

# **THE ROLE OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) IN ENHANCING ACADEMIC PERFORMANCES AMONG JUNIOR SECONDARY SCHOOL STUDENTS IN MAKURDI METROPOLIS.**

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## **Abstract**

This study investigates the impact of information communication technology on academic performance among junior secondary school students in Makurdi. A cross-sectional survey design was used in this study. Questionnaires were used to collect data from 343 participants. This study included 155 (45.2%) males and 188 (54.8%) females. Hypothesis 1 shows simple linear regression scores indicating the influence of information technology on academic performance among junior secondary school students in Makurdi. Finding revealed that Information Communication Technology (ICT) will have influence on academic performance among junior secondary school students in Makurdi metropolis [ $F(1, 341) = 2.861$ ;  $P < .05$ ]. This result implies that there is a significant influence of ICT on academic performance among junior secondary school (JSS) students in Makurdi Metropolis. More so, the result revealed the influence of ICT accounted for 31.5 % ( $R^2 = .315$ ) total variance in explaining Academic Performance among Junior Secondary School (JSS) Students in Makurdi Metropolis. Also, the chi-squared results showing the impact of IT on academic performance among junior secondary school students in Makurdi Metropolis were used. Results from the study show a positive and significant impact of information and communication technology (ICT) on Academic Performance among Junior Secondary School (JSS) Students in Makurdi Metropolis  $\chi^2(450, N=343) = 780.738$ ,  $P < .01$ . There is a positive and significant association between Information Communication Technology (ICT) and Academic Performance among Junior Secondary School (JSS) Students in Makurdi. Findings agree with the hypothesis that there is a positive and significant association between IT and academic performance among junior secondary school students in Makurdi.

## **Introduction**

Advancements in information systems have provided contemporary and emerging technologies that are effective and efficient in teaching and learning (Jam, 2025). By applying these technological tools in the contemporary

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world, the information communication system can enhance academic performance. The information communication system has become a global phenomenon. It is part of recent developments in learning and teaching (Akintoya, 2024). However, the capacity to manipulate, swipe, and like has both visible and invisible consequences on the academic development and achievements of the students.

The visible and invisible consequences of ICT have encouraged students to develop a sense of individualized and personalized learning experiences that are geared toward achieving specific educational needs to boost their confidence and improve their academic performance. The internet has become a global village where the vast array of information and knowledge is exploded and granted access to at the comfort of one's home. This has paved the way for students to delve into many perspectives in search of knowledge using digital tools that foster critical thinking and enhance creativity. It also equips students with the necessary skills for learning and exploration, including research and general academic performance (Ajayi et al., 2024).

One can also research due to the necessity of skills of information technology in the education sector for learning and teaching. Technology has become a driving force that has gradually taken over a greater part of our daily living, including the socialization of the child. There is never a day that people, especially young people, including students, will go without surfing the Internet for either fun or academic purposes (Tanuja, 2018). The use of internet; Facebook twitter, WhatsApp, tik tok, 2go etc. especially Facebook has turned into a virtual café where people, especially young people, can access the cloud on a daily basis. Technology has transformed the entire educational system into a common process. The students' learning process is changed, and the learning instructions and procedures are also changed. The traditional method of teaching instructions, which was merely teacher-centered, has given way to child-centered learning.

The Child centered learning approach has influenced the perception and thinking process. Children can be left to perform tasks without the teacher. The evaluation of students also gradually shifted to the introduction and use of IT in teaching and learning processes. The participation of youth in youths on digital tools and emerging technologies has increased online activities, bringing them closer to the youth than ever. A report from the Nigeria Communication Commission (NCC, 2017) showed that the majority of internet users are youths. The development of Nigerian telecommunication networks has spurred the growing number of internet users, resulting in an increased volume of information that is shared on various platforms.

In this research work, the emphasis will be on the influence of ICT on students, especially adolescents or young people who are in junior secondary schools. The research also seeks to understand whether or not the use of ICT in learning/teaching has some influence and/or impact on the outcome of teaching/learning, especially in junior secondary schools. Whether the methodology or teacher effectiveness in the use of ICT or both have an influence on academic performance. It will also seek to know the level of assimilation of students and the level of competence in their academic performances on the use of information technological tools like the computers and smart boards, if they have any.

### **STATEMENT OF THE PROBLEM**

The importance of using ICT in secondary school education cannot be overemphasized. It is indisputable that the benefits of ICT on those who embrace it are immense as it is the major channel of information sourcing and dissemination. It has been observed that there is a contradictory situation regarding the influence of information and communication technology (ICT), especially among junior secondary school (JSS) students in Makurdi Metropolis for their academic performance. From researcher's preliminary investigation, the ICT facilities in the secondary schools are very limited, and the available facilities are not adequately used to support academic performance among students and teachers. In addition, some teachers and students are phobic toward the use of

information and communication technology (ICT) facilities for teaching and learning. This has negatively affected the academic performance of students. This study investigated the influence of Information Communication Technology (ICT) on the academic performance of Junior Secondary School (JSS) students in Makurdi Metropolis.

### **OBJECTIVES**

1. To identify the influence of information technology on the academic performance of junior secondary school students in Makurdi.
2. To determine the extent to which ICT will impact positively or negatively on the academic performances of students in the junior secondary schools in Makurdi.

### **RESEARCH QUESTIONS**

1. To what extent will ICT influence academic performance among junior secondary school students in Makurdi Metropolis.
2. To what extent will ICT positively or negatively impact the academic performances of junior secondary school students in Makurdi Metropolis.

### **HYPOTHESIS**

1. ICT will significantly influence academic performance among junior secondary school students in Makurdi.
2. Information technology will positively or negatively impact academic performance among junior secondary school students in Makurdi.

### **THE CONCEPT OF INFORMATION TECHNOLOGY:**

Information technology refers to the use of computers and other technological devices to gain access to information on a large or global scale. Technology is based on the information that deals with our daily lives. Akhmetshin et al. (2019) identified the weaknesses posed by information technology that, if not well handled, will intensify a big challenge to learners. Ashneer (2020) also agrees that learning has taken another dimension, which has led to a paradigm shift from the traditional classroom system to smart classrooms. From rote teaching/learning methods to problem solving approach. Moreover, there has been a shift from traditional teaching modes to smart board learning. These made every child learn at their own pace and made teaching a more customized approach. This has a positive impact on the educational system, whereby classes can be held online without the need for physical contact between the teacher and the learners. The educational sector has transformed itself and adopted various modes, such as Zoom and Google Meet, which are used to impact students' knowledge. Dewan (2010) and Ashneer (2020) postulate that IT equipment has changed the effectiveness of the teaching/learning process. The use of IT in teaching/learning is geared toward creativity. Students are left on their own to experiment and explore the environment to come out with a more useful idea that can bring enlightenment and enhanced development. Information technology makes the process of teaching/learning easy in such a way that teaching/learning should achieve its effectiveness in classroom teaching/learning. Social media can be defined as facilities and tools that reduce the world to a global village; websites and applications that enable users to create, share content, and participate in social networking. The social media platform provides opportunities for users to create online communities to share ideas, information, personal messages, and so on. Some of the social media applications include Facebook, Instagram, YouTube, Myspace, Twitter, skype, LinkedIn, etc. (Osharive, 2015).

### **SOCIAL MEDIA**

The term "Social medial" is defined as an application that allows users to converse and interact with each other; to create, edit, and share new forms of textual, visual, and audio content, and categorize, label, and recommend existing forms of content.

Youths are predominantly Internet users for social interaction. These are the people who cannot imagine life without the internet, the group seeking ways to connect virally to everyone in the world. Over half of the Nigerian population is under 30 years of age, and they are the ones who are more frequent on the internet. We must harness the creativeness of the youth for the economic growth of Nigeria. Bearing in mind that the internet opens up a world of possibilities and opportunities to youths, the consequences of youths' ignorant use of social media should not be overlooked (Olubiyi 2012).

## RESEARCH DESIGN

The study employed a cross-sectional survey design to investigate the impact of information technology on the academic performance of junior secondary school students in Makurdi. The cross-sectional design method uses a snapshot of the respondents at one point in time because the population is large.

## PARTICIPANTS

Participants for the study were drawn from schools across Makurdi. This occurred in the junior classes. Participants for the study were 343 (343) made up of 188 (54.8%) females and 155 (45.2 %) males. Ten (10) secondary schools participated in the study. The schools were as follows: Government College Makurdi 22 students (6.4%) ; Salem Academy Makurdi 39 (11.4%); UBE Junior Secondary School Demekpe Makurdi 39 (11.4%) ; Christ's Foundation Academy Agan Makurdi 42 (12.2%); Vibrate Academy North Bank Makurdi 17 (5.0%); Judson Global Academy North Bank 21 (6.1%); Capitol College Makurdi 33 (9.6%); Government Model School Makurdi 41 (12.0%); Temple Gate Academy Makurdi 40 (11.7%); and UBE St Theresa Junior Sec. Sch. Wurukum Makurdi 39 (11.4%). On the basis of age, those below 10 years of age were 17 (5.0%); 11-12 years were 92 (26.8%); 13-14 years were 138 (40.2%); 15-and above years were 96 (26.0%).

## INSTRUMENTS

The questionnaire method was used as an instrument for data collection. A researcher adopted the questionnaire developed by Anup (2022). These scales were developed for the study of students' access to and use of IT tools in class. These were moderated by the researcher and were used for data collection. The questionnaire uses Likert scales of responses ranging from strongly agree to strongly disagree.

## RESULTS

Hypothesis 1 states that ICT will significantly influence academic performance among junior secondary school students in Makurdi. The hypothesis was tested using simple linear regression analysis, and the results are presented in table 4.1 below.

**Table 1:** Simple linear regression scores showing the influence of ICT on academic performance among junior secondary school students in Makurdi

Predictor variable	R	R <sup>2</sup>	df	F	$\beta$	t	Sig
Constant	.423	.315	1	2.861		1.1326	.005**
			341				
Challenges of Information Technology					-.123	-1.692	.001**

**Note:** \*\* $P < .01$ ; \* $P < .05$

Table 4.1 presents the results for hypothesis one. Finding revealed the influence of ICT on academic performance among junior secondary school students in Makurdi metropolis [ $F(1, 341) = 2.861$ ;  $P < .05$ ]. This result implies that Information Communication Technology has influence on academic performance among junior secondary school students in Makurdi metropolis. More so, the result revealed that ICT accounted for 31.5 % ( $R^2 = .315$ )

of total variance in explaining academic performance among junior secondary school students in Makurdi metropolis. Therefore, based on this result, hypothesis one was confirmed

**Table 2:** Chi-square results showing the impact of IT on academic performance among junior secondary school students in Makurdi Metropolis

### Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	780.738	450	.001**
Likelihood Ratio	512.707	460	.045*
Linear-by-Linear Association	91.817	1	.001**
Number of Valid Cases	343		

**Note:** \*\* $P < .01$ ; \* $P < .05$

The results from table 4.1 above showed that statistically, there is a statistically significant positive influence of IT on academic performance among junior secondary school students in Makurdi metropolis  $X^2(450, N=343)=780.738$ ,  $P < .01$ .

This result implies that statistically, there is a positive and significant association between Information Technology and academic performance among junior secondary school students in Makurdi metropolis. Thus, the more students have access to IT, the higher their academic performance. Thus, an increase in IT leads to a significant increase in academic performance among junior secondary school students in Makurdi.

More so, the results of the strength (effect) of association on Phi and Cramer's V indicated a moderate (0.33) association between IT and academic performance among junior secondary school students in Makurdi. Therefore, the hypothesis that information technology will significantly impact positively on academic performance among junior secondary school students in Makurdi metropolis was confirmed.

### FINDINGS

The findings revealed that ICT significantly influences academic performance among junior secondary school students of Makurdi metropolis. Schools with the operational use of IT will greatly influence learning among students. Thus, learning under IT serves as a boost to both teachers and students. It helps students learn faster with the help of computers and internet connectivity. This serves as an encouragement to secondary schools that are yet to key into this ICT to brace up and adopt it without further delays. This result is in agreement with the findings of Boyed (2007), who posited that incorporating the appropriate digital tools in education curricular will help students achieve higher academic performance. Findings also support Adelakun's (2023) study on the benefits, challenges, and prospects of the electronics learning system. He identified access to the Internet as a problem confronting electronic learning.

**Hypothesis 2.** The hypothesis stated that ICT will impact positively or negatively academic performance among junior secondary school students in Makurdi. The hypothesis was tested using the chi-square test, and the results are presented in Table 2 below:

The hypothesis that information technology will impact academic performance among junior secondary school students in Makurdi metropolis was tested, and the result was found to be significant. Information technology has a significant impact on academic performance. As one's level of information technology increases, academic performance also increases significantly among junior secondary school students. This finding is in line with Nicole (2007), who found that IT has contributed significantly to the growth and development of education and enhances academic performance.

## CONCLUSION

- i. Information technology had a positive impact on the academic performance of junior secondary school students in Makurdi.
- ii. Information technology is a predictor of academic performance among junior secondary school students in the Makurdi metropolitan area.

## RECOMMENDATIONS

Based on the findings, it was recommended that:

Through the Ministry of Education and Knowledge Creation, the Benue State Government should provide the necessary environment and facilities for the ICT to thrive.

Information technology independently curbed academic performance. The study recommends full ICT learning for all secondary school students in Makurdi.

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