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Availability and Utilisation of information and communications technology for Effective Learning Habits among Secondary School Students

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ABSTRACTS

The study investigated the availability and utilization of information and communications technology (ICT) facilities for effective learning habits among Secondary School students in Kwara State, Nigeria. The findings revealed that many of the ICT facilities needed for the learning habit are not available. The consequence is that secondary school students are more likely to use ICT tools when they are readily available, which promotes effective learning habits. It was also revealed that the majority of the facilities needed for the learning habit are not being used by the teachers. Moreover, it was revealed that there was a significant relationship between the availability and utilization of ICT and effective learning habits among secondary school students. According to the findings, ICT access and use among secondary school students in Kwara State are crucial to their academic progress, daily activities in school, and life after graduation. It was recommended among others that government should encourage effective learning habits among students in secondary schools, and the government should hire technicians to fix and maintain the ICT facilities utilized in classrooms.

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1. INTRODUCTION

The development of information and communications technology (ICT) has made the world a small, interconnected community. ICT is a call to action in the media and telecommunications that has disrupted the economy, commerce, politics, and education. The internet, intranet, and extranet are only a few of the information technologies that the ICT uses to work. ICT is an information science that uses computers and multiple electronic resources to gather, process, store, retrieve, and transfer or distribute information to any location in the world. Almost every aspect of human enterprise now uses ICT (Jadhav, 2022; Daramola, 2023).

The curriculum has benefited from its incorporation into the educational system. ICT has been prioritized in education across the world, and Nigeria is not exempt from this (Nwana *et al.,* 2017). ICT is acknowledged by the Federal Government of Nigeria as an innovation in education and as a byproduct of technological development in the National Policy on Education. This perspective is what led to the introduction of computer education as a crucial component of ICT in the Nigerian educational system. The main motivation was to gain the computer literacy and abilities that are essential to 21st-century life in all aspects. As an illustration, radio, television, and newspapers are all connected to the internet so that people may read the news online (Arciosa, 2022; Dwiana *et al.,* 2022).

In the same way, it was thought that students should read the curricular materials online. This resulted in changes to the curriculum that gradually saw the previous 6-3-3-4 system replaced by the new, nine-year system created by the Nigerian Educational Research and Development Council NERDC. The introduction of fundamental technology, ICT, computer education, and a focus on creative thinking are among the topics covered in the curriculum as created by NERDC. The new curriculum is ICT-driven with a focus on practical, concrete, and hands-on experiences.

Both Ololube (2006) and Nwana *et al.* (2017) stated that the usage of ICT resources should help instructors and students produce better curriculum outcomes. As was previously mentioned, the fundamental goal of computer education was to provide students with the computer literacy and abilities they would need in both the classroom and outside of it in the twenty-first century. It involves more than just reading computer books and brochures. It genuinely calls for computer-related skills, aptitudes, and competencies. For instance, it calls for knowledge of and proficiency with computers, hardware, software, and the integration and use of computer programs.

Networking expertise and knowledge of multimedia technologies are additional. For instance, proficient computer literacy and abilities are needed to use a multimedia projector (mm projector). This is because it is compatible with a wide range of electronic equipment, including, but not limited to, computers, digital television, radios, radio cassettes, magnetic sound recorders, and electronic board technology. The usage of the multimedia planning sheet, which is used by the mm projector and necessitates computer literacy for manufacture and use, was brought up by Nwana *et al.* (2017).

The majority of students use ICT for non-educational purposes, such as communication, word processing, entertainment, etc. Students with visual impairments can access the curriculum with the aid of a variety of specialized tools. A variety of high-tech options are also available that will allow students with visual impairment to be fully included in lessons and have access to the ICT-based resources that are increasingly becoming a part of teaching and learning. Some of this equipment is low-tech, like magnifiers and mechanical Braille, but it also includes low-tech items like magnifiers and mechanical Braille.

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The potential provided by ICT to improve academic achievement are not exclusive to students who have visual impairments. However, there are several pieces of evidence that the academic performance of the student with visual impairment in secondary schools is a problem that special education scholars have not given enough attention to. The Internet has developed into a vast and comprehensive source of knowledge for students and instructors worldwide (Makoye, 2003). Easy Access to Learning is one of ICTs' most significant contributions to education. Students can now browse through e-books, practice tests, and past papers with the aid of ICTs. Additionally, students can easily connect with peers, experts, mentors, researchers, and professionals throughout the world.

The availability of ICT infrastructures and resources is crucial for the integration of ICTs in instruction (Bingimlas, 2009). Although necessary, the provision of adequate ICT infrastructures and resources does not, by itself, permit the effective use of ICT for learning in schools. However, even if an institution possesses top-notch ICT resources, access to those resources may not be ensured for both academics and students. Professors and students may be prevented from adopting ICTs, however, by poorly managed ICT resources and a network that is unreachable from outside the institution.

A space in the ICT classroom may occasionally need to be reserved months in advance due to a lack of resources. It is clear that if ICTs are used effectively to enhance teaching and learning in schools and colleges, they can be useful tools, especially for enhancing the quality of instructional materials and pedagogy. For instance, many schools now include computer programs, interactive television, and films in their teaching and learning strategies. The range of ICT tools that students can utilize has increased, including the Internet, e-mail, chat, programming, graphics, spreadsheet, online shopping, online literature searches, and other learning resources.

Students' attitudes and internet use are not significantly impacted by their gender, age, or year of study (Wittwer & Senkbeil, 2008). Currently, teaching and learning resources can be found on the internet. Computer laboratories are utilized for teaching and learning in the majority of private secondary schools and some public institutions in Tanzania, Cameroon, Egypt, Sudan, and several other African nations. However, only a small number of computer laboratories are online in some of these nations. As an alternative, instructors and students utilize their mobile devices to access the Internet for academic purposes (Abubakar & Bello, 2020).

Sahin *et al.* (2010) looked at how university students used the internet for research for their course projects. They made the case that using reliable online sources is crucial for academic study, particularly in higher-level courses that demand an academic evaluation of literature. Using the internet for educational purposes is a habit that contributes to teenage academic success. Aderanti & Adedotun (2015) proposed that the source and accessibility of information can affect the academic performance of secondary school pupils in a related study.

Despite the value of using the internet for academic achievement, Olatokun (2008) claims that secondary school pupils in Nigeria use the internet more for fun than for learning. Olatokun (2008) claims that Nigerian students predominantly use the internet for communication, entertainment, and recreation (reading and sending e-mails, online chatting, instant messaging, playing games and downloading music videos, and reading newspapers). The demand for ICT usage and availability for effective learning habits among secondary school students is rising (Akinoso, 2023; Bolaji & Jimoh, 2023). The government has worked to create ICT facilities and purchase ICT facilities for several schools. For instance, computers

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and their accessories were purchased in significant quantities and given to various schools in Kwara State while Governor Bukola Saraki was in office.

Teachers were also given access to seminars and workshops on the use of ICT in the teaching and learning process. However, they face opposition when using ICT to teach computer education as a subject of study. In light of this, the current study aims to determine if secondary schools have access to ICT resources for good learning habits. Kwara State students. Moreover, to investigate how students use ICT resources to develop successful learning habits.

The main goal of this study was to determine how readily accessible ICT resources are used by secondary school students in Kwara State for good learning habits. The specific objectives of this study were to investigate:

(i) The availability of ICT facilities for effective learning habits among secondary schools students in Kwara State;
(ii) The accessibility of ICT facilities for effective learning habits among secondary schools students in Kwara State;
(iii) The level of utilization of ICT facilities for effective learning habits among secondary schools students in Kwara State;
(iv) The major factors that hinder the utilization of ICT facilities for effective learning habits among secondary school students in Kwara State.

For the realization of the objectives of this study, the following research questions were raised:

(i) What is the level of availability of ICT facilities for effective learning habits among secondary school students in Kwara State?
(ii) What is the level of accessibility of ICT facilities for effective learning habits among secondary school students in Kwara State?
(iii) What is the level of ICT utilization for effective learning habits among secondary school students in Kwara State?
(iv) What are the major factors that could hinder ICT utilization for effective learning habits among secondary school students in Kwara State?

The following hypotheses were formulated and tested to guide the study:

(i) Ho: There is no significant relationship between the availability and utilization of ICT for effective learning habits among secondary school students in Kwara State.
(ii) Ho1: There is no significant relationship between the utilization of the internet and effective learning habit among secondary school students in Kwara State.
(iii) Ho2: There is no significant relationship between the utilization of computer hardware and effective learning habit among secondary school students in Kwara State.

2. METHODS

This study used a descriptive survey research approach. In Kwara State, secondary schools participated in the survey. All 22540 secondary school ICT students made up the population. The 320 students who made up the study's sample were chosen using a straightforward random sampling approach. The 40-item "Availability and Utilization of ICT for Effective Learning Habit Questionnaires" was chosen as the data collection tool (AUIELHQ). It contained sections A and B that aimed to gather data regarding the four study questions. The instrument was put through the professional face and content validations. Using Cronbach Alpha, the instrument's dependability was assessed. The instrument's reliability for data collection as determined by the reliability co-efficient, which was found and was 0.57. The researcher, assisted by two trained research assistants, used the approach of on-the-spot distribution and

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collecting when distributing the questionnaire copies. This guaranteed a 100% return rate. Frequency distribution and percentages were used to assess the data that had been gathered. For elements indicating positive, that is, a percentage of 50% and above was considered acceptability. Available (AV), Accessible (A) and Utilized (U). Consistently, any item that scored below 50% was regarded as negative that is, Not Available (NA), Not Accessible (NA) and Not Utilized (NU).

3. RESULTS AND DISCUSSION

3.1. Research Question 1: What is the level of availability of ICT facilities for effective learning habits among secondary school students in Kwara State?

The results in **Table 1** indicated that 50 respondents representing 15.60% of secondary school students' effective learning habits in Kwara State claimed that ICT facilities were highly available, and 240 respondents representing 75.00% of those students' effective learning habits said that ICT facilities were readily available. This suggests that 75.00% of secondary school students in Kwara State had access to ICT facilities at a moderate level for effective learning habits.

Table 1. Level of availability of ICT facilities for effective learning habits among secondary school students in Kwara State.

Availability of ICT Facilities	Frequency	Percentage (%)
Highly Available	50	15.60
Moderately Available	240	75.00
Not Available	30	9.40
Total	**320**	**100**

3.2. Research Question 2: What is the level of accessibility of ICT facilities for effective learning habits among secondary school students in Kwara State?

Table 2 shows the participants' replies to questions about secondary school students in Kwara State's access to ICT facilities for effective learning habits. The analysis showed that 57, or 17.80% of the accessibility to ICT facilities for effective learning habits among secondary school students in Kwara State, were highly accessible, while 191, or 59.70%, were moderately accessible. Meanwhile, 72, or 22.50%, of the access to ICT facilities, were not accessible. This suggests that 59.70%, of secondary school students in Kwara State, had a reasonably accessible level of ICT facilities for effective learning habits.

Table 2. Level of accessibility of ICT facilities for effective learning habits among secondary school students in Kwara State.

Level of Accessibility of ICT Facilities	Frequency	Percentage (%)
Highly Accessible	57	17.80
Moderately Accessible	191	59.70
Not Accessible	72	22.50
Total	**320**	**100**

3.3. Research Question 3: What is the level of ICT utilization for effective learning habits among secondary school students in Kwara State?

The responses of survey respondents to questions about ICT usage for successful learning habits among secondary school students in Kwara State are shown in Table 3. According to **Table 3**, 110 students, or 34.40% of all students in Kwara State Secondary Schools, used ICT at high levels, 168 students, or 52.50% of all students, used ICT at moderate levels, and 42

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students, or 13.10% of all students in Kwara State Secondary Schools, used ICT at low levels. This suggests that the use of ICT by students in secondary schools in Kwara State was moderate, at 52.50 %.

Table 3. Level of ICT utilization for effective learning habits among secondary school students in Kwara State.

Level of ICT Utilization	Frequency	Percentage (%)
Highly Utilized	110	34.40
Moderately Utilized	168	52.50
Not Utilized	42	13.10
Total	**320**	**100**

3.4. Research Question 4: What are the major factors that could hinder ICT utilization for effective learning habits among secondary school students in Kwara State?

According to **Table 4**, 320 respondents took part in the study. The main factors that prevent secondary school students in Kwara State from using ICT for effective learning habits were "Irregular power supply" (a mean score of 3.47), "Inadequate funding on the part of the government" (a mean score of 3.38), "Poor internet connectivity and Shortage of ICT facilities" (a mean score of 3.26), "Lack of access to ICT facilities" (a mean score of 3.20). Poor time is given for ICT-related learning with a mean score of 2.91, excessive instructional burden with a mean score of 2.84, and "a poor attitude toward ICT utilization" (a mean score of 2.67). This suggests that "Irregular power supply" was the main barrier to ICT usage for successful learning habits among secondary school students in Kwara State.

3.5. Hypotheses tested

3.5.1. H0: There is no significant relationship between the availability and utilization of ICT for effective learning habits among secondary school students in Kwara State.

As shown in **Table 5**, the calculated r-value was 0.01 while its calculated significance value is 0.83(ρ> 0.05). On this basis, the null hypothesis one was therefore not rejected. This means that there was no significant relationship between the Availability and utilization of ICT for effective learning habits among secondary school students. The reason was that the calculated significance value (0.83) (ρ> 0.05).

Table 4. The major factors that hindered ICT utilization for effective learning habits among secondary school students in Kwara State.

S/N	Factors that Hinder ICT Utilization	Mean	Ranking
1	Irregular power supply	3.47	1st
3	Inadequate funding on the part of the government	3. 38	2nd
2	Poor internet connectivity	3.26	3rd
6	Shortage of ICT facilities	3.26	3rd
7	Lack of access to ICT facilities	3.20	5th
8	Insufficient ICT skilled personnel	3.00	6th
10	Lack of training and retraining	2.99	7th
9	Poor time allocated for ICT-associated learning	2.91	8th
5	Excessive teaching workload	2.84	9th
4	Poor attitude towards ICT utilization	2.67	10th

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Table 5. Availability and utilization of ICT for effective learning habit among secondary school students in Kwara State.

Variable	No	Mean	Std	df	Cal. r	Sig. (2-tailed)	Decision
Availability and Utilization of ICT	320	33.28	7.88	318	0.01	0.83	H_{01} Not Rejected
Effective learning	320	20.28	6.35				

3.5.2. H01: There is no significant relationship between the utilization of the internet and effective learning habit among secondary school students.

As shown in **Table 6**, the calculated r-value was 0.26 while its calculated significance value is 0.00(ρ <0.05). On this basis, null hypothesis two was therefore rejected. This means that there was a significant relationship between the utilization of the internet and effective learning habit among secondary school students. The reason was that the calculated significance value is 0.00 (ρ < 0.05). This is in favor of utilization of the internet with a mean score of 33.28 greater than the mean score of 10.62 for effective learning habits of students.

H02: There is no significant relationship between the utilization of computer hardware and effective learning habit among secondary school students.

Table 6. Utilization of the internet and effective learning habit among secondary schools students

Variable	No	Mean	Std	Df	Cal. r	Sig. (2-tailed)	Decision
Utilization of Internet	320	33.28	7.88	318	0.26	0.00	H_{02} Rejected
Effective learning habit	320	10.62	4.88				

As shown in **Table 7**, the calculated r-value was 0.20 while its calculated significance value is 0.00 (ρ< 0.005). On this basis, null hypothesis three was therefore rejected. This means that there was a significant relationship between the utilization of computer hardware and effective learning habit among secondary school students.

The reason was that the calculated significance value is 0.00 (ρ < 0.05). This is in favor of the utilization of computer hardware with a mean score of 33.28 greater than the mean score of 10.64 for effective learning habits of students.

Table 7. Utilization of computer hardware and effective learning habit among secondary schools' students

Variable	No	Mean	Std	Df	Cal. r	Sig. (2-tailed)	Decision
Utilization of Computer hardware	320	33.28	7.88	318	0.20	0.00	H_{03} Rejected
Effective learning habit	320	10.93	4.64				

According to the findings, ICT access and use among secondary school students in Kwara State are crucial to their academic progress, daily activities in school, and life after graduation. In light of this, the study's findings showed that, in Kwara State, secondary school students had a moderate (75.0%) availability of ICT resources for efficient learning habits. The results of this study showed that ICT facilities are there in the majority of secondary schools in Kwara State, but accessibility is a whole different matter.

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The consequence is that secondary school students are more likely to use ICT tools when they are readily available, which promotes effective learning habits. The study also found that secondary school students in Kwara State had a moderate level of accessibility to ICT facilities for effective learning habits, at 59.7%. This shows that the availability of ICT is greater than its accessibility. Some schools lack the necessary infrastructure to use ICT. This suggests that there is a need for greater accessibility to develop effective learning habits among secondary school students in Kwara State.

Additionally, the results demonstrated that secondary school students in Kwara State used ICT at a moderate level (52.5%) for successful learning habits. The results of this study may be due to insufficient ICT resources and the lack of necessary technical expertise to use them for efficient teaching and learning. The implication is that ICT use for educational activities is necessary to improve effective learning habits among secondary school students in Kwara State (Bolaji & Adeoye, 2022; Shah, 2022). This result is consistent with Amiaya's (2014) claim that some schools did not extensively use ICT resources. The results of this survey also showed that "Irregular power supply," with a mean score of 3.47, was the main factor that prevented secondary school students in Kwara State from using ICT for successful learning habits.

This study concludes that since power is these infrastructures' lifeline, it has an impact on how much they are used in teaching and learning. Because of huge class sizes, irregular power supplies, inadequate infrastructure, and other factors, teachers and students do not truly utilize ICT in their teaching and learning in the available ICT-related courses.

Additionally, this study's findings confirmed those of. The findings of this study suggested that other factors may affect effective learning habits in addition to the availability and use of ICT. This suggests that for learning to be effective, students must have access to new current technological applications. All of these factors, when combined with the accessibility to ICT resources, will improve effective learning habits. The study by Nwana *et al.* (2017), which claimed that ICT resources are not being used in the teaching and learning of computer education, contradicts this finding.

This research implies that the adoption of the internet depends on the effectiveness of learning habits. The results concur with Kumar & Kaur's (2005) perception that lecturers and researchers can successfully carry out their academic and social services thanks to extensive use of the internet network. The consequence is that kids in secondary schools will develop more effective learning habits the more computer gear is used.

4. CONCLUSION

The availability and usage of ICT facilities, when they are used wisely and constructively by secondary school students, can play a significant role in offering a variety of information sources that can promote effective learning habits. This is the conclusion that can be drawn from the study's findings. Due to this, excellent learning habits necessitate numerous ICT facilities. The internet, e-books, and computer gear are among the amenities, though. The findings indicated that some ICT resources are not readily available for efficient learning. It was also discovered that just a small number of ICT resources were being used by students during the educational process.

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

(i) For secondary school students to develop efficient learning habits, the government should provide adequate ICT facilities and guarantee a consistent electrical supply.

(ii) Through short-term courses, seminars, conferences, and workshops, the government should organize teacher training and retraining to promote effective learning habits among secondary school students.

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(iii) To encourage effective learning habits among students in secondary schools, the government should hire technicians to fix and maintain the ICT facilities utilized in classrooms.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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