



INVESTIGATING THE EFFECTIVENESS OF ICT ON ACADEMIC PERFORMANCE IN NIGERIAN COLLEGES

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ABSTRACT

The study conducted at the Federal College of Agriculture, Ishiagu aimed to investigate the impact of ICT resources on students' academic performance. The research methodology used was a descriptive survey, which involved collecting data through a questionnaire designed to obtain relevant information from the respondents. The data collected were analyzed using descriptive statistical analysis. The study's findings show that over 75% of respondents supported the hypothesis that ICT utilization had a positive impact on the academic performance of students in the college. Based on the findings of the study, it was concluded that the integration of Information and Communication Technology (ICT) in education has brought significant positive impacts on student's academic performance by transforming traditional teaching tools into more engaging and interactive methods and increasing access to educational resources. it was recommended that institutions should prioritize investing in ICT resources to enhance the learning experience for students. Efforts should be made to provide access to reliable and fast internet connectivity and ensure that ICT resources are readily available to students. Educators should also receive adequate training to effectively incorporate ICT into their teaching methods. Furthermore, efforts should be made to address

the challenges that hinder the effective use of ICT resources, such as electricity failures and privacy concerns.

Keywords: ICT, students, academic, Federal College of Agriculture

1.0.INTRODUCTION

Information and Communication Technology (ICT) has significantly transformed many sectors across the world, becoming a vital source of innovation and efficiency. ICT has revolutionized how people work, communicate, learn, and live (Manpreet, 2021). It encompasses various communication devices such as radio, television, cellular phones, computer and network hardware and software, satellite systems, and their associated applications such as video conferencing and e-learning (Balash, Yong & Bin-Abu, 2011; Alammary, 2012).

ICT includes computers, internet facilities, audio-visual devices, and multimedia projectors, among others. It is now prevalent in many institutions of learning, and educators should view it as a critical teaching and learning tool (Falobi, 2014). The application of ICT in the education sector has become a critical part of the learning process for university students both inside and outside the classroom setting. ICT can help make schools less stressful workplaces for both lecturers and students, and it allows access to all types of learners (Tekema, 2020). Even special needs students can benefit from ICT, and it has covered issues like the digital divide, allowing even less fortunate people to access the tools for their educational needs and enhance learning. Higher education institutions have invested heavily in ICT during the last two decades, which has impacted teaching and learning methods. ICT ensures transactional instructional communication where the teacher manages the human materials, time, and space to make sure that instructional conditions help in drawing students' attention to stimulation and recall stimulus, thereby improving performance (Owulu *et al.*, 2016).

Several studies have shown that the use of Information and Communication Technology (ICT) in education has a positive impact on student's academic achievement in science subjects (Ziden, Ismail, Spian, & Kumutha, 2011; Carrillo, Onofa, & Ponce, 2010; Avinash & Shailja,

2013). However, Shakeel & Shakeel (2019) cautioned that the negative effects of ICT could arise if it is not used appropriately.

Croteau et al., (2015) emphasized that the application of ICT in education has several positive effects. One such effect is the transformation of traditional teaching tools such as blackboards into digital smartboards, which offer interactive and engaging learning experiences for students. This shift towards digital technology not only improves the quality of education but also allows teachers to save time and effort by automating several tasks.

Siddiquah and Salim, (2017) described that the Slow speed of computers, signal problems on the Internet, virus threats, poor working conditions of computers, load shedding, and lack of access to the Internet are the problems faced by the majority of the students.

Pedagoo (2020), researched and highlighted the benefits of using ICT in the classroom. By incorporating technology into the learning process, students become more motivated and engaged, leading to increased interest in their studies. Moreover, ICT provides access to a wide range of educational resources and tools that can help teachers introduce new and innovative methods of teaching. This approach encourages collaboration among students, allowing them to work together and learn from each other.

Humbhi and Tareen, (2021) highlighted some major challenges preventing students from using ICT such as electricity failures, leakage of privacy, lack of training and poor internet connectivity.

The main objective of this study is to investigate the effect of Information and Communication Technologies (ICTs) on students' academic performance., with the specific objectives of, Determining the ICT resources available in the federal college of Learning and finding out the impact of the use of ICT resources on the academic performance of the students

2.0. MATERIALS AND METHODS

2.1. Study Area

Federal College of Agriculture, Ishiagu is a federal institution established in 1955 by the Eastern Nigeria Government as the School of Agriculture at Umudike. The institution occupied 52 hectares of land until it was amalgamated with the Agricultural Research and Training Station, Umudike in 1964. In 1972, it became the Federal Agricultural Research and Training

Station (FARTS) and later the National Root Crops Research Institute (NRCRI) Umudike with the school as the training wing in 1976.

Following the establishment of a Federal University of Agriculture on its campus in 1992, the institution was relocated to Ishiagu in Ivo LGA of Ebonyi State in 1993. It moved to its new permanent site in October 1995 and was renamed Federal College of Agriculture, Ishiagu. The institution's mandate is to provide practical-oriented training with dynamic curricula to produce self-reliant technicians and technologists at National Diploma and Higher National Diploma levels.

2.2. Research Methodology

The research design used is a descriptive survey, which is suitable for describing the current status of the population without any manipulation in the research process. The instruments used for data collection are a researcher-designed questionnaire and an adopted list from the National Commission for Colleges of Education Minimum Standard (2012). The questionnaire consists of three sections in the following order, respondent's year of study, respondent gender and impact of the use of ICT resources on the academic performance of the students of Federal College of Agriculture Ishiagu Ebonyi. The questionnaire was designed to be simple and clear to enable the respondents to provide relevant information needed for the study.

2.3. Data Analysis

The data obtained from the returned questionnaires were analyzed using descriptive statistical analysis, which involved frequency counts and percentages. The Statistical Package for Social Sciences (SPSS) version 25.0 was used to compute the data captured. Descriptive statistical analysis provides a summary of the data collected, enabling the identification of patterns and trends in the data. SPSS is a commonly used statistical software package that enables researchers to analyse data and draw meaningful conclusions from it. The results obtained from the analysis is presented in tables and charts to facilitate easy interpretation and understanding of the data.

3.0. RESULTS AND DISCUSSIONS

3.1. Data Presentation

A total of 344 copies of the questionnaire were administered to the research participants of the study (respondents), Federal College of Agriculture Ishiagu Ebonyi state. There was a 100%

response rate since all of the questionnaires were turned in and evaluated as useful for the research. The study sample size was adequate and reasonably representative.

As seen in Fig. 1. 344 participants participated in the research. Students in ND 1 and ND 2 were the two categories used to divide the responses. 52.6% of the total were ND 1 students that participated. In contrast to those of ND2 which was 47.4% that participated in the survey. Figure 2 shows the breakdown of the respondents by gender, and the results show that there were more ND 1 students than ND 2 students. Out of a total of 344 responders, 54.7% were women while 45.3% were men. This indicates that more women than men participated in the survey.

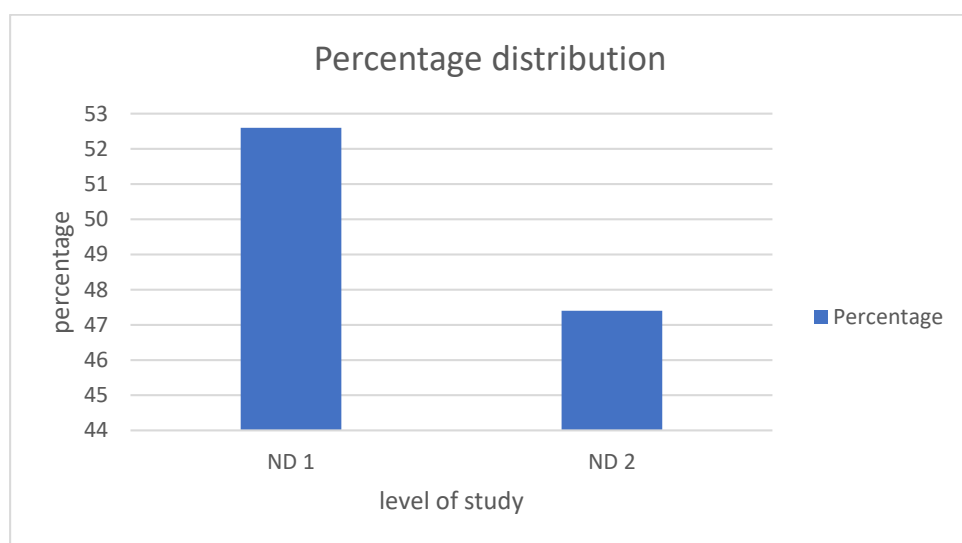


Fig 1: Percentage Distribution of Respondents Based on a year of study

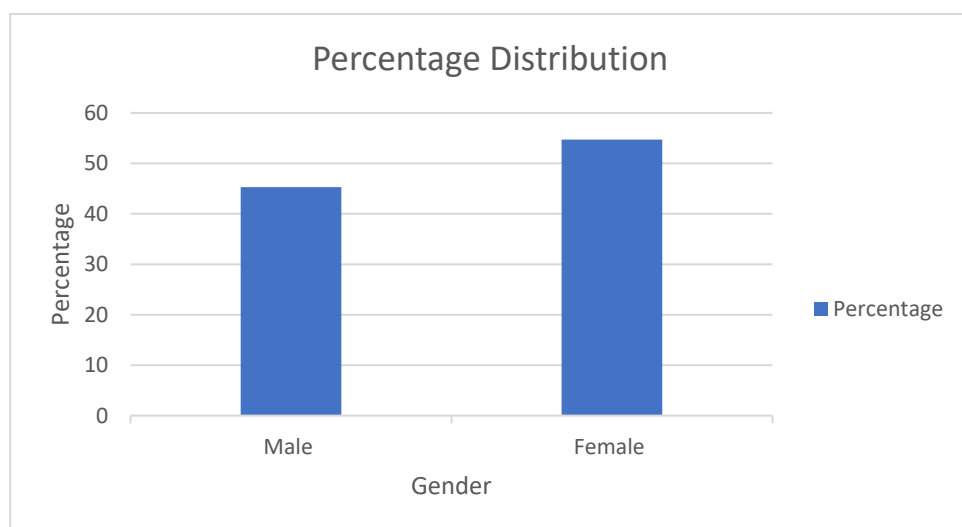


Fig 2: Percentage Distribution of Respondents based on Gender

Table 2 shows how students use of ICT resources at the Federal College of Agriculture Ishiagu Ebonyi has affected their grades. Students were polled on how strongly they agreed or disagreed with a series of statements on the benefits of using technology in the classroom.

Items 1 and 2 reveal that the majority of respondents believe that using ICT resources allows them to interact with colleagues and enhances their academic performance, with 161 (46.8%) and 141 (41.1%), respectively, strongly agree with these statements. This indicates that students' ability to work together and improve their academic achievement is aided by the usage of ICT tools.

According to the results of Question 3, 132 students (or 38.4 per cent) strongly believe that they can study independently thanks to the availability of ICT resources. However, a sizeable minority of respondents (39, or 11.3%) strongly disagreed, suggesting that not all students learn best when given access to ICT materials on their own time. In terms of improving student retention and academic achievement, Item 4 shows that 123 (35.7%) of respondents strongly agreed that using ICT resources helps. But 46 respondents (13.4%) strongly disagreed, indicating that not all students find using ICT resources beneficial to retention and academic performance.

Overall, the findings suggest that students' academic performance at Federal College of Agriculture Ishiagu Ebonyi improves thanks to their utilisation of ICT resources. The majority of respondents believed that using ICT resources allows for more opportunities for teamwork, skill development, independent study, and overall academic success. However, not all students will experience the same positive effect on academic performance that was found in this study due to the use of ICT resources. It seems that there may be differences in the level to which students gain from the usage of ICT resources since although many respondents agreed with the claims, some strongly disagreed.

It's also important to note that the research didn't detail which precise information and communication technology assets were utilised. Depending on the tools used and the manner of their implementation, the effect of ICT resources on academic achievement may also vary. The effects of various educational technologies, such as multimedia projectors, digital cameras, and interactive whiteboards, may vary.

TABLE 2: IMPACT OF THE USE OF ICT RESOURCES ON THE ACADEMIC PERFORMANCE OF STUDENTS OF FEDERAL COLLEGE OF AGRICULTURE ISHIAGU EBONYI

S/N	Impact of ICT Use on Academic Performance	SA %	A %	D %	SD %	Total
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1.	Enables me to collaborate with colleagues and thereby improving my academic performance	161 (46.8)	103 (30.0)	74 (21.5)	6 (1.7)	344
2.	Students' skills develop better with the use of ICT for academic purposes and their performance as well	141 (41.1)	97 (28.2)	58 (16.1)	48 (14.6)	344
3.	With the aid of the use of ICT, students can learn independently improving their academic performance	132 (38.4)	101 (29.4)	72 (20.9)	39 (11.3)	344
4.	Student-centred approach afforded by ICT improves students' academic performance	152 (44.1)	92 (26.8)	63 (18.3)	37 (10.8)	344
5.	The ability to learn is ubiquitous and makes students perform better academically	163 (47.4)	111 (32.3)	40 (11.6)	30 (8.7)	344
6.	ICT enables student retention and thereby enhancing their performance academically	123 (35.8)	102 (29.6)	73 (21.2)	46 (13.4)	344

4.0. CONCLUSION AND RECOMMENDATIONS

4.1. CONCLUSION

Information and Communication Technology (ICT) has become an essential tool in education, and its integration has positively impacted students' academic performance. Traditional methods of instruction have been revolutionised by the advent of ICT, which has made education more accessible and participatory for students. Despite the advantages, several obstacles prevent students from making full use of ICT resources. These include slow computer speeds, signal problems, poor computer working conditions, and a lack of access to the internet. The research also found that students' academic outcomes are significantly affected by their access to and use of ICT resources.

4.2. RECOMMENDATIONS

Institutions should offer sufficient resources, such as high-quality internet access, laptops, and audio-visual equipment, among others, to encourage the use of ICT tools in the classroom. In addition, schools need to make sure that pupils are given the skills they need to effectively use ICT tools. The usage of schools' ICT resources may also be improved with the creation of policies. Finally, institutions should evaluate how they are using their ICT resources regularly to spot problems and make adjustments. From what has been shown, it appears that ICT has

quickly become an integral element of the classroom, bringing several advantages to teachers and students alike. It has had a beneficial effect on educational practises by facilitating more dynamic and interesting lessons, which in turn improves student performance in the classroom. Although the benefits of ICT are undeniable, there are obstacles to their efficient application.

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