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Original Article

IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON ACADEMIC ACHEIVEMENT OF ECONOMICS EDUCATION STUDENTS IN UNIVERSITY OF CALABAR, CROSS RIVER STATE, NIGERIA

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Abstract

This study investigated the impact of Information and Communication Technology (ICT) on academic achievement of Economics Education students in University of Calabar, Cross River State. Two research hypotheses were formulated to guide the study. A survey research design was adopted for this study. The population consisted of Economics Education students in University of Calabar in Cross River State, Nigeria. The population was 100 economic students from University of Calabar. A 20-item questionnaire designed on a four-point Likert scale titled: Information and Communication Technology on Students' Academic Achievement in Economics Education Questionnaire (ICTSAAEEQ) was used to derive information from the respondents. The validity of the instrument was determined by experts from educational management, test and measurement, and evaluation. Cronbach alpha reliability method was used to establish the reliability of the research instrument. Pearson product-moment coefficient correlation analysis was used to test the hypotheses. The entire hypotheses were tested at a 0.05 level of significance. The findings revealed a significant correlation between integration and the use of ICT tools and students' academic achievement in economic education, highlighting the transformative potentials of ICT in enhancing educational outcomes. This study demonstrated that ICT has a positive impact on the academic achievement of Economics Education students in the University of Calabar Cross River State. It was recommended among others, that the university management to ensure continuous training and professional development for all educators to equip them with the skills needed to effectively use ICT in the classroom so as to impart updated knowledge and skills to the students for the regions' economic development.

Keywords: Impact**,** Information and Communication Technology, Economics, Education, Academic achievement.

INTRODUCTION

The integration of Information and Communication Technology (ICT) in education has revolutionized teaching and learning processes globally, including Nigeria. The rapid advancement of Information and Communication Technology (ICT) has profoundly transformed various sectors internationally, alongside education. ICT encompasses a broad range of digital tools and resources that facilitate communication, information processing, and the dissemination of knowledge. This technological evolution, on like the analogue era, has redefined educational landscapes, enabled new forms of teaching and learned that are more interactive, personalized, and accessible. In developing countries like Nigeria, according to Aduwa-Ogiegbaen and Iyamu (2005), integrating ICT into the educational system is increasingly seen as a critical factor for improving academic outcomes and preparing students to compete in a globalized economy.

Calabar Metropolis, the Paradise City of Cross River State, situated in the Southern part of Nigeria, is an educational hub with numerous secondary schools and tertiary institutions. Despite the city's potentials academically, educational outcomes in the region have faced challenges, including limited access to modern teaching resources, infrastructural deficiencies, insufficient funding, among others.

However, recent efforts to incorporate ICT into the education sector had offered a promising avenue for enhancing academic performance as the Nigerian government and various educational stakeholders have recognized the importance of ICT in education. Policies and initiatives have been introduced to promote the use of digital tools in classrooms. The National Policy on Education advocates for the integration of ICT to improve teaching and learning processes, with an emphasis on Science, Technology, Engineering, and Mathematics (STEM) subjects, including Economics Education. However, the extent to which these policies have been effectively implemented and their impacts on academic achievement in specific subjects like Economics remains under-explored (Obanya, 2017).

Hence, understanding the impacts of Economics Education, being a crucial and the foundation of every field of studies that equips students with the knowledge and skills of economic theories and their practical applications is imperative towards the nation's building, development, and sustainability. The application of ICT in Economics Education can provide students with dynamic learning experiences, from interactive simulations of economic models to real-time data analysis (Okon,2020). This study is aimed to investigate and explore the impacts of ICT on the academic achievement of Economics Education students in tertiary institution in Cross River State, Nigeria.

Statement of Problem

Despite the potential benefits of ICT in enhancing academic achievement in education, economics education students in the university of Calabar, Cross River State, continues to face challenges of accessing modern knowledge of economic best practices nationally and internationally towards contributing effectively to the region's economic development. This has led to the students' poor performances in both classroom and outside practical economic activities compared to other major economics students in the region whose units have provided them with effective ICT facilities. This poor achievement among economics education students limits their potentials for advancement in career training and ability to compete effectively in an ever-increasing competitive global society.

These gaps may have been created due to several factors such as: limited access to ICT facilities and internet connectivity, resistance to change among educators and students accustomed to traditional teaching methods, inadequate infrastructure and

insufficient training for teachers on ICT integration, ineffective utilization of ICT tools in teaching and learning activities, insufficient digital literacy among students, and many others. This study seeks to investigate the impact of ICT on students' academic achievement, provide policy framework practically to address these gaps and challenges in order to enhance the quality and relevance of economics education in university of Calabar, Cross River State, Nigeria.

Literature Review

Information and Communication Technology Integration in Education

The integration of Information and Communication Technology in economics education has procured significant spotlight in recent years and literature, most especially in urban cities like Calabar Metropolis, Cross River State. Scholars and researchers have emphasized the importance of application of ICT into education to be a commendable indicator that prepares students with competencies and capabilities, self-reliance and literature skills toward navigating the complexities of our societal economic challenges and thrive in today's global economy.

Studies by Aduwa-Ogiegbaen and Iyamu (2005) have it that one of the significant challenges in integrating ICT into education in developing countries like Nigeria is inadequate infrastructure. Many schools lack essential ICT facilities, such as computers, reliable internet access, and stable electricity. This infrastructural deficit hampers the effective use of ICT in teaching and learning.

Also, effective ICT integration requires teachers to be proficient in using digital tools and incorporating them into their teaching practices. However, many teachers in Nigeria have limited training and experiences with ICT. According to Ololube (2006), lack of expertise can lead to underutilization of available technologies and suboptimal educational outcomes.

At the same time, resistance to change among educators and students accustomed to traditional teaching methods is another barrier to ICT integration. Changing established pedagogical practices and adopting new technologies requires a shift in mindset, which can be challenging to achieve (Ertmer,1999).

Furthermore, the cost of acquiring and maintaining ICT infrastructure is a significant concern, especially in low-income regions. Budget constraints often limit the extent to which schools can invest in necessary technologies, affecting the equitable distribution of ICT resources (Trucano,2005).

Information and Communication Technology usage in Education

ICT encompasses a range of tools and resources used to communicate, create, disseminate, store, and manage information. In education, ICT includes computers, the internet, broadcasting technologies, and telephony. These tools enhance teaching and learning by providing interactive and engaging educational experiences, fostering collaborative learning, and enabling access to vast amounts of information (Mayer,2009).

ICT tools, such as interactive software and educational games, make learning more engaging and enjoyable. According to Mayer (2009), multimedia learning environments that combine text, audio, and visuals can significantly improve students' attention and motivation. In Economics Education, tools like virtual stock markets and interactive graphs help students visualize and understand complex economic concepts, leading to increased engagement and better academic performance.

The internet provided students with access to a vast array of information and educational resources. This access allowed students to conduct independent research, broaden their knowledge, and stay updated with the latest developments in the field of Economics. Studies have shown that students with access to ICT resources tend to perform better

academically due to the availability of diverse learning materials (Cheung & Slavin,2012).

ICT enables personalized learning experiences tailored to individual student needs. Adaptive learning technologies, such as intelligent tutoring systems, can assess students' strengths and weaknesses and provide customized learning paths. This personalization helps students grasp difficult concepts at their own pace, enhancing their overall academic achievement (Holmes,2013).

ICT tools facilitate communication and collaboration among students and teachers. Platforms like Google Classroom, Microsoft Teams, and educational forums allow for seamless interaction and information sharing. Collaborative learning has been shown to improve students' understanding and retention of knowledge, particularly in subjects that require discussion and analysis, such as Economics (Dillenbourg,1999).

Studies from various parts of the world provide evidence of the positive impact of ICT on academic achievement. For instance, a meta-analysis by Tamim (2011) found that the use of ICT in education has a moderate but significant positive effect on students' academic performance. Similarly, research by Kulik (2003) indicated that students who used computer-based instruction scored higher on standardized tests compared to those who received traditional instruction.

In Nigeria, several studies have explored the impact of ICT on academic achievement. Yusuf and Afolabi (2010) investigated the effects of ICT on secondary school students' performance in basic science in Nigeria and found that students who were taught using ICT performed better than those taught using traditional methods. Another study by Oye and Abrahim (2011) reported that the use of ICT in Nigerian universities significantly enhanced students' academic performance and satisfaction.

Academic Achievement of Economics Education Students in University of Calabar

Academic achievement is a crucial indicator of educational progress and the overall quality of education that students receive. In Calabar Metropolis, the academic performance of economics students is shaped by an array of factors including the use of ICT. The socio-economic status (SES) of students significantly impacts their academic achievement. According to Oki (2016), students from higher SES backgrounds often have better academic outcomes due to access to private tutoring, high-quality educational materials, and a conducive learning environment at home. In Calabar Metropolis, these advantages are evident as students from affluent families tend to perform better in economics. Conversely, students from lower SES backgrounds face financial constraints that limit their access to essential educational resources, thereby affecting their performance.

The quality of educational institutions and the availability of Information and Communication Technology (ICT) resources are pivotal to student success. Studies have shown that private schools in Calabar Metropolis generally offer superior facilities and more experienced teachers compared to public schools (Ekong,2019). These schools often have well-stocked libraries, modern computer labs, and access to online resources, which are essential for the study of economics. Public schools, however, face challenges such as overcrowded classrooms, outdated textbooks, and insufficient teaching aids, all of which hinder student performance.

The quality of teachers and their teaching methods are critical factors influencing students' academic success. Well-trained and experienced economics teachers in Calabar Metropolis can effectively convey complex economic concepts and engage students in critical thinking. Innovative pedagogical approaches, such as the use of technology in teaching, interactive classroom discussions, and real-life case studies, can enhance students' understanding and retention of economic principles (Udoh & Etim,2017). However,

a shortage of qualified teachers and reliance on traditional teaching methods in some schools can impede academic achievement.

Student motivation and attitudes towards economics play a crucial role in their academic performance. According to Ekanem (2018), students who are genuinely interested in economics and perceive it as relevant to their future careers are more likely to excel. In Calabar Metropolis, extracurricular activities such as economics clubs, competitions, and seminars can stimulate interest and motivate students to perform better academically. Conversely, a lack of interest or negative attitudes towards the subject can result in poor performance.

Parental involvement is another significant factor influencing academic achievement. Research indicates that parents who are actively engaged in their children's education can positively impact their academic outcomes (Okon,2020). In Calabar Metropolis, parents who understand the importance of education and are involved in their children's academic life tend to see better performance from their children. This involvement includes monitoring homework, attending school meetings, and encouraging a balanced lifestyle that prioritizes education.

The curriculum and assessment methods used in teaching economics are critical determinants of student achievement. A well-structured curriculum that balances theoretical knowledge with practical application can enhance students' understanding and interest in the subject. According to Udoh (2019), the adoption of continuous assessment methods, including projects, presentations, and regular tests, provides a more comprehensive evaluation of students' understanding and skills. However, if the curriculum is outdated or overly focused on rote learning and examinations, it can hinder students' ability to apply economic concepts in real-world scenarios.

According to Unimna (2018) Poor academic achievement has become a critical concern of all educational stakeholders. The ability of the teacher to improve students' learning and then attain desired result implies a change in the instructional processes or practices of a teacher. It is the duty of the schools or educational system to put in place sufficient structures that will promote the kind of instructional practices that may yield better academic results as every classroom teacher should be equipped with professional skills and practices for effective teaching and learning.

Despite these positive findings, the impact of ICT on Economics Education specifically has not been extensively studied. However, the general trends suggest that ICT can similarly benefit Economics students by providing interactive and engaging learning experiences, improving access to information, and fostering collaborative learning environments (Unimna and Unimke,2017).

The integration of technology in education has revolutionized the way students learn and engage with academic content. In Calabar Metropolis, schools that incorporate technology in teaching economics can provide students with access to a vast array of online resources, including e-books, academic journals, and interactive learning platforms (Udoh and Etim,2017). These resources can enhance students' understanding and make learning more engaging. However, the digital divide, where some students lack access to computers and the internet, can create disparities in academic achievement. The academic achievement of economics students in University of Calabar is influenced by a complex interplay of socio-economic factors, institutional resources, teacher quality, student motivation, and government support. Addressing the challenges faced by these students requires a comprehensive approach that involves all stakeholders, including the government, schools, teachers, parents, and the students themselves. By creating a conducive learning environment and

providing the necessary support, the academic performance of economics education students in University of Calabar, Cross River State is significantly improved.

Overall, the integration of Information and Communication Technology (ICT) into educational systems has been a transformative development in recent decades. The use of ICT in education is considered crucial for enhancing learning experiences, improving access to information, and ultimately, boosting academic achievement (Ololube,2006). The literature review explored the impact of ICT on the academic achievement of Economics Education students in university of Calabar, Cross River State, Nigeria. The review examined existing research on the benefits and challenges of ICT in education, theoretical frameworks supporting ICT integration, and empirical evidence from various contexts, including developing countries like Nigeria, for the betterment of the students and citizenry in the region.

Purpose of the Study

The aim of this study was to examine the impact of ICT on academic achievement of economics education students in University of Calabar, Cross River State. Specifically, the study seeks to:

1. Assess the level of ICT integration and students' academic achievement in economics education in University of Calabar, Cross River State.
2. Evaluate the relationship between ICT usage and students' academic performance in economics education in University of Calabar, Cross River State.

Hypotheses

To guide this research, two null hypotheses were formulated as follows:

HO_1: There is no significant relationship between ICT integration in the teaching and learning of economics education and students' academic achievement in university of Calabar, Cross River State.

HO_2: There is no significant relationship between the use of ICT and students' academic achievement in economics education in University of Calabar, Cross River State.

Research Methodology

The study adopted survey research design method. The research design allowed the researcher to sample the opinions of respondents through the use of a questionnaire about the impacts of ICT integration and usage in the region, describing and interpreting the findings based on the information obtained from the sample.

Population and Sample

The population of this study consisted of Economics Education students in University of Calabar, Cross River State. the population of the study was one hundred (100) economic education students. The population was small, manageable and used for the study.

Research Instrumentation

The instrument used for data collection was a 10 - item questionnaire titled: Information and Communication Technology on Students' Academic Achievement in Economics Education Questionnaire (ICTSAAEEQ) to elicit information from the respondents. Section 'A' contained 5 items that measured the sub-variables of ICT integration and ICT usage, while Section 'B' consisted of 5 items designed to measure the student's academic achievement. The instrument was designed on a modified four-point Likert scale of Strongly Agree (4 points), Agree (3 points), Disagree (2 points), and Strongly Disagree (1 point).

Validation of the Instrument

To determine the validity of the instrument administered and the participants' respondent outcome, the items were submitted to research experts in Educational Management, Test Measurement, and Evaluation in Faculty of Educational Foundation Studies, University of Calabar. The researchers included some vital information to assist the vested experts in validating the instrument. The information

included the title of the study, research questions, statement of hypotheses.

Reliability of the Instrument

To establish the reliability of the research instrument, a trial test was first carried out on twenty (20) students selected from among the students outside the study area. Data were collected, coded, and subjected to a reliability test using Cronbach Alpha reliability coefficients to ensure the instrument tested is reliable. The reliability coefficient of the instrument ranged from 0.78 to 0.86 at 0.05 level of significance, making the instrument considerably reliable for the study.

Presentation of Results

HO_1: There is no significant relationship between ICT integration in teaching and learning of economics education and students' academic achievement in university of Calabar in Cross River State. The variables were measured continuously. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in Table 1.

Table 1: Summary of Pearson Product Moment Correlation Analysis between ICT integration and students' academic achievement in economics education in University of Calabar, Cross River State (N=100)

Variables	$\bar{X}$	S.D	r	Sig.
ICT integration	3.20	0.9		
Students' academic achievement	2.90	0.8	0.72*	.000

*Significant at 0.05, df=98, criti. r = 0.195

The result showed that the ICT integration and students' academic achievement are connected at (r =0.72) which was greater than the critical value of 0.195, and the result obtained when tested at the 0.05 level of significance with the degree of freedom of 98. As a result, the null hypothesis was rejected, and the alternate hypothesis accepted. This implies that there was significant relationship between ICT integration and students' academic achievement in University of Calabar, Cross River State.

HO_2: There is no significant relationship between ICT usage and students' academic achievement in economics education in University of Calabar, Cross River State.

The variables were measured continuously. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in table 2.

Table 2: Summary of Pearson Product Moment Correlation Coefficient Analysis between ICT usage and students' academic achievement in economics education in university of Calabar in Cross River State (N=100)

Variables	$\bar{X}$	S. D	r	Sig.
ICT usage	3.50	0.70		
Students' academic achievement	2.95	0.75	0.81*	.000

*Significant at 0.05 df=98, Crit. r = 0.195

The result of the analysis showed that ICT usage and students' academic achievement in economics education are obtained at (r= 0.81) which was greater than the critical value of 0.195. The results were derived when tested at 0.05 level of significance with the degree of freedom of 98. On that note, the null hypothesis was rejected, and the alternate hypothesis retained. This implies that there was statistically significant relationship between ICT usage and students' academic achievement in economics education in University of Calabar, Cross River State.

Discussions

The findings of hypothesis one revealed that there was statistically significant relationship between ICT integration and students' academic achievement in economics education in University of Calabar, Cross

River State. This finding is expected because according to Ololube (2006), effective ICT integration requires teachers to be proficient in using digital tools and incorporating them into their teaching practices. However, many teachers in Nigeria have limited training and experience with ICT. This finding is in line with that of Yusuf & Afolabi (2010) who investigated the effects of ICT on secondary school students' performance in basic science in Nigeria and found that students who were taught using ICT performed better than those taught using traditional methods.

The result from hypothesis two revealed that there was statistically significant relationship between ICT usage and students' academic achievement in economics education in University of Calabar, Cross River State. This finding is in line with the findings of Tamim (2011) who found that the use of ICT in education has a moderate but significant effect on students' academic performance. This finding also agreed with that of Kulik (2003) who discovered in his research that students who used computer-based instruction scored higher on standardized tests compared to those who received traditional instruction.

Conclusion

This study demonstrated that ICT has a positive impact on the academic achievement of Economics Education students in University of Calabar, Cross River State. By enhancing engagement, providing access to information, and facilitating collaborative learning, ICT tools contribute significantly to improving educational outcomes. However, to fully realize the potential of ICT in education, challenges such as inadequate infrastructure and lack of training must be addressed. Through concerted efforts by policymakers, educators, and stakeholders, the integration of ICT in education can be optimized, paving the way for a more effective and inclusive learning environment.

Recommendations

Based on the findings, the following recommendations were made:

1. ICT Integration and Investment in Infrastructure: Governments, educational institutions and stakeholders should invest in infrastructural development and integrate ICT course in economics education curriculum, providing all the necessary facilities including funds to ensure that all students have access to ICT basic tools and resources in their studies in University of Calabar, Cross River State.
2. The university management to ensure continuous training and professional development for all educators to equip them with the skills needed to effectively use ICT in the classroom so as to impart updated knowledge and skills to the students.

REFERENCES

Aduwa-Ogiegbaen, S. E., & Iyamu, E. O. S. (2005). Using information and communication technology in secondary schools in Nigeria: Problems and prospects. Educational Technology & Society, 8(1), 104–112.

Cheung, A. C., & Slavin, R. E. (2012). How features of educational technology applications affect student reading outcomes: A meta-analysis. Educational Research Review, 7(3), 198–215.

Dillenbourg, P. (1999). Collaborative learning: Cognitive and computational approaches. Oxford: Elsevier.

Ekanem, M. (2018). Factors affecting academic achievement in secondary schools in Calabar. Journal of Education and Practice, 9(20), 45–52.

Ekong, I. (2019). The impact of school facilities on academic performance of students in Calabar Metropolis. International Journal of Education and Research, 7(3), 123–135.

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. Educational Technology Research and Development, 47(4), 47–61.

Holmes, W. (2013). The impact of information and communication technology (ICT) on student learning and achievement. International Journal of Instructional Media, 40(3), 329–341.

Jonassen, D. H. (1999). Designing constructivist learning environments. In C. M. Reigeluth (Ed.), Instructional-design theories and models: A new paradigm of instructional theory (Vol. II, pp. 215–239). Mahwah, NJ: Lawrence Erlbaum Associates.

Kulik, J. A. (2003). Effects of using instructional technology in elementary and secondary schools: What controlled evaluation studies say. SRI International.

Mayer, R. E. (2009). Multimedia learning (2nd ed.). New York: Cambridge University Press.

Obanya, P. (2017). The impact of ICT on learning and teaching in Nigerian schools. Journal of Educational Technology, 28(4), 52–65.

Oki, E. (2016). Socio-economic status and academic achievement of students in Nigerian schools. Nigerian Journal of Educational Research, 14(2), 78–89.

Okon, A. (2020). Parental involvement and students' academic performance in economics in Calabar. African Journal of Education, 10(1), 99–108.

Ololube, N. P. (2006). Teachers' instructional material utilization competencies in secondary schools in Sub-Saharan Africa: Professional and non-professional teachers' perspectives. Proceedings of the 6th International Educational Technology Conference, 28–30 April 2006, Cyprus.

Oye, N. D., Iahad, N. A., & Ab. Rahim, N. (2011). The impact of e-learning on students' performance in tertiary institutions. International Journal of Computer Networks and Wireless Communications, 2(2), 121–130.

Tamim, R. M., Bernard, R. M., Borokhovski, E., Abrami, P. C., & Schmid, R. F. (2011). What forty years of research says about the impact of technology on learning: A second-order meta-analysis and validation study. Review of Educational Research, 81(1), 4–28.

Trucano, M. (2005). Knowledge maps: ICT in education. Washington, DC: infoDev/World Bank.

Udoh, A. (2019). Curriculum and assessment practices in economics education. Educational Research Journal, 21(4), 305–317.

Udoh, A., & Etim, P. (2017). Teacher quality and pedagogical practices: Their impact on students' learning in economics. Journal of Educational Development, 15(2), 59–68.

Unimna, F. A., & Unimke, S. A. (2017). Teacher area of specialization, school materials, and students' academic achievement in social studies in secondary schools in Cross River State, Nigeria. Multidisciplinary Journal of Research and Development Perspective, 6(1), 157–176.

Unimna, F. A. (2018). Teacher self-concept and academic achievement of JSS 3 students in social studies in Cross River State, Nigeria. Prestige Journal of Education, 1(1), 208–219.

Yusuf, M. O., & Afolabi, A. O. (2010). Effects of computer assisted instruction (CAI) on secondary school students' performance in biology. Turkish Online Journal of Educational Technology, 9(1), 62–69.