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INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): AVAILABILITY AND EFFECTS ON SECONDARY SCHOOL STUDENTS' ACADEMIC PERFORMANCE IN KOGI STATE, NIGERIA

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INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): AVAILABILITY AND EFFECTS ON SECONDARY SCHOOL STUDENTS' ACADEMIC PERFORMANCE IN KOGI STATE, NIGERIA

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Abstract

The study examined Information and Communication Technology (ICT): Availability and Effects on Secondary School Students' Academic Performance in Kogi. *Four objective questions were examined. A survey research method was employed. The total sampled for the study were 450 respondents. A validated 48 items research designed questionnaire was used to data from the respondents. The questionnaire was pilot tested and Cronbach Alpha reliability coefficient was used to analysis the data that yielded 0.91. The data generated were analyzed using simple percentage and mean. The result revealed that ICT gadgets available to secondary school students were majorly mobile phones, televisions, computers, laptops, palmtops, tablet, gaming devices and the internet; students often engaged with ICT gadgets such as phones, tablets, televisions, desktop computers, smartwatches, gaming devices, internet, cable networks, MP3/4 devices, USB flash drives and SD cards; the identified types of activities and its effect on secondary school students' academic performance include cheating during exam, visiting none educational site during assignments, viewing pornographic content, frequent download of music and games, excessive viewing of television and listening to series recorded music using mp3 and mobile phones, watching of movies, distracting them during class hours, and social media; and ICT use influenced secondary school students' study habit in Kogi State. The study recommended among others that secondary schools' authority should ensure that coming to school with these gadgets are prohibited. The study concludes that while there are effects associated with ICT concerning secondary school students' performance, it is vital to recognize that responsible usage and effective management can mitigate these effects.*

Introduction

In the National Policy on Education, the Federal Ministry of Education (FME, 2004) on behalf of the Federal Government of Nigeria outlined the broad objectives of secondary education as preparing students for higher education as well as for playing their part in the nation's economic, political, and social development and sustainable goals. Secondary school is typically seen as the

starting point for other areas of the educational system to flourish. It offers primary school dropouts the chance to receive a high-quality education and serves as a platform for students to apply to various programs at higher education institutions. Additionally, it offers skills and opportunities to students who might not otherwise be able to attend universities, polytechnics, or schools of education.

Public debates in Nigeria usually center on educational standards. As student achievements did not match the government and parental investments, the public's discontent became more apparent in the reported examples of low and ongoing drop in academic performance in the Senior School Certificate Examination throughout Nigeria (Duruji et al., 2014). According to Duruji et al. (2014), the development of technology cannot be separated from the findings of their study, which indicated that low teaching quality and student indifference had been barriers to exceptional academic achievement. The proliferation of technologies in secondary education has led to a lively discussion on how information and communication technology (ICT) influence students' learning. The swift advancement of digitalization has impacted and changed many facets of residents' everyday lives, ranging from interpersonal connections to work structure. One of the most significant and frequently discussed topics in modern education policy is the use of technology in teaching and learning. (Thierer, 2000). Technology has the power to transform how education is delivered, where and how learning takes place, and what roles teachers and students play in the process (UNESCO, 2002). ICT is changing how educational processes are carried out by adding valuable elements to virtual learning environments. It is challenging to imagine learning scenarios in the future that are not supported by ICT because it is such an impactful and successful tool for delivering educational possibilities. A significant number of education experts acknowledge that ICT has enormous potential to enhance instruction and learning while also influencing career prospects when used appropriately. In fact, this has sparked a fresh and intense desire to provide educational institutions with computer laboratories and trained staff needed to turn out technologically savvy and productive students in the industrialized world. In particular, the last decade has shown how important it is to adopt digital skills in two important aspects. First, because it makes information more accessible, it helps to improve citizen engagement (Polizzi, 2021). Second, in an environment where the need for new digital skills has been constantly increasing, it makes the process of reskilling or upskilling easier.

ICT has the ability to build a strong and captivating environment for creative and collaborative learning when used by educators with expertise (European Commission, 2020; Rubach & Lazarides, 2021). But using digital technology in the classroom runs the risk of making people fall behind without a solid pedagogical approach (Comi et al., 2017). Policymakers have made concerted efforts over the last 20 years to close the so-called "digital gap," or the disparity in access to ICT (Szeles, 2018). This disparity has narrowed significantly over time, especially in societies that are economically and technologically developed (Vassilakopoulou & Hustad, 2021).

ICT is being used in the classroom by secondary school teachers in Nigeria more often than in the past. On standardized tests, students who utilize technology frequently perform as predicted, according to the National School Boards Association. However, if technology is used improperly, it may really harm pupils. Teachers who use technology in the classroom need to be mindful of the possible disruptions that technology might cause to the learning process. Technology in the classroom today can have detrimental effects, such as taking away from productive learning time, being overused, and even turning learning experiences into games for the students. ICT integration into the educational system can have varying effects on secondary school students' performance. Like many other places in the world, Kogi State is not immune to the beneficial and negative effects of ICT on academic performance. ICT may be perceived in the following ways as a threat to students' academic performance: information overload, educational inequality, cyberbullying, fewer in-person interactions, academic dishonesty like plagiarism, cheating, and sharing unauthorized information, health issues like eye strain and disturbed sleep, and distractions during class, homework, or study time that can impair students' focus and productivity. ICT poses all of these risks to students' academic performance in secondary school.

OECD (2015), suggested that a small amount of computer use in the classroom could result in higher performance than no use at all, while a large amount of use (above the OECD average) could cause noticeably lower academic outcomes. Switching from traditional to modern teaching methods is necessary to improve students' academic performance. Additionally, students who get education via ICT remember information better (Cotton (2001). The problem of low student achievement has plagued secondary school instructional frameworks. Given the growing use of ICTs in the classroom, it became necessary to dispel the myth surrounding ICT use as a teaching and learning tool and its effects on students' academic performance and study habits.

Over the past 20 years, a large body of research has focused on the direct relationship between students' usage of ICT and their study habits and academic achievement. Some of them facilitate better communication between students and teachers, which aids in the learning process (Valasidou and Bousiou, 2005). Leuven et al. (2004), stated that there is no evidence linking students' performance to greater ICT use in the classroom. Indeed, they discover a weakly significant and consistently negative correlation between ICT use and a few student accomplishment metrics. In line with this, some students might use ICT to reduce their study time and increase their free time. Increased communication channels and online games may not always translate into greater success. However, Abdulla, Al-Hawaj, Elali, and Twizell (2008) noted that ICT has the power to change a number of aspects of education, including the location and mode of instruction as well as the responsibilities that teachers and students play in it. Also, Karim and Hassan (2006) noted there has been an exponential increase in digital information, which has altered how students view reading, study, and the use of printed study materials.

ICT is widely used, and this has led to a lively discussion on whether or not it can be used to improve student performance. In this regard, one of the most important questions at this point is how much students' performance is ultimately affected by the usage of ICT, rather than just having access to it. The evidence is inconclusive. This current study on Information and Communication Technology (ICT): Availability and Effects on Secondary School Students' Academic Performance in Kogi state is necessary due to the lack of consistency in previous studies.

Objective of the study

The study examined Information and Communication Technology (ICT): Availability and Effects on Secondary School Students' Academic Performance in Kogi state. Specifically, the study:

1. Identified the ICT gadgets available to secondary school students in Kogi State.
2. Assessed the extent secondary school students engage with ICT in Kogi State
3. examined specific ICT activities and effect secondary school students' academic Performance in Kogi State
4. Investigated the influence of ICT on study habits of secondary school students in Kogi State

Research Questions

Four research questions were raised to guide this study:

1. What are the ICT gadgets available to secondary school students in Kogi State?
2. What is the extent do secondary school students engage with ICT in Kogi State?
3. What are the specific ICT activities and effect on secondary school students' academic Performance in Kogi State?
4. What is the influence of ICT use on secondary school students' study Habit in Kogi State?

Methodology

The design for the study was descriptive survey which utilizes questionnaire to collect data. Tables, simple percentages and mean were adopted in the data analysis. There are 248 secondary schools in the in Kogi State. Random sampling technique was used to select 15 secondary school across the 3 senatorial districts of the state. 30 students in their final years (SSS3) were randomly selected. The total sampled respondents for the study were 450 respondents. The research instrument used for the study was a researcher designed questionnaire titled ICT: Availability and Effects on Secondary School Students' Academic Performance. (ICTAESSSAP). It consists of 48 items with 4 sections addressing each research question. The questionnaire was face and content validated by two experts in educational technology from Federal College of Education, Okene, Kogi state, Nigeria. It was pilot tested on twenty secondary school students in Ekiti state and Cronbach Alpha reliability coefficient was used to analysis the date which yielded 0.91, this confirmed the instrument reliable for this study.

The copies of the questionnaire were administered directly by the researcher and two research assistants to the respondents. Out of the 450 copies administered, 431 copies of the questionnaire were completely filled and returned by the respondents. This is 95.7% return rate. The analysis of the data collected was done using statistical frequency, percentage and mean. A benchmark mean of 2.5 was adopted for accepting any item in research questions 2, 3 and 4. Also, 50% was the benchmark used in research question one.

Results

The presentation of the results was done in the tables according to the research questions.

Research Question 1: What are the ICT gadgets available to secondary school students in Kogi State.

Table 1

ICT gadgets available to secondary school students in Kogi State

S/N	Items	Available		Not Available		Remark
		Frequency	%	Frequency	%	
1.	Mobile phones	397	92.1	34	7.9	Available
2.	Tablets	230	53.3	201	46.7	Available
3.	Televisions	420	97.4	11	2.6	Available
4.	Desktop computers	297	68.9	134	31.1	Available
5.	laptops	183	42.5	248	57.5	Not Available
6.	Palmtops	101	23.4	330	76.6	Not Available
7.	Smartwatches	351	81.4	80	18.6	Available
8.	Virtual reality headsets	91	21.1	340	78.9	Not Available
9.	Augmented reality headsets	87	20.2	344	79.8	Not Available
10.	Interactive boards	97	22.5	334	77.5	Not Available
11.	gaming devices	373	86.5	58	13.5	Available
12.	Internet	391	90.7	40	9.3	Available
13.	cable networks	411	95.4	20	4.6	Available
14.	MP3/4 devices	423	98.1	8	1.9	Available
15.	USB flash drives	317	73.5	114	26.5	Available
16.	SD cards	385	89.3	46	10.7	Available

Using a benchmark of 50%, table 1 indicated that ICT gadgets available to secondary school students in Kogi State. These are majorly mobile phones, tablets, televisions, desktop computers, smartwatches, gaming devices, internet, cable networks, MP3/4 devices, USB flash drives and SD cards. While laptops, palmtops, virtual reality headsets, augmented reality headsets and interactive boards were not available to secondary school students in Kogi state

Research Question 2: What is the extent does secondary school students engage with ICT in Kogi State

Table 2
Extent of secondary school students engage with ICT in Kogi state

S/N	Items	Every time	Often	Rarely	Never	Mean	Remark
1.	Mobile phones	213	103	63	52	3.11	Often
2.	Tablets	242	141	17	31	3.38	Often
3.	Televisions	269	117	10	35	3.44	Often
4.	Desktop computers	257	111	31	32	3.49	Often
5.	Laptops	95	63	136	137	2.27	Rarely
6.	Palmtops	97	48	89	197	2.11	Rarely
7.	smartwatches	197	129	71	34	3.13	Often
8.	Virtual reality headsets	81	121	48	181	2.24	Rarely
9.	Augmented reality headsets	97	91	47	196	2.21	Rarely
10.	Interactive boards	78	84	203	66	2.40	Rarely
11.	gaming devices	194	114	22	101	2.93	Often
12.	Internet	271	69	41	50	3.30	Often
13.	cable networks	185	158	8	80	3.04	Often
14.	MP3/4 devices	215	16	57	143	2.70	Often
15.	USB flash drives	199	145	46	41	3.16	Often
16.	SD cards	249	91	89	2	3.36	Often
	Grand Mean					2.90	Often

From table 2, using a benchmark of 2.5 shows extent secondary school students engage with ICT in Kogi State. It reveals that students often engaged with ICT such as phones, tablets, televisions, desktop computers, smartwatches, gaming devices, internet, cable networks, MP3/4 devices, USB flash drives and SD cards. The rarely engage in laptops, palmtops, virtual reality headsets, augmented reality headsets and interactive boards in secondary schools in Kogi stater. A grand mean of 2.90 confirmed that secondary school students often engage with ICT in Kogi state.

Research Question 3: What are the specific ICT activities and its effect on secondary school students' academic Performance in Kogi State

Table 3

ICT activities and effects on secondary school students' academic Performance in Kogi State

S/N	Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Remark
1.	cheating during exam	213	133	57	28	3.23	Agree
2.	visiting none educational site during assignments	198	153	49	31	3.20	Agree
3.	viewing pornographic content	241	99	73	18	3.31	Agree
4.	frequent download of music and games	251	103	63	14	3.37	Agree
5.	excessive viewing of television	211	149	44	27	3.26	Agree
6.	listening to series of recorded music using mp3 and mobile phones	255	120	23	56	3.44	Agree
7.	watching of movies	259	98	61	13	3.40	Agree
8.	distractions during class hours by ICT	190	118	25	98	2.93	Agree
9.	social media	261	159	7	4	3.57	Strongly Agree
Grand Mean						3.30	Agree

Table 3 identifies types of activities and effects on secondary school students' academic performance They include cheating during exam, visiting none educational site during assignments, viewing pornographic content, frequent download of music and games, excessive viewing of television and listening to series of recorded music using mp3 and mobile phones, watching of movies, distractions during class hours by ICT, and social media. A grand Mean of 3.30 reveal that the all the listed activities are types of activities and effects on secondary school students' academic performance.

Research Question 4: What is the influence of ICT use on secondary school students' study Habit in Kogi State

Table 4
Influence ICT use on secondary school students' study habit in Kogi State

S/N	STATEMENT	SA	A	D	SD	Mean	Remark
1.	The use of ICT total waste of time during studies	213	121	57	40	3.18	Agree
2.	I make use of ICT daily to facilitate learning	198	153	49	31	3.20	Agree
3.	I enjoy using ICT gadgets while in school to solve assignment	241	99	73	18	3.31	Agree
4.	Phones distract students during reading	210	119	77	25	3.19	Agree
5.	Students engage on social media than educational site	198	153	49	31	3.20	Agree
6.	Students stay glue to the television than reading their books	255	120	33	23	3.40	Agree
7.	Students use the internet predominantly to download music, video and pornographic films	259	76	90	6	3.36	Agree
	Grand Mean					3.26	Agree

With a benchmark of 2.5, table 4 reveals the influence ICT use on secondary school students' study habit in Kogi State. It reveals that the use of ICT total waste of time during studies, I make use of ICT daily to facilitate learning, I enjoy using ICT gadgets while in school to solve assignment, Phones distract students during reading, students engage on social media than educational site, students stay glue to the television than reading their books, and students use the internet predominantly to download music, video and pornographic films. A grand mean of 3.26 affirmed that ICT use influence secondary school students' study habit in Kogi State

Discussion of Findings

Findings from research question one indicated ICT gadgets that were available to secondary school students in Kogi state. These are majorly mobile phones, televisions, computers, laptops, palmtops, tablet, gaming devices and the internet. This finding agrees with the works of Apagu and Bala (2015), Fatoki, Iornyagh, and Ochedikwu (2021) that revealed that ICT facilities were to some extent available for teaching and learning. However, the finding was at variance with the works of Olokoba, Abdullahi and Omosidi (2014) and Okafor (2020) who maintained none availability of ICT gadgets to secondary school students. The issue of ICT gadgets available to secondary school students remains unresolved.

Findings from research question two reveals the extent secondary school students do engage with ICT in Kogi State. It reveals that students often engaged with ICT such as phones, tablets,

televisions, desktop computers, smartwatches, gaming devices, internet, cable networks, MP3/4 devices, USB flash drives and SD cards. This finding aligns with works of Colley and Comber (2003), Griffths, Davies and Chappell (2004) where they discovered that students were always engaged with computer games and NetDay (2004) found out that internet technology was a major form of communication for secondary students.

Findings from research question three identifies types of ICT activities and its effects on secondary school students' academic performance. They include cheating during exam, visiting none educational site during assignments, viewing pornographic content, frequent download of music and games, excessive viewing of television and listening to series of recorded music using mp3 and mobile phones, watching of movies, distracting them during class hours, and social media. This finding buttressed the works of OECD (2015), Cotton (2001) and Valasidou and Bousiou (2005) that suggested computer usage by secondary school students. But Leuven et al. (2004), stated that there is no evidence linking students' performance to greater ICT use in the classroom. This makes researches on types of ICT activities and its effects on secondary school students' academic performance inconclusive.

Findings from research question four reveals that ICT use influenced secondary school students' study habit in Kogi State. It revealed that the use of ICT total waste of time during studies, I make use of ICT daily to facilitate learning, I enjoy using ICT gadgets while in school to solve assignment, Phones distract students while reading, students engage on social media than educational site, students stay glue to the television than reading their books, and students use the internet predominantly to download music, video and pornographic films. Jukes (2005), Prensky (2004) and Tapscott (2004) argue that the influence of ICT on approaches to learning was that differences in approaches to learning arise from differences in prior experiences. It is argued that those who grew up with digital technologies adopt different approaches than those who did not. Students who have been exposed to digital technologies approach technology with the expectation that it will provide a high level of engagement and that it will enable them to pursue an interest through access to a wide range of resources.

Conclusion

The findings of this research pointed out that ICT can be distracting during class, take up valuable learning time when misused, and turn studying into games for students, which worsens their

academic performance. It can also expose students to pornographic websites. The findings indicate that ICT has effects on Kogi State secondary school students' academic performance. It's critical to take into account how technology is incorporated into the curriculum, the caliber of the resources accessible, and the assistance given to teachers and students in order to help them use ICT effectively. Furthermore, steps should be taken to lessen any potential drawbacks like distractions and uneven access to technology. Furthermore, having fast access to a wealth of material online might cause problems with information overload and a tendency to rely too much on short searches rather than in-depth research. Students could get into the habit of largely depending on surface-level knowledge rather than on critical thinking and analysis skills. This may make it more difficult for them to fully understand and implement difficult concepts.

It will take a multifaceted approach to counter these potential effects. The first step is educating teachers, parents, and students on appropriate ICT use. Reducing distractions can also be achieved by establishing and enforcing policies that control the usage of ICT devices during study hours in schools. Moreover, intentional and planned ICT integration into the curriculum can improve student performance. In order to ensure that technology enhances and complements traditional teaching techniques rather than completely replacing them, educators should possess the requisite abilities.

In conclusion, even if there are effects related to ICT use and performance of secondary school students, it's important to understand that these issues can be lessened by responsible use and efficient administration. Students can get the benefits of ICT while still performing academically if a supportive environment is created where technology is used purposefully and sparingly.

Recommendation

Based on the findings of this study, the following recommendations were made:

1. The management of secondary schools, including the principal and teachers, should make sure that bringing ICT devices into school is prohibited.
2. Counselors need to plan programs and workshops to educate students on the risks using ICT gagdets poses to their academic performance.
3. In the same way, parents should supervise their children at home. They have an obligation to ensure that children are not exposed to films, television programmes, or other ignorant content.

4. Government should furnish secondary schools with the necessary instructional resources (ICT) to improve the quality of teaching and learning to improve secondary school study habit.

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