

## The Challenges Toward Implementation of Information and Communication Technology (ICT) in Secondary Schools in Ondo State, Nigeria

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**ABSTRACT:** The study investigated the Challenges of Information and Communication Technology (ICT) in secondary schools in Ondo state. It sought to find out the level of access to ICT among secondary school teachers and students. Also the study investigated the level of utilization of ICT for instructional purposes and the attitude of teachers and students towards ICT utilization of ICT in secondary schools.

The study adopted the descriptive survey design. The sample for the study consisted of 450 teachers randomly selected from two hundred and ninety six (296) secondary schools in the eighteen Local Government Areas of Ondo State. A combination of multistage, stratified and simple random sampling technique was used in selecting the sample. A questionnaire titled "Challenges of information and communication technology for secondary schools teachers (CICTSST)" was designed and validated. The data obtained were analyzed using frequency counts, percentages, mean and bar chart. The result of the findings showed that: ICT facilities are not available in schools. Majority of the teachers and students do not have access to ICT. There are significant factors affecting the utilization of ICT for instructional purposes. The study also revealed that teachers show positive attitude toward utilization of ICT in teaching and learning.

**KEYWORDS:** Challenges, Information and Communication Technology, Implementation, instructional purposes and Secondary Schools.

### 1 INTRODUCTION

Everyday, Computers become more important factor in today's society because there is virtually no human endeavour where Computer does not find applications. Indeed, we are confronted with computers during working hours and in our private lives. The same applies to communication. Nowadays, we have much more possibilities to communicate with other people as a result of computer networking. Mobile phones, electronic mail, short message service (SMS) and chat-boxes are few examples of the new possibilities actualised through communication. All these new communication means have their own specific way of using them, their own advantages and disadvantages and their own specific group of users.

The Information and Communication Technology (ICT) is one of the important innovations for modern development. The term ICT springs up from the convergence of telecommunication, computing and broadcasting through the use of digital information. It covers any product that will store, retrieve, manipulate, transmit and receive information electronically in a digital form. ICT encompasses the broad fields of information and communications by means of computer and telecommunication; tools that are being increasingly used for organizational or personal information processing in all sectors of economy and the society as a whole.

The upcoming of ICT technologies has its implications on school and education. It is not possible to ignore computers anymore. Education is faced with the challenge to incorporate computers and communication possibilities in a meaningful way. But this challenge has a reason: When used in proper ways, ICT can improve education in many way students have to learn about computers. But other subjects can be taught with computers. The use of computers in education can be more efficient, it can provide better learning results and be made adaptive to the individual learner [7]. The role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed in contemporary education policy. Most experts in education agree that, when properly used, ICT holds great promise to improve teaching and learning [1].

Reference [9] also refer to ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. Information and Communication Technologies (ICTs) have impacted greatly on teaching, learning, research, and school management in a number of ways. They are electronic technologies used for accessing, processing, gathering, manipulating and presenting or communicating information. When ICTs are employed in education given the right condition, they can accelerate, enrich, and deepen basic skills in reading, writing, mathematics and the sciences, and they can motivate and engage students to learn as they become more independent and responsible for their learning. Reference [6], ICT is a revolution that involves the use of computers, internet and other tele-communication technology in every aspect of human endeavor. The author posited that ICT is a simply about sharing and having access to data with ease. It is regarded as the super highway through which formation is transmitted and shared by people all over the world.

Furthermore, ICTs help to relate academics to the practices of today's work. Information and communication technologies, especially network technologies have been found to encourage active learning, support innovative teaching, reduce the isolation of teachers, and encourage teachers and students to become active researchers and learners.

## **2 PURPOSE OF THE STUDY**

This study is designed to investigate the Status of Information and Communication Technology (ICT) in Secondary Schools in Ondo State.

Specifically, the study examined:

- The level of access to ICT among secondary school teachers and students
- The level of utilization of ICT for instructional purposes.
- The attitude of teachers towards ICT utilization in secondary schools.

## **3 RESEARCH QUESTIONS**

Based on the purpose of this study, the following research questions were generated to guide the study.

1. Are ICT tools available in schools?
2. Do teachers have access to ICT facilities?
3. What are the factors hindering the effective utilization of ICT facilities for instructional purposes?
4. Do teachers have positive attitude toward the utilization of ICT in teaching and learning?
5. Do students have access to ICTs?

## **4 METHODOLOGY**

This study adopted the descriptive design of the survey type. The sample for the study consisted of 450 teachers randomly selected from two hundred and ninety six (296) secondary schools in the eighteen Local Government Areas of Ondo State. A combination of multistage, stratified and simple random sampling technique was used in selecting the sample. Stratified random sampling technique based on urban/ rural location was adopted in the selection of the nine Local Government Areas and five schools from each Local Government Area. Ten teachers were drawn from each school using simple random sampling technique which implies that 50 teachers will be drawn from each Local Government Area giving a total of 450 teachers (respondents).

A questionnaire titled "Challenges of Information and Communication Technology for Secondary School Teachers (CICTSST)" was used to collect the data. The instrument was validated and administered on the respondents through trained research assistants. Data collected were analyzed using frequency counts, percentages, mean and bar chart.

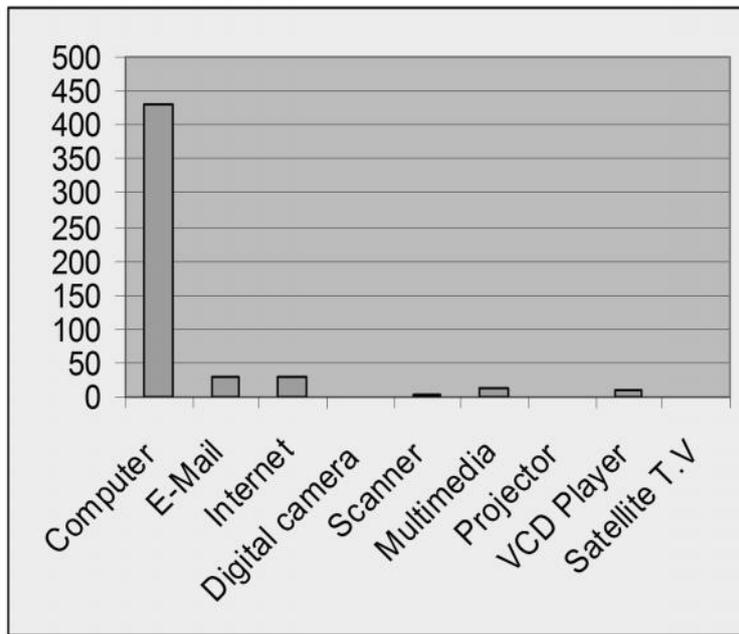
5 RESULTS

The findings of the study are presented below:

**Research Question1:** Are ICT tools available in schools?

*Table 1. Availability of ICT tools in secondary schools*

ICTs	N	F	%
Computer	450	429	95.33
E-Mail	450	30	6.67
Internet	450	30	6.67
Digital camera	450	0	0
Scanner	450	2	0.44
Multimedia	450	12	2.67
Projector	450	0	0
VCD Player	450	11	2.44
Satellite T.V	450	0	0



*Fig. 1. Graph showing summary of ICT facilities available in secondary schools*

Figure 1 shows that aside of other identified ICT facilities; it is only computer that is available in schools.

**Research Question 2:** Do teachers have access to ICT facilities?

Table 2. Mean summary of teachers' access to ICT facilities in schools

S/N	AGREE	DISAGREE	MEAN $\bar{X}$	REMARKS
ITEMS				
1. I have computer at home	106	344	2.04	DISAGREED
2. I can operate computer	120	330	2.0	DISAGREED
3. I use computer in the school.	111	339	1.98	DISAGREED
4. I have e-mail and I can check my e-mail address in the school and at home.	107	343	1.97	DISAGREED
5. I have attended computer training and seminar.	112	338	1.99	DISAGREED

Table 2. indicated that majority of the respondents disagreed on items 1-5. This signifies that majority of the teachers in secondary schools do not have computer at home, they cannot operate computer, they do not have access to computer in their various schools, they do not have e-mail addresses talk less of checking their e-mail addresses and they have not attended computer training and seminar. The results indicate that teacher do not have access to ICT facilities.

**Research Question 3:** What are the factors hindering the effective utilization of ICT facilities for instructional purposes?

Table 3. Mean summary of factors hindering effective utilization of ICT facilities for instructional purposes

S/N	ITEMS	AGREE	DISAGREE	MEAN $\bar{X}$	REMARKS
1.	Teachers lack of ICT skills hinders the usage of ICT in secondary schools.	339	111	3.06	AGREED
2.	Lack of confidence in using ICT hinder the teacher's readiness and confidence in using ICT.	334	116	2.98	AGREED
3.	Insufficient knowledge of appropriate software contributes to non-implementation of ICT.	296	154	2.72	AGREED
4.	Lack of knowledge of how to evaluate the use and the role play by ICT in teaching and learning hinders the confidence of using ICT.	327	123	2.89	AGREED
5.	Insufficient knowledge of how to use ICT equipment hinders the readiness of using ICT.	334	116	2.96	AGREED
6.	Unavailability of infrastructure contributes to non-implementation of ICT policy in schools.	310	140	2.98	AGREED

The result in table 3 showed that the majority of the respondents agreed on the whole items (1-6). This is to say that teacher's lack of ICT skills, lack of confidence in using ICT, Insufficient knowledge of how to use ICT equipment, unavailability of infrastructure, lack of knowledge of how to evaluate the use and the role played by ICT in teaching and learning and insufficient knowledge of appropriate software are factors hindering the effective utilization of ICT facilities for instructional purposes.

**Research Question 4:** Do teachers have positive attitude toward the utilization of ICT in teaching and learning?

*Table 4. Mean summary of teachers' attitude toward utilization of ICT in teaching and learning*

S/N Items	AGREE	DISAGREE	MEAN $\bar{X}$	REMARKS
1. ICT makes teaching more efficient	380	70	3.33	AGREED
2. Using ICT makes lesson have fun.	350	100	3.04	AGREED
3. Using ICT improves presentation of materials	360	90	3.18	AGREED
4. Using ICT makes teaching more diverse and encourages individual learning.	307	143	3.31	AGREED
5. ICT assists in carrying out administrative work.	307	143	2.97	AGREED

Table 4 revealed that majority of the respondents agreed on all the items 1-5. This signifies that teachers show positive attitude toward utilization of ICT in teaching and learning.

**Research Question 5:** Do students have access to ICTs?

*Table 5. Mean summary of students' level of access to ICT*

S/N	AGREE	DISAGREE	MEAN $\bar{X}$	REMARKS
1. Students have access to ICTs in the schools.	187	263	2.34	DISAGREED
2. My students use computer only during computer lessons.	170	280	2.22	DISAGREED

Table 5 revealed that the majority of the respondents disagreed that students have access to ICT facilities in their schools. This result therefore shows that students do not have access to ICT.

## 6 DISCUSSION

On the issue of access to ICT facilities in the respondents various schools, the findings showed that aside of other identified ICT facilities, it is only computer that is available in their various schools. This is in disagreement with the report by [2] that ICT equipment like internet, video player, digital camera, data projector is adequate and available in the respondents various schools. Reference [10] confirmed that teachers are indispensable to successful computer education. The ultimate to use or not to use the computer is dependent on the individual teachers. Successful implementation of computer education can only be assured through teachers who acquired the necessary knowledge and skills.

Reference [10] study which investigated teachers' self- efficacy in implementing of computer education in Nigerian secondary school found that:

- Most of the teachers in Federal Government Colleges in Nigeria do not have the needed experience and competence in the use of computer either for educational or industrial purposes.
- A majority of male and female teachers in Federal Government Colleges do not have needed competence in basic computer operations.
- Most of the teachers in Federal Government Colleges in Nigeria do not have the needed skills and knowledge in the use of common computer software.

## **7 CONCLUSION**

The results obtained from the analyses of the data gathered in this research indicated that majority of teachers do not have access to ICT. This is because the ICT facilities are not available for teachers' access. The result showed that factors such as lack of skills, lack of confidence, insufficient knowledge of ICT equipment on part of the teachers, unavailability of infrastructure, insufficient knowledge of appropriate software and lack of knowledge of how to evaluate the use and the role to play by ICT in teaching and learning are factors affecting the utilization of ICTs for instructional purposes. The finding further revealed that teachers' lack of ICT skills hinders the effective implementation of ICT in secondary schools.

The study also shows that application of ICT in the classroom makes lesson very interesting and easy to deliver. The finding of the study also revealed that teachers show positive attitude toward the utilization of ICT in teaching and learning.

## **8 RECOMMANDATIONS**

Consequent upon these findings of this study, the following recommendations were made:

- ICT Professionals should organize individualist training for teachers on how to utilize ICT facilities in solving everyday educational problems.
- Federal, state and local government, corporate bodies and PTA should extend helping hands in the provision of ICT facilities to schools within their locality.
- The government should employ applicants with B.sc(Ed) and B.Ed. Computer education to teach the subject in our secondary schools.
- The government should provide enough funds for schools to purchase computer for instructional purposes and make available suitable computer environment in our secondary schools.
- Conferences, workshops and symposium should be organized to train people and enlighten them on the need for computer education.
- Curriculum developers should make computer education one of the core subjects to be offered in secondary schools.
- The state ministries of education through their local inspectors of education (LIE) should monitor the implementation of computer education program in Nigeria secondary schools.

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