

---

## CAPACITY BUILDING OF ICT IN EDUCATION FOR TEACHERS: PANACEA FOR SECONDARY SCHOOL SECURITY CHALLENGES IN NIGERIA

**Kayode, Aderinsola Eunice; Agunbiade, Folasade Janet and  
Olaniyan, Abolade Shekinah**

Department of Educational Management,  
University of Ibadan, Oyo State.

Department of Computer Science Department  
University of Ibadan, Oyo State

Computer Science Department, The Ibarapa Polytechnic,  
Eruwa, Oyo State

---

### Abstract

*ICT is considered a powerful tool for educational change and reform and adeptness in Information and Communication Technologies (ICTs,) skills acquired in the use of ICT gadgets is now regarded as important as basic reading and writing skills. The study examined the Impact of Information and Communication Technology (ICT) on capacity building of ICT in Education for Teachers: Panacea for Secondary School Security Challenges, a case of Abadina Grammar School in Oyo State, Nigeria. The descriptive survey design was adopted for the research work and forty-eight (48) teachers were purposely selected and all copies of the questionnaire were dully filled and returned. A self-designed questionnaire on “Capacity building of ICT in Education for teachers: Panacea for Secondary School Security Challenges questionnaire was used to collect data, and analysis was done to organize the data for natural interpretation. The findings further showed that effort should be made to equip Abadina Grammar School (AGS) teachers with the knowledge, understanding and skills of ICT to have security with their records keeping and how to use ICT for classroom teaching. It was recommended that there should be regular trainings for all the teachers and government should assist the school in providing relevant ICT equipment to aid the use of Computer tools for the classroom teaching and learning.*

**Keywords:** Information and Communication Technology (ICT), Capacity Building, Teachers and Security Challenges

---

### Introduction

Globally, the integration of Information and Communication Technology (ICT) in this 21st century has led to increase in the use of computer which has improved teaching and learning in traditional learning (Govender, 2016). Technology is human innovation in action, and use of ICT skills are the new literacy for a technology-empowered in educational environment (Nayar, 2018). ICT has resulted in a continually changing environment in educational setting. ICT has become an important and popular tool of information retrieval. Teachers in Secondary Schools in Nigeria should not only be aware of ICT but should also feel the effect of ICT in Education in their teaching quality and delivery as a whole. Albrini (2006) noted that

the integration of ICT into education has been assumed as the potential of the new technological tools to revolutionize an outmoded educational system. Use of ICT in education generally, is an advancement on individual skills in all ramifications which enhanced effective classroom-based teaching and learning (Noor-UI-Amin, 2013).

In the recent year, educational activities in Secondary School in Nigeria have involved the integration and utilization of ICT in the classroom activities in using ICT gadgets to improve the quality of education (Okolije, 2016). To improve the quality of education, it depend upon the ICT training provided to the teacher which will secure records keeping and other activities in the school premises.

According to Baskin and Williams (2006), ICT Integration into teaching and learning is a significant improvement essential in this Information Age. ICT usage by teachers in Nigeria secondary School for teaching and learning is fast gaining recognition because of the need of most secondary schools in Nigeria to meet up with the global academic community. The benefits of using ICT as a teaching tool and additional teaching method for students in Secondary school has positive impact in teaching and learning.

The teacher's primary role is to help students understand particular subject matter, others are secondary. Therefore, the focus of teachers should not be on the technology itself, but on how ICT can improve performance of students and also in the core areas of the teacher's job. Accessibility to the use of technology tools in the secondary school has been of challenges for teachers, in order to inculcate ICT into their teaching and learning (Margareth, 2009). The usage of computer-based technologies (CTs) can help to broaden access to education and improve learning and administrative outcomes (Kayode, 2016). The success in the use of ICT in education depends largely on teachers and their level of skills in integrating ICT into the teaching to provide learner-centered and interactive education. Therefore, we need to build teachers capacity in use of ICT for education by training and retraining in new ICT tools, this will enable them to use ICT in the classroom and also to integrate it into teaching for effective and efficient delivery.

The benefit of using Information Communication Technology as a teaching tool in the classroom i.e. in all secondary schools cannot be over emphasized. To realize and quantify these gains, the level of acceptance among teachers has to be evaluated. This will definitely reflect their willingness and readiness to use Information Communication Technology as a teaching research tool in improving the teaching quality of knowledge made available, acquired and eventually digested by the students of secondary schools in Nigeria.

### **Statement of the Problem**

The world is now in the global age and it has transformed from the "Industrial Age" to the "knowledge Age" in which many developing countries agreed to accept the concept and use of ICT skills as part of the core value in education to enhance teaching and learning. Despite the great change that computer technology has brought to our generation to improve teachers' skills in teaching and learning, it seems inefficient of ICT knowledge in the area of common application of software such as word processing, spreadsheet, internet usage for effective instructional delivery, dissemination of information, administrative tasks and in the use of ICT for security in school database i.e. student record, report card, admission process and so on has not been effectively use by teachers in Secondary School in Nigeria. Many teachers in secondary schools are yet to maximally exploit the benefits of ICT use in teaching quality and work deliver as a whole. This is due to a number of factors like inadequate level of ICT use, lack of ICT facilities, infrastructural constraints, limited allocation finance, poor connectivity et cetera.

Equally, it seems most of the teachers in Abadina Grammar School do not have adequate in-service training, this may affects their attitude towards the usage of ICT in delivering their subjects in the classroom. Therefore, the challenges of modern day ICT in Education and teaching profession of teachers in secondary school is demanding some attentions and necessitating research to enhance its improvement. Hence, there is need to determine the capacity building of ICT in education for Teachers: panacea for secondary school security challenges in Nigeria.

### **Purpose of the Study**

The following were objectives:

- To determine the accessibility of the ICT tools used by teachers in AGS, Oyo State,
- To find out the effect of ICT usage on the teaching delivery of teachers in AGS, Oyo State,

- To examine the challenges facing the usage of ICT in teaching and learning among teachers in AGS, Oyo State.

### Research Questions:

The study was guided with the following research questions:

- ✓ What is the level of accessibility of teachers to ICT facilities?.
- ✓ What are the effects of ICT usage on the teaching delivery of teachers in AGS, Oyo State?
- ✓ What are the Challenges facing the usage of ICT in teaching and learning among teachers in AGS, Oyo State?

### Methodology

The study adopted a descriptive survey research design. The population of the study consist of forty-eight (48) teachers in Abadina Grammar School in Oyo State. The scope of the study was investigated on Capacity Building of ICT in Education for Teachers: panacea for secondary school security challenges in Nigeria and the study was purposely used and restricted to a target population of Teachers in Abadina Grammar School – Nigeria. The study involved a self-administered questionnaire and the ICT usage perceptible from the Schools' principal and

teachers were taken into account by collecting information about teacher's skills and required ICT facilities needs. More so, in addressing the issue of ethics, the researcher wrote letter of consent to the school authority and approval was granted from the Principal of the School (Abadina Grammar School) for official permission to convey research in their school. Twenty-two (22) items structured closed questionnaire were used together with Research Assistance to guide the respondents in filling the questionnaires. Cronbach Alpha reliability was used in order to obtain the internal consistency of the instrument in which the co-efficient value of 0.78 was obtained. The data were analyzed using descriptive statistics of frequency and percentage (%) for the research questions. Items of Yes were agreed upon and Items of No were disagreed upon.

### Results

The results of the study are presented in the following tables in accordance with the research questions.

**Research Question 1:** What is the level of accessibility of teachers to ICT facilities in AGS, Oyo State?.

**Table 1:** Descriptive analysis of Accessibility of teachers to ICT facilities

S/N	Accessibility to ICT facilities	Frequency		Percentage%	
		Yes	No	Yes	No
1	Computer room	6	42	12.5	87.5
2	Internet Access	8	40	16.7	83.3
3	Office Software (Word, Excel, Access data-based, projector, etc)	17	31	35.4	64.6
4	Scanner	5	43	10.4	89.6
5	Data Projector	4	44	8.3	91.7
6	Printer	22	26	45.8	54.2

The table1 above showed the responses of the teachers to the accessibility of ICT in the school. 6(12.5%) of the respondents agreed to access of computer room, 42 (87.5%) do not have such access. It was shown that 8 (16.7%)

have access to the internet and 40 (83.3%) do not have access to school internet facility.

The findings revealed that 17 (35.4%) of teachers have the use of office software,

31(64.6) do not have access to most applications software, Only 5(10.4%) teachers agreed with the use of scanner machine, 43(89.6%) disagreed that the facility is not accessible in the school premises, 4(8.3%) supported that data projector available for the use in the school that is when there is special program in the school,44(91.7%) disagreed that is not available for use for teaching and learning. 22(45.8%) of the respondents agree to the access of the use of printer and 26(54.2%) do not have access to printer.

From the above result, it was showed that most teachers do not have access to ICT in the school and during the observation it was noted that most teachers depends on their personal laptop whenever need arose.

**Research Question 2:** What are the effects of ICT usage on the teaching delivery of teachers in AGS, Oyo State?

**Table 2:** Descriptive analysis Effects of ICT on Teaching Quality

S/N	Items	Frequency		Percentage	
		Yes	No	Yes	No
1	Do ICT lead to overall improved teaching delivery?	40	8	83.3	16.7
2	Do ICT help get enough information needed for teaching at all times?	36	12	75.0	25.0
3	Do ICT serve as an easy access to global information?	46	2	95.8	4.2
4	Do ICT serve as a resourceful teaching and especially in practical sessions?	40	8	83.3	16.7
5	Do ICT enable you to disseminate up to data information?	41	7	85.4	14.6
6	Do ICT serve as a reference tool in your teaching and research work?	41	7	85.4	14.6
7	Do ICT help meet up with the teaching standard across the globe?	42	6	87.5	12.5
8	Do you see ICT as advancement in the academics world?	44	4	91.7	8.3

Table 2 above showed that ICT has a great effect on teaching quality. 40(83.3%) of the teachers agreed that ICT lead overall improved teaching with 8 (16.7%) of teachers was not agreeing to this. 36(75.0%) of the teachers also agreed that ICT help to get useful information for teaching at all time with 12 (25.0%) indicating disagreed. 46(95.8%) of the teachers made it known that ICT give easy access to global information with only 2(4.2%) of the respondents disagreeing to this. A total of 40(83.3%) agreed that ICT help as resourceful teaching especially in practical sessions, while 8(16.7%) disagreed to this notion. 41 (85.4%) of the respondents indicated that ICT enables them to disseminate up to date information, while 7 (14.6%) indicating otherwise.

Furthermore, 41(85.4%) of the respondents see ICT as a reference tool in teaching and

research work with only 7(14.6%) do not agreed to this. 42(87.5%) of the respondents supported that ICT help meet up with teaching standard across the globe, while 6(12.5%) disagreed to this. Majority i.e. 44(91.7%) of the respondents agreed that ICT helped in advancing academic world with only 4(8.3%) do not agreeing to this.

From the above result, researchers observed that teachers in AGS agreed and supported that the effect of ICT in teaching and learning have great impact on school activities on students academic achievement in the classroom practice in the school.

**Research Question 3:** What are the Challenges facing the usage of ICT in teaching and learning among teachers in AGS, Oyo State?

**Table 3:** Descriptive analysis on challenges facing the usage of ICT

S/N	Items	Frequency		Percentage	
		Yes	No	Yes	No
1	Irregular and erratic power supply	41	7	85.4	14.6
2	Lack of funds to acquire ICT	46	2	95.8	4.2
3	Poor Infrastructure/Internet connectivity	45	3	93.8	6.2
4	Lack of training on ICT use	39	9	81.2	18.8
5	Lack of skilled personnel	40	8	83.3	16.7
6	Lack of maintenance of ICT facilities	42	6	87.5	12.5
7	Resistance of students to ICT use	32	16	66.7	33.3
8	Lack of adequate and relevant information from ICT	36	12	75.0	25.0

Table 3 above presented the different views of teachers on the various problems they have with the use of ICT in teaching. 47 (14.6%) respondents agreed that there is problem of irregular and erratic power supply, while 7 (14.6%) disagreed with this. 46 (95.8%) of the respondents agreed that there is lack of adequate funds to acquire ICT facilities with 2 (4.2%) respondents disagreed. Furthermore, 45 (93.8%) of the respondents agreed that they face problem of poor infrastructure and internet connectivity, while 3 (6.3%) disagreed with this view. Most of the teachers seem to be facing the problem of in-service training in ICT use as majority of the respondents. 39 (81.20%) agreed with the notion, while 9 (18.8%) disagreed.

Other problems and difficulties experienced with the use of ICT in teaching as indicated by the teachers include lack of skilled personnel with 40 (83.3%) agreed while 8 (16.7%) disagreed, lack of maintenance of ICT facilities with 42 (87.5%) of the respondents in affirmative while 6 (12.5%) disagreed.

Resistance of student to ICT use as a problem took the same dimension with 32 (66.7%) respondents agreed, while 16 (33.3%) disagreed. The last problem identified on the table is lack of adequate and relevant information from the use of ICT. 36 (75.0%) of the respondents agreed to lack of adequate and relevant information from the use of ICT while 12 (25.0%) disagreed. Researcher

observed from the findings that most of these problems difficulties associated with the use of ICT in teaching are very peculiar to same teachers in other secondary school in Nigeria.

### Conclusion

From the above findings it is clear that the positive effect of ICT on teaching cannot be overemphasized and it is a necessary and important tool which has been fully integrated with other information tools in the educational system. It is very important that ICT use should be made versatile and accessible for both students and teachers because it is certain that it has a very strong impact on teaching and development of academic curricular. ICT also brings a network of people (teachers and students), their information needs and preferable solution to their information needs. This study investigated the impact of ICT on the teaching quality of teachers in Secondary School in Nigeria. The findings of the study are therefore summarized as follows:

It was found from the study that there is no much access to the use of ICT in the school premises for teachers but most of them have depends on their personal laptop to make use of ICT facilities in teaching and their daily routine. According to the findings, teachers use ICT as a teaching aid, personal essence and email correspondence. They also use ICT to obtain research information and as a supportive tool in curriculum design.

The findings of this study revealed that the teachers consider ICT as a good information tool, which has been fully integrated with other information tools in the educational system.

The study also revealed that the teachers are impressed with the growing use of ICT in their daily routine. The teachers therefore, stated that ICT has positive effects on their work performance. These include overall improved teaching on teachers, ability to get enough information needed for work at all times, facilitate easy access to global information, change in the global curricular demand, and also improvement in communication relation between the teachers and students.

Other effects include advancement in academic world, ability to disseminate up to date information to the students and fellow teachers, serving as reference tool for further teaching and research work.

Meanwhile, there are also some problems and difficulties being faced by the teachers in the use of ICT for their work. The problems ranges from irregular and erratic power supply which slows down the pace of work, to lack of funds to acquire ICT facilities, poor connectivity, and lack of technical support in the use of the ICT tools.

### Recommendations

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

1. Alternative source of power generation like the generating set should be put in place in order to proffer a lasting solution to the issue of erratic and irregular power supply as this will help to save the working time of both the teachers and the students.
2. Adequate funds should be made available to all secondary school in Nigeria to enable teachers acquire more ICT facilities often, which can improve the provision of internet services. Also, periodic maintenance routines be carried out on these facilities at least three times a year.
3. Students and teachers in secondary school should also be enjoined to imbibe the practice of good maintenance culture of the ICT facilities to make them stand the test of time
4. Adequate provision be made for technical support and training on the use of ICT tool to further encourage its use for teachers.
5. There should be stronger and better infrastructural development for the ICT system and there should be proper information on the use of ICT and its Applications.
6. There should be training and retraining of teachers confidence and skills on how they should apply ICT in making their lessons plans and integrating ICT with their lesson note in the classroom.

### References

- Castro Sánchez, J. J. and Alemán, E. C., (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Journal Computers and Education*, 56, 911-915.
- Govender D. W. (2016). Information and Communications Technology (ICT) Integration in Teaching and Learning: A Critical Analysis. University of KwaZulu-Natal (UKZN)
- Jegede, A. E., Elegbeleye, A. O., Olowookere, E. I., & Olorunyomi, B. R. (2016). Gendered alternative to cyber fraud participation: an assessment of technological driven crime in Lagos State, Nigeria. *Gender and behaviour*, 14(3), 7672-7692.
- Kareem, A. A. (2018). Comparative study of the effects of Computer Assisted Instruction on Students' Academic Achievement in Science Subjects in High Schools in Osun State, Nigeria. *International Journal for Innovative Technology Integration in Education*, 1(1), 15-22.
- Kayode, E.A. (2016). "Impact of Computer-Based Information Technology on Job Performance of Secretarial Staff in Nigerian" *International Journal of Academic Research*.

- [www.texilajournal.com/academic-research/article/415-impact-of-computer-based](http://www.texilajournal.com/academic-research/article/415-impact-of-computer-based).  
DOI:2015.22/TIJAR.2014.03.01.Art015.
- Margareth S. M. (2009). Capacity Building of ICT in Education for Rural Areas: a case of Lugoba Secondary School. Tanzania. A thesis submitted to the Department of Micro-electronics & IT, The Royal Institute of Technology, Sweden.
- Nayar, A. (2018). Teaching and Learning in Technology Empowered Classrooms—Issues, Contexts and Practices. Partridge Publishing.
- Noor-UI-Amin, S. (2013). An Effective Use of ICT for Education and Learning by Drawing on Worldwide Knowledge, Research, and Experience: ICT as a Change Agent for Education. ELDIS, Development Studies, Sussex, England
- Nyambane, C., & Nzuki, D. (2014). Factors influencing ICT in teaching: A literature review. *International Journal of Education and Research.*, 2(3).
- Nyambane, C., & Nzuki, D. . (2014). Factors influencing ICT in teaching: A literature review. *International Journal of Education and Research.*, 2(3).
- Psycharis, S., & Kallia, M. (2017). The effects of computer programming on high school students' reasoning skills and mathematical self-efficacy and problem solving. *Instructional Science*, 45(5), 583-602.