Thus, ICT has had a significant impact on education as well as other areas of life. ICT use in schools generally refers to the use of computing devices such as desktop computers, laptop computers, handheld computers, software, or the internet for educational purposes. It is, however, more specifically concerned with teachers' use of technology for instructional preparation and delivery, as well as technology as a student's learning aid.

Eyo (2022) averred that ICT has redefined the context of human living because of its influence on virtually every aspect of life including education. This indicates how ICT has undoubtedly become a critical component of the integration where successful and efficient teaching and learning processes are ensured as it provides essential roles for both teachers and learners, in keeping with the rising digitalization in education. ICT is intended to be cross-curricular rather than a separate course or topic because the improvement of school teaching and learning should be a top priority in education (Flanagan & Jacobsen, 2003). According to Aduwa-Ogiegbaen (2009), for nearly two decades, schools have been incorporating ICTs into their curricula, and today's teachers need to use ICT in the classroom to make good communication with students and provide students with technology supported learning opportunities. Technology has the potential to aid education across the curriculum and provide opportunities for better communication between teachers and students.

The use of Information and Communication Technology (ICT) in teaching and learning can have a positive impact on students' interest and performance. ICT tools such as interactive simulations, multimedia resources, and online quizzes can make the learning process more interactive and engaging. The use of visual and interactive elements can capture students' attention and stimulate their curiosity. When students are actively engaged in their learning through ICT, they are more likely to develop a genuine interest. ICT can bridge the gap between theoretical knowledge and real-world applications.

Bayuo et al. (2022) examined the utilization of Information and Communication Technology in teaching and learning at senior high schools in Ghana. Findings of the study revealed that utilization of ICT offers aid and supplementary assistance for both instructors and students in the areas of efficient teaching and learning using computers and other devices as learning aids. Agommuoh (2015) observed that the use of ICT such as projector, computer or video player in teaching science subjects will make learning more real, relevant and experimental as large amount of data and materials on any topic can be brought to the classroom from all over the world, thereby greatly facilitating the acquisition and absorption of knowledge and offering students unprecedented opportunities to enhance their learning. Abanikannda (2018) in a study titled effect of technology tools on students' interest in Biology: A survey of Osun State high schools in Nigeria, reported that students make use of technology tools, smartphones inclusive, for learning in high schools which influence their interest in learning.

Applications are ICT programmes that assist people in performing an activity. Applications can manipulate text, numbers, audio, pictures, and a combination of these elements depending on the activity for which it was created. Pardede (2011) reported that since the 1930s when teachers began using interactive media techniques to transmit the curriculum in the classroom, pupils have been exposed to the English language and culture through audio and video records, satellite, movies, and technology and this influenced the creation of the internet and various new applications. Since then, ICT applications have become increasingly commonly used in English teaching.

The English teaching technique has been substantially modified as a result of the significant influences of application development. The usage of applications can significantly improve EFL teachers' teaching style in terms of properly preparing exercises to fulfill both visual and auditory senses, presenting students with a wealth of realistic and interesting learning resources, and enhancing their language production efficiency, collaboration, and confidence (Becker, 2000; Pourhossein-Gilakjani, 2017). ICT applications can boost students' confidence by facilitating collaboration between them and their teachers. This demonstrates that humans will not only interact with machines, but also with one another. In addition, Arifah (2014) noted that computer technology and its application in classrooms, in comparison to lecture-based classes, can successfully increase both teaching and learning settings in terms of learners' linguistic knowledge, background information, and interpretation to meet students' educational demands.

This concept can be illustrated by noting that EFL teachers' usage of applications can provide many possibilities for their students to practice social interaction in order to

improve their language abilities and life skills in a meaningful and intellectual way. This encourages teachers to use educational materials (Dohn, 2009). This will also prompt teachers to consider how these applications can be used in classroom activities. For example, using ICT applications in EFL teaching can be classified as enhancing learners' abilities in grammar, vocabulary, and pronunciation, as well as reading, writing, speaking, listening, and cultural knowledge. As Adonis (2006) highlighted ICT applications develop learners' literacy.

The use of ICT in EFL grammar and vocabulary training has been a "traditional" issue for a long time. The majority of these applications utilize a competence and practice approach to processing learner input, diagnosing mistakes, as well as providing feedback. Hot Potatoes, for example, is a typical software of this type that offers six simple tutorial tasks for vocabulary and grammatical study that are organized around the word and sentence. When it comes to improving pronunciation, language comprehension applications frequently use computer-based applications (Chen, 2011). Students frequently use these types of applications to listen to a sample speech provided by native speakers and then practice pronouncing the words on their own.

### **Statement of the problem**

The impact of ICT on academic performance among secondary school students is an important area of concern in today's educational landscape. The portability and memory capacity of ICT tools made it easier for students to keep materials for viewing whenever and where ever it seems conducive for them. While ICT tools offer numerous benefits and opportunities for learning, they may also pose potential distractions and challenges to students' academic progress. Therefore, it is crucial to investigate and understand the specific impact of ICT on academic performance to inform effective educational policies and practices.

### **Objectives of the study**

The following objectives guided the study: To

- i. determine the relationship between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis.
- ii. determine the relationship between the use of smartphone on academic performance of students in English language in junior secondary schools in Zaria metropolis.

## **Research questions**

The following questions guided the study:

- i. What is the relationship between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis?
- ii. What is the relationship between the use of smartphone and academic performance of students in English language in junior secondary schools in Zaria metropolis?

## **Hypotheses**

The following hypotheses were tested at 0.05 level of significance:

**Ho1:** There is no significant relationship between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis.

**Ho2:** There is no significant relationship between the use of smartphone and academic performance of students in English language in junior secondary schools in Zaria metropolis.

## **Methodology**

This research employed correlational design. The population of this study was made up of six hundred and fifty (650) students from five junior secondary schools in Zaria metropolis, Kaduna State, Nigeria. The sample of this study is 272 students. Simple random sampling technique was used in selecting the schools while proportionate sampling was used in selecting the number of students from the sampled schools.

The instruments used for data collection were “Questionnaire on Impact of ICT in Teaching” and students’ termly English Language performance result. The questionnaire comprised of two (2) sections. Section ‘A’ comprised of items related to use of tablet-computer while section ‘B’ comprised of items related to the use of smartphones. Both section comprises of ten (10) items rated on five points likert scale of strongly agree (5), agree (4), undecided (3), disagree (2) and strongly disagree (1).

The instrument was validated by experts. In order to establish the reliability of the instrument, test re-test method of reliability was adopted. Pearson Product Moment Correlation (PPMC) was used to calculate the reliability coefficient. A reliability coefficient of 0.821 was obtained. The data collected were analyzed using inferential statistics. Pearson Product Moment Correlation (PPMC) was used to test the hypotheses of the study. The hypotheses were tested at a 0.05 alpha level of significance. SPSS version 25.0 was used for the analysis.

## Presentation of results

**Ho1:** There is no significant relationship between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis.

**Table 1:** Pearson Product Moment Correlation (PPMC) statistics on relationship between the use of tablet-computer and academic performance

Variables	N	Mean	SD	df	Correlation index r	p- vaue
Use of tablet-computer	272	43.12	1.15	270	0.671**	0.000
Academic performance	272	65.566	7.4386			

Correlation is significant at the 0.05 level (2-tailed).

Table 1 indicated that Pearson Product Moment Correlation (PPMC) statistics showed that significant positive relationship exists between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis. This is because the calculated p-value of 0.000 is lower than the 0.05 alpha level of significance. Therefore, the null hypothesis which states that there is no significant relationship between the use of tablet-computer and academic performance of students in English language in junior secondary schools in Zaria metropolis is rejected.

**Ho2:** There is no significant relationship between the use of smartphone and academic performance of students in English language in junior secondary schools in Zaria metropolis.

**Table 2:** Pearson Product Moment Correlation (PPMC) statistics on relationship between the use of smartphone and academic performance

Variables	N	Mean	SD	df	Correlation index r	p- vaue
Use of smartphone	272	42.76	1.23	270	0.654**	0.001
Academic performance	272	65.566	7.4386			

Correlation is significant at the 0.05 level (2-tailed).

Table 2 indicated that Pearson Product Moment Correlation (PPMC) statistics showed that significant positive relationship exists between the use of smartphone and academic performance of students in English language in junior secondary schools in Zaria metropolis. Reason being that the calculated p-value of 0.001 is lower than the 0.05 alpha level of significance. Therefore, the null hypothesis which states that there is no significant relationship between the use of smartphone and academic performance of students in English language in junior secondary schools in Zaria metropolis is hereby rejected.

### **Discussion of the findings**

The finding of this study revealed that use of tablet-computer has significant positive relationship on academic performance of students in English language in junior secondary schools in Zaria metropolis. This finding agrees with that of Arifah (2014) who noted that computer technology and its application in classrooms, in comparison to lecture-based classes, can successfully increase both teaching and learning settings in terms of learners' linguistic knowledge, background information, and interpretation to meet students' educational demands. Similarly, Bayuo et al. (2022) examined the utilization of Information and Communication Technology in teaching and learning at senior high schools in Ghana. Findings of the study revealed that utilization of ICT offers aid and supplementary assistance for both instructors and students in the areas of efficient teaching and learning using computers and other devices as learning aids. The finding also agrees with that of Agommuoh (2015) who observed that the use of ICT such as projector, computer or video player in teaching science subjects will make learning more real, relevant and experimental as large amount of data and materials on any topic can be brought to the classroom from all over the world, thereby greatly facilitating the acquisition and absorption of knowledge and offering students unprecedented opportunities to enhance their learning.

The finding also revealed that use of smartphone has significant positive relationship with academic performance of students in English language in junior secondary schools in Zaria metropolis. This finding corroborates that of Abanikannda (2018) who reported that students make use of technology tools, smartphones inclusive, for learning in high schools which influence their interest in learning.

### **Conclusion**

The findings of the study demonstrated that ICT has significant relationship with junior secondary school students' academic performance. Information and Communication Technology (ICT) has the ability to originate, boost up, improve, and deepen abilities, to encourage and interact with students, so that they could be able to utilize their skills in

practical fields, generate financial capability for future personnel and enhance the teaching and learning experiences.

### **Recommendations**

The following recommendations are proffered:

- i. English language teachers should utilize ICT tools such as tablet-computer and other digital contents related to their academic subjects. This will not only reinforce their students' understanding of the content but also develop their knowledge and communication skills.
- ii. Junior secondary school management should provide English teachers with digital literacy education on smartphone usage, teaching them how to navigate the digital landscape responsibly.

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