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INFORMATION AND COMMUNICATION TECHNOLOGY USAGE IN TEACHING COMPUTER STUDIES AMONG SECONDARY SCHOOLS IN SABON-GARI, KADUNA-STATE

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Abstract
The study determined Information and Communication Technology usage in Teaching of Computer Studies in Secondary Schools in Sabon Gari Local Government Area, Kaduna State. Descriptive Survey research design was adopted. The study was guided by two (2) objectives and two (2) research questions. The study population consisted all public secondary schools in the study area, where three (3) secondary schools were sampled using random sampling. The instrument titled ICT Usage in Teaching Computer Studies in Secondary Schools Questionnaire (ICTUCQ) was used to collect data which was validated by three experts. Cronbach reliability coefficient of 0.69 was obtained. Data was analysed using mean and standard deviation. Findings in the study revealed that without a doubt, information and communication technology (ICT) have changed the face of teaching around the in Sabon-gari. According to the study, while Sabon Gari LGA is making efforts to join the ICT fray, these efforts appear to be ineffective. Its implementation is still hampered by general neglect and other factors, and this remains the major barrier to access to ICT-driven instructional aids facilities in most secondary schools. Despite the roles that ICT can play in education, the study concludes that many schools have yet to widely adopt it for teaching. The study recommends that Kaduna state government and School Management Board should make efforts to provide ICT-skilled teachers to schools in the State in order to enhance teaching and learning, among other things.

Keywords: ICT, Teaching, Learning, Secondary Students, Teachers, Computer Studies, Usage

Introduction
The use of modern technology has simplified information gathering, recording, processing and communication through electronic media. The computer and all the transactions processing management information system are the most common tools for application. Technology's role in teaching is quickly becoming one of the most important and widely debated issues in contemporary education policy (UNESCO, 2018; Siri & Shang, 2018). Most education experts agreed that, when used properly, information and communication technology hold great promise for improving teaching as well as shaping workforce opportunities. According to Bindu (2016), computer science illiteracy is now considered the new illiteracy. This has sparked a new and strong desire in developing countries around the world to equip schools with computer facilities and qualified personnel required to produce technologically proficient

and efficient students. There is no doubt that computers can help with the instructional process and student learning. Many studies have found that technology-assisted instruction has a positive effect (Sir & Shang, 2018).

ICT (Information and Communication Technology) refers to a variety of applications, communications and technologies that aid in information retrieval, research communication, and administration. Internet access, electronic mail, CD-ROMs, telephones, online databases, library services, and fax machines are examples of these. It has evolved into a global phenomenon of great significance and concern in all areas of human endeavour, including education, governance, business, labour, market, shares, productivity, trade, agriculture, commerce, and others. According to Mugizi and Amwine (2020), ICT contributed to effective learning by increasing access, promoting efficiency, improving learning quality, and improving management systems. Mafuraga and Moremi (2017) also asserted that ICT is now regarded as a utility, similar to water and electricity, and has thus played a significant role in general education, learning, and research, agriculture, health, commerce, and even poverty alleviation by generating or creating new jobs and investment opportunities.

ICT is an essential component of today's world. The pervasive influence of ICT on education has undoubtedly been felt throughout the world, particularly in developed countries (Khan *et al.*, 2015). ICT has influenced the quality and quantity of teaching, learning, and research in traditional and/or distance education institutions that use it (Sabiri, 2020). According to Muhammad *et al.*, (2020) the introduction of ICT usage, integration, and diffusion has ushered in a new era in educational methodologies, radically changing traditional methods of information delivery and usage patterns in the domain while also providing a modern learning experience for both lecturers and students.

Teaching in Nigerian Secondary School are a vast and herculean task which may not have material existence. This is more pronounced with a subject like Computer studies which thrives more on practical, critical thinking, and problem solving. Sometimes Teachers do not have adequate knowledge, but have to fall on theoretical ideas which may lead to contradictions with empirical facts. Students are on the other hand left on their own; even when they are to read on their own, they find no practical aspect, empirical material to argument texts, which sometimes, are obsolete ICT resources. The implications are that students lose interest, motivation and passion; in some cases, frustration sets in and students perform poorly in computer studies due to lack of practical aspect. (Adeola *et al.*, 2020). However, through the use of ICT facilities such as CD-Rom, Power Point, teaching of Computer studies in schools become interesting and more explanatory with good feedback and results (Sabiri, 2020). It is a glaring fact today that internet is a valuable source of information for students. Previous researches have shown that students who are exposed to video-based instructions - teaching had significantly better results than those who were taught using the conventional method. It is against this background of ICT application and its educational relevance that this study is conceived. Therefore, the study attempts to establish the usage of ICT facilities by teachers in teaching computer studies in Kaduna state.

Statement of the Problem

The art of teaching is fundamentally concerned with the transmission of ideas, skills, and attitudes from the teacher to the learner. A key requirement for the future is the need to prepare students to participate in the information society, where knowledge is the most important factor in a country's social and economic development. The adoption of new information and communication technologies has resulted in significant changes in the

structure and functionality of education. The introduction of new technologies resulted in the development and dissemination of electronic learning (e-learning) and distance learning courses, providing a new dimension to educational provision and content. This is evident in institutions, particularly those where new technologies are now playing a dominant role in teaching. Indeed, the use of new information and communication technology transforms traditional teaching and aids in the adaptation of new curricula and courses in existing applications. The purpose of this study was to investigate the impact of ICT in computer science teaching among secondary school students in Sabon Gari- Local Government Area, Kaduna State.

Objectives of the study

The objectives of this study are to:

1. Ascertain the ICT tools used for in teaching of Computer Studies in Senior Secondary Schools in Sabon gari LGA of Kaduna state.
2. Determine the usage level of Information and Communication Technology in the teaching of Computer Studies in Secondary Schools in Sabon gari LGA of Kaduna state.
3. Ascertain gender differences in the usage level of ICT in teaching of Computer studies among Secondary Schools Teachers in Sabon Gari LGA of Kaduna state.

Research Questions

Based on the research objectives the following research questions were raised.

1. What are the ICT tools used by computer studies teachers in Secondary Schools in Sabon-gari, Kaduna state?
2. What is the usage level of Information and Communication Technology in the teaching of Computer studies in Secondary Schools in Sabon-gari, Kaduna state?
3. Is there any gender difference in the usage level of ICT in teaching of Computer studies teachers among Secondary Schools in Sabon-gari, Kaduna state?

Null Hypothesis

The null hypothesis that will be tested at 0.05 level of significance is:

HO_1: There is no significant difference in the level of usage of Information and Communication Technology among male and females in the teaching of Computer Studies in Secondary Schools.

Methodology

This study is on information communication technology usage in teaching of computer studies in secondary school in Sabon-gari, Kaduna state. Descriptive survey research design was adopted for the study.

Population and Sample of the Study

The population of the study is all Secondary school Computer Studies teachers in Sabon-gari LGA, Zaria Education Zone, Kaduna-state. The total number of teachers is 75 (male 41, female 34) in the study area. All the teachers were used as sample for the study.

Instrumentation

The main instrument used for data collection was an adapted four-point rating scale questionnaire titled ICT Usage in Teaching Computer Studies in Secondary Schools Questionnaire (ICTUCQ).

In order to make sure the final copy of the questionnaire is valid for the study the researchers submitted copies of instrument to an expert in Computer studies, expert in the area of statistics and expert in school of secondary Education, Federal College of Education Zaria. in order to ensure content, construct and criterion related validity. The reliability of the instrument was determined using split-half method. The result of the Spearman Rank Coefficient determined was 0.69. After obtaining a letter of introduction from the Zonal Education Office to the Principals of the Schools, the data collection

commenced with the administration questionnaire using the ICTUCQ. The researchers did the distribution and retrieval themselves. The data collected was subjected to analysis using descriptive statistics of mean and standard deviation while the null hypothesis was tested using T-test.

Results

Responses of respondents are presented in Table 1 and 2 below are based on the objectives and research questions.

Table 1: Extent of Teachers usage of ICT tools in teaching Computer studies

S/No	ICT Resources	Mean	SD	Decision
1.	Projector	0.22	0.45	Not Utilized
2.	Google Classroom	0.13	0.37	Not Utilized
3.	Microsoft Teams	0.37	0.59	Not Utilized
4.	Drop Box	0.25	0.57	Not Utilized
5.	WhatsApp and Telegram	1.94	0.91	Not Utilized
6.	Email	1.58	0.72	Not Utilized
7.	MS Excel	1.88	0.74	Not Utilized
8.	MS PowerPoint	1.88	0.74	Not Utilized
9.	Desktop Computer	2.77	1.82	Utilized
10.	Smartphone	2.52	1.32	Utilized
	Cumulative mean	**1.35**	**0.82**	**Not utilized**

The data presented in Table 1 shows the frequency of respondents' score. It indicates that projector, Google classroom, Microsoft teams, Dropbox, email and WhatsApp & Telegram are poorly used by the teachers in teaching. While MS Excel and MS PowerPoint are occasionally utilized and only desktop computers and smartphone are fully used. This means that the respondents do not utilize most of the ICT resources in teaching computer studies. Also, Table 2 showed that the mean ratings of the responses of respondents on the 10 items ranged from 0.13 to 2.24 and the overall mean is 1.35 with 0.82 standard deviation, which is less than the cut-off point value of 2.50 on a 4-point rating scale. This implies that the level of utilization of ICT resources is low. This in turn affects the teaching of computer studies with ICT in secondary schools in Kaduna state.

Table 2: Level of Usage of ICT in Teaching Computer Studies in Secondary Schools in Kaduna State.

S/No	Statement	Mean	SD	Decision
1.	Teachers use ICT daily in teaching	1.63	1.08	Low
2.	Teachers use ICT regularly in a week in teaching	1.71	1.08	Low
3.	Teachers use ICT often in a month in teaching	1.82	1.08	Low
4.	Teachers use ICT more when the class is over populated.	1.82	1.08	Low
5.	Teachers use ICT presentation in teaching	1.87	1.09	Low
6.	ICT Makes it possible for teachers and students to have access to information	3.11	1.10	High
7.	Teachers update their knowledge with the use of ICT in teaching	2.80	1.17	Average
8.	ICT makes teaching more interesting because of constant available information to teachers and learners	2.90	1.07	Average
9.	Teachers have varieties of information with the use of ICT in teaching	2.53	1.16	Average
10.	ICT Makes it possible for teachers and students to have access to information	2.61	1.22	Average
	Cumulative mean	**2.26**	**1.11**	**Low**

The data presented in Table 2 indicate that the respondents are of the opinion that the level of ICT usage for teaching computer studies by teachers is low. The overall mean of 2.26 is less than the cut-off point value of 2.50 on 4- point rating scale. This implies that ICT usage is very poor in teaching computer studies in secondary schools in Kaduna state.

Table 3: Summary of t test analysis of gender difference in the level of Usage of ICT in Teaching Computer Studies among Secondary Schools Teachers in Sabon gari, Kaduna State.

Gender	N	Mean	SD	MD	df	tcal	p value	Decision
Male	41	**2.71**	**0.71**					
				0.69	**73**	**0.94**	**0.47**	**Not Significant**
Female	34	**2.02**	**0.63**					

Discussion

According to the results in Table 1, respondents are using smartphone and desktop computer in creating accounts and downloading documents but rarely use other ICT resources. According to the findings, the mean responses of respondents are all low mean = 1.35 compared to decision rule mean. This implies that they are inept at utilizing ICT resources to effectively teaching computer studies in secondary school. Results is similar to Hoorik *et.al.* (2021). However, Ariunaa (2017) and Bachalapur and Manjunatha (2022) on the other hand, reported a high level of ICT usage that also had a significant relationship with the utilization level. According to the Anaza (2021) teacher competence framework, teachers must have excellent knowledge of their subject's curriculum standards as well as knowledge of standard assessment strategies. Qaddumi *et al.,* (2021) opined the computer is the most appropriate and versatile medium for individualizing institutions. ICT enables students to be more engaged in their learning. Its contribution to learning includes fastening various sensors, less mental drudgery and independent learning.

Table 2 revealed that ICT is poorly used in secondary schools in Sabon-gari, Kaduna State. The cumulative mean of 2.28 is lower than the decision rule mean value of 2.50 which shows low usage. The use of ICT in computer studies teaching has improved the quality of education in Nigeria, and E-learning software has been introduced to improve understanding of computer science concepts in schools. The findings in Table 2 are consistent with Kohat *et al.,* (2017) which emphasized the importance of ICT to the teaching process in Nigerian institutions by recommending that government at all levels provide facilities such as computers and software related to scientific analysis and process. The research also advocated for technological and ICT-oriented content in teacher and student education programs. Nonetheless, computer technology is rapidly changing people's lifestyles because education prepares students to cope with societal changes, so people cannot avoid using this technology. Computer technology is a powerful tool for closing the gap between skilled and unskilled students by stretching their creative and inventive abilities. The findings in Table 2 are also consistent with Marcino (2018) who concluded that if ICT resources are fully utilized in teaching, education would improve students' learning. However, the majority of teachers in this study agree that ICT improves classroom management because students are better behaved and more focused. Furthermore, this study demonstrated that students learn more effectively when lessons are designed with ICT because they are more engaging and interesting.

Gender analysis in Table 3 indicate there is no significant difference the utilization of ICT in teaching computer studies among secondary schools in terms of gender. The p-value has shown a statistically no significance of 0.47 at $P > 0.05$. As such the null hypothesis was accepted. This finding is line with Vadivukkarasi & Kavitha (2016), Fakhra (2015) who respectively reported a no significant impact on the usage of ICT based on gender. However, the finding disagrees with Akwaowo & Enyioko (2021) who argued that there is significant difference between male and female in the usage of ICT for teaching computer studies.

Conclusion

Based on the study's findings, it was concluded that information and communication technology have a significant influence on the teaching of computer studies in secondary schools in Sabon gari, Kaduna state. This was found to be relevant to Computer Studies, teachers, tutors, and instructors in difficulties encountered in Computer Studies teaching. Information and communication technology tools like projector, Email, MS Word, Google

classroom improves pedagogy in computer studies in secondary schools. The use of ICT facilities can improve the quality of Computer Studies education in Kaduna, as well as make the teaching of other related subjects more interesting. Findings indicate that daily use of ICT improve teaching of computer studies in secondary school which is currently poor in Sabon gari LGA. This is because using ICT resources and equipment will create a more interesting and effective active learning environment for both teachers and students. Furthermore, there was no significant difference in the level of usage of Information and Communication Technology among male and female teachers in the teaching of Computer Studies in Secondary Schools teachers involved in the study.

Recommendations

1. Secondary school administrators should ensure that computer studies teachers and students have access to ICT/ Internet facilities.
2. Seminar/orientation programmes on the use of ICT to enhance computer studies teaching should be organized for Computer Studies teachers in secondary schools in Kaduna-state.
3. Kaduna state government should provide adequate ICT facilities and internet access for teachers and students for easy access to web resources for learning.

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