DIGITAL TECHNOLOGY INTEGRATION AND STUDENTS' ACADEMIC PERFORMANCE IN SECONDARY SCHOOLS IN ABI LGA, CROSS RIVER STATE

[1] Dr. Ekpo Alice Mbang
alicembangekpo@gmail.com

[2] Dr. Ategwu, Patrick Ogar
patrickategwu@gmail.com, ogarpatrickategwu@unical.edu.ng

&

[3] Dr. Jenny Moses

[1, 2 & 3] Department of Educational Management
University of Calabar

Abstract

The study examined Digital technology integration and students' academic performance in secondary schools in Abi LGA, Cross River State, Nigeria. One research questions and one null hypotheses were formulated to guide the study. Ex-post facto research design was adopted for the study. The population of the study comprised 232 teachers. Total samples of two hundred (200) respondents' were randomly selected for the study. The selection was done through the simple sampling technique. The instrument used for the collection of data was the research questionnaire titled:" Digital technology integration and students' academic performance (DTISAPQ)" validated by experts in Educational Management and test and measurement department. To test the hypotheses, Pearson product moment correlation statistical analysis was used. All the hypotheses were subjected to testing at .05 level of significant with critical values arid 198 degree of freedom. The study concludes that digital technology integration relate with students' academic performance in secondary schools in Cross River State. It was recommended that ICT facilities should be provided to integrate students' into technological advancement.

Keywords: *Digital technology, Integration of ICT, students' academic performance.*

Introduction

Student academic performance has always been a subject of interest to every educational institutions, whereas there is a consesnsus that schools should play a major role in this process. Ampofo & Selowusa (2015), there seems to be disagreement between the academic performance of students and how teachers performance influence students' academic performance, this means that students' academic performance is measure by the level of teachers preparedness in teaching the students. Researchers over the years have used a variety of ways to measure academic performance and these include report card, grades, grade point averages, standardized test scores, teacher ratings, cognitive test scores, grade retention and dropout rates, Hijazi & Naqui (2006).

Mosha (214), added that students performance is been hindered by shortage of teachers and absence of teaching and learning materials. However, her findings showed that; the presence of untrained, underqualified and trained teachers who are incompetent resulted to skip teaching some difficult topics in the syllabus and students infrequent use of frequent language at school and home, large class size, teachers responsibilities, poor conducive teaching and learning environment in the

classrooms, limited home support environment and poverty are among the factors affecting students' academic performance.

Akpakwu, Ategwu & Ochai (2014), opined that the accessibility of students' educational facilities predicts students' academic performance, this is done alongside with the pivotal roles teachers play in the intellectual development of the students. The integration of digital technology has gradually replaced traditional learning environment in education settings. Ahlam & Azza Ali (2021) today, numerous technological tools and applications are made available for teachers to employ in their classroom. Digital technology integration in teaching and learning has been found to be associated with enhancing the effectiveness of knowledge instruction and distribution along with improving academic performance. However, if digital technology is not properly and systematically interpreted into teaching and learning, its impact will not be as expected. The ability of ICT as integration into teaching and learning has become an essential part of secondary schools education (Ategwu, Amos & Uyimse, 2022). This appears to be made difficult by school constraints which include, inadequate ICT facilities in schools, insufficient fund to sustain ICT infrastructure, inability of school administrators to keep up with the development of ICT, inadequate staff with appropriate skills to manage ICT both at strategic and operational level and absence of instructional policies to support and guide the use of ICT.

Digital technology have brought changes to the nature and scope of education and led educational systems worldwide to adopt strategies and policies for ICT integration, Timotheous, Milliou, Dimitri, Romnu & Mones (2023). They later brought about issues regarding the quality of teaching and learning with ICTs, especially concerning the understanding, adaptation and design of the education system in accordance with current technological trends. These issues were emphasized during the recent Covid-19 pandemic that accelerated the use of digital technologies in education, generating questions regarding digitalization in schools. Specifically, many schools demonstrated a lack of experience and low digital capacity which resulted in widening gaps, inequalities, and learning lessons. Such results have engendered the needs for schools to learn and build upon the experience to enhance their digital capacity and preparedness, increase their digitalization levels and achieve a successful digital transformation, Timotheou et al (2023).

Vuonkari et al. (2020), presented the automation of administrative practices in schools and reduced the administrators workload, therefore digital performance of schools involves organizational improvements at the level of internal workflows, communication between the different stakeholders and potential for collaboration which in return reduces administrative stress. Garzon et al. (2020) suggested that the pedagogical resources that teachers used to complement their lectures at the pedagogical approaches they applied were crucial to the effective integration of ICT on students' performance.

Zhang, Warschaur, Lin, Chang (2016), reported that the use of ICTs improved home-school relationship, several ICT programs that had improved the flow of information from school to parents includes (mobile phones, websites, emails). Escueta et al. (2017). All this gadgets allow for personalized and customized interaction exchange between schools and parents as a result of digital technology into learning. It makes parents to be aware of their wards attendance records, upcoming class assignments, school events, and students grades which generated positive results on students learning outcomes and attainment as such its provide exchange between schools and families in order to exchange their children towards school work. The above findings suggested that the impact of ICT integration in schools goes beyond students' performance in school subjects.

Garzon & Aleyedo (2019), also emphasized that the success of a technology-enhanced intervention is based on both the technology per said and its characteristics and on the pedagogic strategies teacher choose to implement, for instance, their results indicated that the collaborative learning approach had the highest impact on students learning gains among various approaches; Zheng (2016), noted that in addition to the strategies teachers adopted in teaching ongoing professional development is also vital in ensuring the success of technology implementation of digital integration.

Purpose of the study

The purpose of this study is to investigate the influence of digital technology on students' academic performance in Abi L.G.A, Cross River State, specifically the sought to find out the influence of;

1. The integration of ICT tools on students' academic performance.

Research question

1. How does ICT tools influence students' academic performance.

Research hypothesis

1. ICT tools does not significantly influence students' academic performance

Methodology

The research design adopted for this study was Ex-post facto. This research design was adopted, because the independent variable has already occurred and 'the researchers' attempts to study the cause in retrospect for their possible effects on the differences in the dependent variables. The researcher therefore had no direct control of the independents variables because their manifestation had already occurred and as such were not manipulated (Akem, 2012). The population of this study is made up of all the public secondary school teachers' (151) in Abi Local Government Area of Cross River State. (State Universal Basic Education Board, 2024). The sampling technique adopted for this study was the simple random sampling technique which was used to select one hundred and twenty (120) secondary school teachers.

The questionnaire was divided into two sections A and B section A sought for respondent's demographic data such as name of the school, sex and qualification. Section B consisted of twenty (20) items constructed in a four (4) point modified likert scale ranging from strongly agree (SA), Agree (A) disagree (D) and strongly disagree (SD). The item in the questionnaire were drawn in reflection of the hypotheses generated from the variables under study before using the instrument. One way analysis of variance (ANOVA) was used to analyzed the data.

Hypothesis one

There is no significant influence of ICT tools on student academic performance in public secondary schools in Abi Local Government Area. The independent variable in this hypothesis is ICT integration categorized into three groups which are high, moderate, and low motivation while the dependent variable is student performance measured continuously. The categorization was done using the scores of the respondents. The highest score is 24 while the lowest score is 1. Those who scored from 1-9 are grouped as those with low ICT integration, those who scored from 9-15 are grouped as those with moderate ICT knowledge and those who scored from 16-24 are grouped as those with high ICT knowledge. To test this hypothesis, the result is presented in Table 1.

The result in Table 1 showed that integration of ICT and students' participation in classroom activities ($F=234.140$ $p<.05$); integration of ICT and students' readiness to classes ($F= 1037.14$, $p<.05$); for integration of ICT and assessment readiness ($F=56.918$, $p<.05$) and integration of ICT and disciplinary adherences ($F=132.586$, $p<.05$). Since p(.000) is less than p(.05) for all the four dimensions assessed, this implies that there was a significant influence of integration of ICT and students' academic performance in public secondary schools in Abi Local Government Area of Cross River State. Hence, the null hypothesis is rejected.

Table 1: One-way analysis of variance (ANOVA) result on the influence of ICT integration and student academic performance

ICT integration		Sum of Squares	Df	Mean Square	F	Sig.
Participation in classes	Between Groups	1507.273	2	753.636	234.140	.000
	Within Groups	2591.083	358	3.219		
	Total	4098.355	360			
Student readiness to classes	Between Groups	4093.727	2	2046.863	1037.147	.000
	Within Groups	1588.709	358	1.974		
	Total	5682.436	360			
Assessment readiness	Between Groups	894.012	2	447.006	56.918	.000
	Within Groups	6322.087	358	7.854		
	Total	7216.099	360			
Disciplinary adherences	Between Groups	1597.822	2	798.911	132.586	.000
	Within Groups	4850.632	358	6.026		
	Total	6448.454	360			

*=Significant at .05 level

Discussion of findings

The first hypothesis state that, ICT integration has no significant influence on students' academic performance. The finding of this hypothesis agreed with the view of Ategwu, Amos and Uyimse (2022). How carried out a study on teachers' ICT usage and their job effectiveness in secondary schools in Ogoja LGA, Cross River State. The finding of their study stated that there is no significant influence of teachers' usage of ICT and their job effectiveness in secondary schools in Ogoja LGA, Cross River State. The study recommended that; ICT plays a pivotal role in the actualization of instructional delivery in secondary schools in the study area.

Conclusion

Based on the finding of the study; it was concluded that the integration of ICT influence students; academic performance in the study area.

Recommendation

Based on the finding and conclusion of the study, it was recommended that;

1. Government and non-governmental agencies should provide ICT facilities to enhance students' academic performance so that they will have a wider knowledge on ICT and other technological gadgets.

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