STATE OF ICT FACILITIES USED FOR TEACHING AND LEARNING IN SECONDARY SCHOOLS IN ILORIN METROPOLIS, KWARA STATE, NIGERIA

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Abstract
This study investigated the status of ICT facilities used for teaching and learning in selected secondary schools in Ilorin metropolis. The study adopted a descriptive survey research design because it concerned with the collection of data from a large population for the purpose of describing and interpreting the data for generalization. The population consisted of all principals, teachers and students in secondary schools in Ilorin metropolis, Kwara State. Simple random sampling technique was adopted for selecting (10) principals, (50) teachers and (100) students as respondents from ten selected secondary schools in Ilorin metropolis, Kwara State. Structured questionnaires and checklist constructed by the researchers were used as the instruments for data collection from the respondents. The instruments were validated through expert judgment and a reliability co-efficient of 0.69 and 0.72 was established respectively by adopting test-retest method within three weeks interval. Descriptive statistics of frequency count and percentages were used to analyze data. The results of the study revealed that; secondary schools in Ilorin metropolis have ICT facilities but not in required quantities and majority of them are not in good state for effective teaching and learning in many schools. A lot of constraints are contributing to the poor state of ICT facilities in secondary schools. This study made some recommendations in line with the findings, one of which is to encourage school administrators, teachers and students toward good maintenance culture of ICT facilities in schools.

Keywords: communication, efficiency, information, technology, facilities, availability

Introduction
Effective and quality education can only be achieved through adequate teaching and learning. Using innovative technology in imparting and acquiring knowledge in an educational environment help teachers to give the expected outcome (Makinde, 2020a). Nigeria, as a developing nation, aims to achieve quality education. The Nigerian National Policy on Education (FRN, 2015) stated that education should sustain its citizens and society. One crucial means deployed for this purpose is Information Communication Technology (ICT). ICT is any communication devices or facilities like cell phones, television, radio, computer, printer, photocopiers, social networking websites, and satellite systems, among others that are developed as tools and capable of supporting effective educational delivery (Yusuf, 2007).

Akinsola (2014) reported the need for the Federal Government of Nigeria to make the use of Information communication technology (ICT) facilities compulsory in teaching and learning. It was noted that despite its potential in the development of education, not many schools in Nigeria had extensively adopted ICT facilities for teaching and learning. It was added that education has been greatly influenced by ICT, which has undoubtedly affected teaching, learning, and research. Akinsola (2014) opined that if ICT is in full adoption in Nigerian schools, it will have a positive impact on teaching, learning, and research. Recently, research had proven that ICT had great benefits and high potential to improve the quality of education at all levels. To students, ICT has the potential to accelerate, enrich and deepen

skills to motivate, engage and help to relate school experience to work practices because the improved quality of education was essential to the creation of effective human capital in any country. The need for ICT in the Nigerian educational system cannot be overemphasized because in this technology-driven age, everyone requires ICT competence to survive. The recent efforts made by the government toward the integration of ICT into the educational system have not had much impact. Problems such as poor policy and project implementation strategies and limited or poor information infrastructure militate against these efforts. However, the ministries of education at both federal and state levels were urged to post ICT-skilled teachers to teach in primary and secondary schools for the implementation of the integration of ICT in schools (Akintola, 2014).

In a high-quality 21st-century education system, Information Communication Technology (ICT) can play a coordinating role in transforming teaching and learning assessment practices for teachers and students (Tondeur et al., 2008). Students observed that ICT facilitated their access to subject information on the Internet (Suspitsyna, 2012). On this planet earth, it is observed that teachers and schools are constantly engaged in consolidating how to teach, learn and assess learning, therefore, it is important to entrench ICT facilities in the educational system at all levels if these must be achieved (Lowder & Regmi, 2020). According to Kopcha (2012), developed countries like China, Russia, Japan, Britain, and Germany have authoritatively confirmed the potential of the ICT facilities in helping to transform teaching, learning, and assessment practices in a very positive way. The adoption of ICT infrastructure in secondary schools is one initiative that makes it possible for the education system all over the world to meet the challenges of the 21st century as identified in the first edition of the implementation guidelines for the National Policy on ICT in Education as necessitated by the need to facilitate the actualization of the policy within a given timeline (Federal Ministry of Education, 2019a).

The factors responsible for ICT facilities adoption comprise five factors such as assistance or support factors, availability factors, infrastructural factors, learning tools factors, and cognitive factors. The factors if managed well will improve the level of ICT adoption in Nigeria (Ogundile *et al*., 2019). ICT facilities can support more powerful and complete knowledge-building experiences for learners if there are integrated well-designed technologies. It can also provide a learning environment that allows students to learn by solving problems, thinking for themselves, and collaborating with others (Kimanzi *et al*., 2018).

According to Olugbemi and Ajileye (2021), it was revealed that secondary schools have ICT facilities but not available in required quantities and hence hindered their usage for effective teaching and learning in many schools due to a lot of constraints that are bedeviling in secondary schools such as time, inadequate training of teachers, access to ICT facilities, resistance to change and attitude of teachers to new technology among others. To implement the use of ICT infrastructure in secondary school teaching and learning, different countries attempted to craft national policies to guide and direct ICT integration into education and social programs (Hallissy *et al*., 2013).

In Africa, the use of the ICT infrastructure in education is still in its initial stages and the majority of the countries risk being left behind in technological advancement due to the slow pace at which they are integrating ICT in their education system (Lloyd, 2020). Unfortunately, most developing countries including Sub-Saharan Africa, for example, Uganda, Ghana, Liberia, Zambia, Kenya and Sudan among others have limited application and use of ICT in Education in spite of elaborate ICT policies in Education being in place (Bariu, 2022). Their policies are not responsive to the specific needs of the education sector

with an emphasis on the utilization of ICT for economic returns outside schools (Achimugu *et al*., 2010). Therefore, there is a lag in the adoption of digital technology because they have financial problems, lack of priority towards education, myopic investment, and cultural and negative attitudes toward the digital world.

In Nigeria, the Federal Government adopted a National Information and Communication (ICT) aimed at providing a framework for streamlining the ICT sector, and enhancing its ability to catalyze and sustain social-economic development critical to Nigeria's vision of becoming a top 20 economy by the year 2020. Concurrently, the policy thrust will facilitate the transformation of Nigeria into a knowledge-based economy and will be used to develop action plans, sub-sectional policies, and specific implementation guidelines as appropriate. The Federal Ministry of Education, recognizing the need to reposition the education sector in Nigeria to meet global standards and competitiveness, developed the Nation Policy on Information and Communication Technology (ICT) in Education in collaboration with relevant stakeholders. The policy was subsequently approved by the Federal Executive Council in April 2010 for implementation across the Federation. The policy provided the needed guidelines on expectations for the entire process of ICT integration in education to all stakeholders. Its implementation is expected to lead to the speedy transformation of teaching, learning, and educational administration in Nigeria (Federal Ministry of Education, 2019b).

For many schools especially in the rural areas supporting infrastructure such as electricity disqualifies them even when an opportunity for the donation of ICT arises. Normally, the criteria for placing computers and ICT facilities in a school are security, electricity supply, and availability of ICT literate teachers among other factors (Swarts & Wachira, 2009). Due to the lack of power connection some schools, resort to the use of generators to provide electricity to power the computers (Menjo & Boit, 2010). Such sources of power are highly inconvenient since they are normally used during the night. Consequently, few teachers are able to utilize the technology, leading to the low frequency of ICT. However, a scheme meant to improve accessibility to computers by teachers has been initiated. Teachers in public schools will be facilitated to acquire laptops through a check-off system. The report observes that the initiative is meant to encourage teachers to use modems and other educational tools. Maintenance of computers is vital if they are to be optimally used. In the report, an estimated 60% of the ICT infrastructure in schools is not really used due to a lack of maintenance and technical support (Stuart *et al*., 2009).

Maintenance, in this case, refers to actions taken on equipment and systems for example repair, upgrades, diagnostic, and other preventive measures; while technical support refers to actions taken on behalf of users to keep the working or help them out of the IT systems. For example, help desk and initial training. The literature does not reveal the real significance of access in terms of availability of physical resources as a factor hindering successive use of computers in the teaching and learning process. The study established that most of the ICT infrastructure facilities in the selected schools were obsolete and others had broken down and had no repair. Tamba (2011), cited in Yuliani, and Mercuriani (2021) observed that ICT implementation in teaching and learning is still relatively low because it can be influenced by several hindrances which include poor state of ICT facilities among others in schools.

By providing adequate and up to-date ICT infrastructural facilities, there is the likelihood of staff professional development where staff learns on the job as they use them in the process of teaching in school. This would create a good working school environment where staff and students feel valued and cared for (Hennessy *et al*., 2010). Through regular and consistent

use of ICT hardware, teachers and learners who are not competent in its use could develop the required skills in the use of ICT for teaching and learning in schools.

It is essential to develop a thorough rationale before tousling the ICT facilities in schools and classrooms. Broadly, with the increasing availability of computer hardware, it is very important that teachers do not become unwrapped in the machine but focus rather on their primary roles as educators. The teachers' imaginations need to be developed in the area of computer technology in order for them to be able to achieve more of the set goals (Papaioannou & Charalambous, 2011). According to Makinde (2020b), ICT facilities have become a daily playing machine for schooling children and there would be a tremendous achievement in both social lives and academic performance of students if social and mass media as part of ICT facilities are monitored properly for children's use. This cannot be possible if the computer technology of teachers is not developed or else the teachers may become the students in this digital age.

Teaching has always been emphasizing content. For many years course work has been revolving around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favouring curriculum which promotes competency and performance. Curriculum have started emphasizing capabilities and are concerned more with how the information will be used than with what the information is. Contemporary ICT is able to provide strong support for all these requirements and there are now many outstanding examples of world-class settings for competency and performance-based curriculum that makes sound use of the affordances of these technologies (Kopcha, 2012).

The integration of information and communication technologies could help revitalize teachers and students in secondary schools. This can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and the development of intervention change strategies which should include teaching partnerships with ICT tools. Further, there are three conditions necessary for teachers to introduce ICT and use it in their classrooms: teachers should believe in the effectiveness of technology, should believe that the use of the technology will not cause any disturbances in students learning, and finally in their control over the new technology (Cheung & Slavin, 2012). However, research studies have shown that most teachers do not make use of the potential of ICT to contribute to the quality of learning environments in spite of the value attached to the technology (Butler, et al., 2018). Consequently, the use of ICT does not only enhance learning but also prepares the next generation for future lives and careers (Wondemtegegn, 2018).

It was against this background that the researchers examined the state of ICT facilities used for teaching and learning in schools: a study of selected secondary schools in Ilorin Metropolis, Kwara State, Nigeria.

Statement of the Problem

The state of Information Communication Technology (ICT) facilities in Nigerian secondary schools has not been sustainable for a long period of time. This is revealed by the fact that the majority of the schools are not equipped and those that were equipped are not well equipped with basic ICT facilities essential for effective teaching and learning. The ICT facilities in education increase access, evaluate information from different sources to enhance teaching and learning and maintain the quality of education holistically. Nigeria national policy on education indicated that access provision of ICT to schools will enhance the quality of education and improve the productivity of the nation. This in turn will develop

highly-skilled manpower who can satisfactorily respond to economic, political, and social challenges of the 21st century. ICTs use in education programmes involve huge capital investments and developing countries including Nigeria must be judicious in making decisions about what ICT facilities will be introduced and to be conscious of the status and maintaining economies of scale. Some teachers and school administrators find it very difficult to effectively tally their ICT instructional materials and facilities such as computers, digital cameras, printers, electronic white boards, projectors, photocopiers, scanners, and internet among others, to the educational goals, which catalyse information search and trait formulation. It is upon this background that the study sought to investigate the state of the ICT facilities used for teaching and learning in secondary schools in Ilorin metropolis, Kwara State, Nigeria.

Research Questions

The following research questions were answered in the study:

(i) What are the ICT facilities available in secondary schools for teaching and learning in Ilorin metropolis, Kwara State?

(ii) What is the status of the available ICT facilities used in secondary schools for teaching and learning in Ilorin metropolis, Kwara State?

Methodology

This study adopted a descriptive research design of survey type. The design was adopted because it involved the collection of data from a large population for the purpose of generalization. The population consisted of all principals, teachers and students in Ilorin metropolis, Kwara State, Nigeria. A sample of ten (10) principals, 50 teachers and 100 Senior Secondary School 3 (SSS3) students were randomly selected from the ten (10) purposive selected secondary schools in Ilorin metropolis, Kwara State in ratio 1:5:10 which comprises of 3 Local Government Areas (LGAs) of Ilorin West, Ilorin South and Ilorin East LGAs that constituted Ilorm metropolis. The SSS3 students was selected because they are more aware of the importance of ICT and more willing to participate in the study. A questionnaire was the main source of the primary data. The selected schools were public secondary schools because both the state and federal government invested on ICT facilities in schools. The researchers' developed questionnaire and checklist were used for data collection. The checklist instrument with 'Yes' or 'No' Scale was used to collect information on the availability of common ICT facilities in schools while the questionnaire was made up of two sections A and B.

Section A elicited demographic information of the respondents while section B was constructed in a five-point modified Scale to collect data on the research question on the state of ICT facilities in schools (i.e. level of quality). The five-point scales for response are Poor (P), Fair (F), Good (G), Very Good (VG), Excellent (E). The instruments were validated through expert judgment involving two lecturers, one in educational technology and the other from test, measurement and evaluation. This was done to establish both content and face validity. The questionnaire was further trial tested with similar sample of 2 principals, 10 teachers, and 15 students that were not involved in the study. A correlation coefficient of 0.69 and 0.72 were established for the instruments respectively using test-re-test method within three weeks interval. Copied of the instruments were directly administered on the respondents and retrieved immediately after their response. This was done to reduce mortality of the instruments. Frequency and percentages were used to answer the research questions. 50.0% and above was considered 'Yes' and 'Good', while below 50.0% was considered 'No' and 'Bad'. For clarity, the scale Good, Very Good and Excellent was collapsed as 'Good' while that of poor and fair was collapsed as Bad for easy interpretation. Since the fair state of ICT cannot yield expected results, it was considered as not being good for the

case of this study.

Results

Research Question One: What are the ICT facilities available in secondary schools for teaching and learning in Ilorin metropolis, Kwara State?

Table 1: Available of ICT facilities in schools

		Computer		Printer		Scanner		Photocopier		Camera		Internet		Projector	
Respondent	(N)	Yes (%)	No (%)	Yes (%)	No (%)	Yes(%)	No (%)	Yes(%)	No (%)	Yes(%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Principals	10	46.3	53.7	31.3	68.7	10.1	89.9	25.2	74.8	58.6	42.4	20.6	79.4	31.3	68.7
Teachers	50	31.5	68.5	43.4	56.6	4.6	95.4	19.7	80.3	45.6	54.4	14.7	85.3	43.4	56.6
Students	100	29.9	70.1	12.8	87.2	14.3	85.7	23.9	76.1	54	46	11	89	12.8	87.2
Totals	160	107.7	192.3	87.5	212.5	29	271	68.8	231.2	158.2	142.8	46.3	253.7	87.5	212.5

Source: Field Survey, 2022

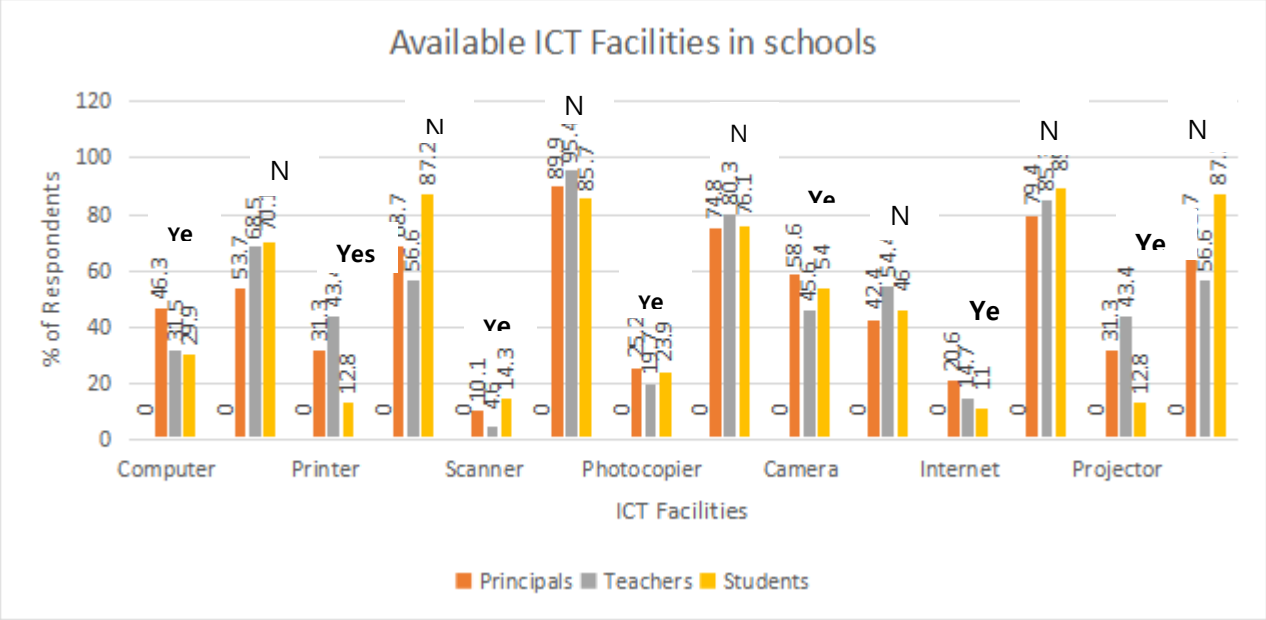

Figure 1: Availability of ICT facilities in secondary schools
Source: Field Survey, 2022

As indicated in the result presented in Table 1 and Figure 1, it was observed that 53.7% of the principal respondents indicated not having computers in their schools and 46.3% indicated otherwise, 68.5% of teachers confirmed that their schools had no computers while 31.5% indicated otherwise. Similarly, among the students, 70.1% indicated that their schools had no computers while 29.9% indicated otherwise. This implied that many secondary schools in the Ilorin metropolis did not have computers thus there is no possibility of using them. This suggested that they are not using them in teaching and learning activities in their various schools in the Ilorin metropolis.

On the availability of photocopiers, it was noted that 68.7% of the principal respondents indicated not having printers in their schools and 31.3% indicated otherwise, 56.6% of teachers confirmed that their schools had no printers while 43.4% indicated otherwise. Similarly, among the students, 87.2% indicated that their schools had no printers while

12.8% indicated otherwise. This implied that many secondary schools in the Ilorin metropolis did not have printers thus there is no possibility of using them. This suggested that they are not using them in teaching and learning activities in their respective schools. In the same vein, it was observed that 89.9% of the principal respondents indicated not having scanners in their schools and 10.1% indicated otherwise, 95.4% of teachers confirmed that their schools had no scanners while 4.6% indicated otherwise. Among the students, 85.7% indicated that their schools had no scanners while 14.3% indicated otherwise. This implied that many secondary schools in the Ilorin metropolis did not have scanners thus there is no possibility of using them. This suggested that they are not using them in teaching and learning activities in their various schools in the Ilorin metropolis.

On the availability of photocopiers, it was noted that 74.8% of the principal respondents indicated not having photocopiers in their schools and 25.2% indicated otherwise, 80.3% of teachers confirmed that their schools had no photocopiers while 19.7% indicated otherwise. Similarly, among the students, 76.1% indicated that their schools had no photocopiers while 23.9% indicated otherwise. This implied that many secondary schools in the Ilorin metropolis did not have photocopiers thus there is no possibility of using them. This suggested that they are not using them in teaching and learning activities in their respective schools.

On the availability of cameras, it was noted that 42.2% of the principal respondents indicated not having cameras in their schools and 58.6% indicated having them, 54.4% of teachers confirmed that their schools had no cameras while 45.6% indicated otherwise. Similarly, among the students, 46.0% indicated that their schools had no cameras while 54.0% indicated having them. This suggested that most schools in the Ilorin metropolis had cameras that they use in teaching and learning.

On the availability of internet, it was noted that 79.4% of the principal's respondents indicated not having internet in their schools and 20.6% indicated otherwise, 85.3% of teachers confirmed that their schools had no internet while 14.7% indicated otherwise. Among SSS3 student respondents, 89.0% indicated that their schools had no internet while 11.0% indicated otherwise. This implied that many secondary schools in the Ilorin metropolis did not have photocopiers thus there is no possibility of using them. This suggested that they are not using them in teaching and learning activities in their respective schools.

On the availability of projectors in the schools, 68.7% of the principal's respondents indicated not having projectors in their schools and 31.3% indicated having them, 56.6% of teachers confirmed that their schools had no projectors while 43.4% indicated otherwise. Similarly, among the students, 87.2% indicated that their schools had no projectors while 12.8% indicated having them. This suggested that most schools in the Ilorin metropolis have no projectors hence, no chance of using them in teaching and learning activities in their schools. This is in line with the findings of Bariu (2020) who established that most schools have a low investment in ICT infrastructure due to the high cost of computer hardware, software, and related accessories and that there is a need for all stakeholders to address the lingering issues of ICT use in teaching and learning if the schools do not want to be lag behind. This suggested that most secondary schools in the Ilorin metropolis are not using ICT in teaching and learning activities.

Research Question Two: What is the status of the available ICT facilities used in schools for teaching and learning in Ilorin metropolis, Kwara State?

Table 2: Status of ICT facilities in schools

	Computers		Printers		Scanners		Photocopiers		Cameras		Internets		Projectors	
Respondent	Good %	Bad %	Good %	Bad %	Good %	Bad %	Good %	Bad %	Good %	Bad %	Good %	Bad %	Good %	Bad %
Principals	30	70	26	74	10	90	50	50	38	62	50	50	25	75
Teachers	33.6	66.4	65.5	34.5	2	98	34.3	65.7	76	24	39.3	60.7	59.5	40.5
Students	29.6	70.4	51	49	21	79	33.8	66.2	56.9	43.1	25	75	35	65
Total	93.2	206.8	142.5	157.5	33	267	118.1	181.9	170.9	129.1	114.3	185.7	119.5	180.5

Source: Fieldwork, 2022

According to Table 2, 70% of principals' respondents showed that the state of computers in their schools was poor while 30% indicated it was good. 66.4% of teachers indicated it was poor while 33.4% indicated they were in a good state. While among SSS3 students 70.4% indicated it was poor while 29.6% indicated it was good. This suggested that the state of computers in most secondary schools in Ilorin metropolis is poor.

On printers, 74.0% of principals' respondents showed that the state of computers in their schools was poor while 26.0% indicated it was good. 34.5% of teachers indicated it was poor while 65.5% indicated they were in a good state. While among the students 49.0% indicated it was poor while 51.0% indicated it was good. This suggested that the printers in most secondary schools were in good condition.

On scanners, 90.0% of principals' respondents showed that the state of scanners in their schools was poor while 10.0% indicated it was good. 98.0% of teachers indicated it was poor while 2.0% indicated they were in a good state. While among SSS3 students 79.0% indicated it was poor while 21.0% indicated it was good. This suggested that the state of scanners in most secondary schools in the Ilorin metropolis is poor.

On photocopiers,50.0% of principals' respondents showed that the state of photocopiers in their schools was poor while 50.0% indicated it was good. 65.7% of teachers indicated it was poor while 34.3% indicated they were in a good state. While among SSS3 students 66.2% indicated it was poor while 33.8% indicated it was good. This suggested that the state of photocopiers in most secondary schools in Ilorin metropolis was in poor condition hence no possibility of being used in teaching and learning.

On cameras, 62.0% of principals' respondents showed that the state of cameras in their schools was poor while 38.0% indicated it was good. 24.0% of teachers indicated it was poor while 76.0% indicated they were in a good state. While among SSS3 students 43.1% indicated it was poor while 56.9% indicated it was good. This suggested that the state of digital cameras in most secondary schools in the Ilorin metropolis were in good condition hence there are possibility of being used in schools for teaching and learning activities.

On the internet, 50.0% of principals' respondents showed that the state of internet facility in their schools was poor while 50.0% indicated it was good. 60.7% of teachers indicated it was poor while 39.3% indicated they were in a good state. While among the students 75.0% indicated it was poor while 25.0% indicated it was good. This is in line with Watson (2009) who confirmed that in developing countries budgetary allocation for deploying ICT in schools' education is typically limited and led to a high initial cost of setting up ICT systems, the cost factors work as a further deterrent. This suggested that the internet facility in most secondary schools in the Ilorin metropolis was in a poor state. Hence cannot be used for teaching and learning activities in their respective secondary schools.

On projectors, 75.0% of principals' respondents showed that the state of projectors in their schools was poor while 25.0% indicated it was good. 40.5% of teachers indicated it was poor while 59.5% indicated they were in a good state. While among the students 65.0% indicated it was poor while 35.0% indicated it was good. This suggested that the projectors in most secondary schools were in poor condition hence not being used for teaching and learning activities in the schools.

Discussion

The finding indicated that secondary schools in Ilorin metropolis have ICT facilities but they are not adequately available. The finding is in agreement with Olugbemi and Ajileye (2021) who opined that ICT integration in teaching and learning in secondary schools not sufficiently available and hence cannot be used effectively for teaching and learning in schools.

The finding indicated that secondary schools in Ilorin metropolis have some ICT facilities but majority of them are not in good condition which hindered effective use of them for teaching and learning in schools. This finding is supported by Tamba (2011), cited in Yuliani, and Mercuriani (2021) who observed that ICT implementation in teaching and learning is still relatively low because it can be influenced by several hindrances which include poor state of ICT facilities in schools.

Conclusion

The main objectives of this paper was to investigate the state of ICT facilities used for teaching and learning in secondary schools in Ilorin metropolis, Kwara State. The findings of this study indicated that (i) secondary schools in Ilorin metropolis have ICT facilities but not adequately available; (ii) secondary schools in Ilorin metropolis have ICT facilities but the majority are either obsolete or not in good state for effective usage for teaching and learning in schools due to lack of maintenance culture or nonchalant attitude from both the government, school administrators, teachers and students.

Recommendations

Following the conclusion of the study, the recommendations are thereby suggested as follows:

(i) The researchers recommend that all teachers in the teaching service to be taken refresher courses in ICT in order to equip them with new ICT skills that would make it easier to use the ICT facilities in teaching and learning in secondary schools.
(ii) The government should assist in initial ICT facilities supply to secondary schools. This would enable easy take-off and make the ICT facilities accessible and use in secondary schools for teaching and learning activities.
(iii) The government should also ensure adequate ICT-trained technicians to maintain and repair ICT facilities in schools when the need arises. This may enable the Nigerian government to achieve the set goals of the National Implementation Guidelines for ICT in Education of 2019.

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