

Factors militating against the use of ICT in teaching and learning in public secondary schools in Kebbi State, Nigeria

Sagir Muhammad^{1*}, Wakkala Garba Tumburku², S. H. Muza² and Zainab Lawal Gwandu³

¹Department of Science Education, Kebbi State University of Science and Technology, Aliero, Kebbi State, Nigeria.

²Department of Education, Kebbi State University of Science and Technology, Aliero, Kebbi State, Nigeria.

³Secondary School Management Board, Ministry of Education, Birnin Kebbi, Kebbi State, Nigeria.

Accepted 24 September, 2019

ABSTRACT

Factors militating against the use of ICT in teaching and learning yield a serious problem in the area of education in Nigeria, unlike the use of ICT facilities within the societal context. There are various factors against the use of ICT in Public Secondary Schools today with regards to teaching and learning with particular reference to Public Secondary Schools in Kebbi State. The following research questions are formulated to aid the findings: What are the factors militating against the use of ICT in teaching and learning in Public Secondary Schools in Kebbi State? What is the perception of students on factors militating against the use of ICT in learning in Public Secondary Schools in Kebbi State? A descriptive survey method was employed with the aid of a structured questionnaire in order to obtain information from respondents on existing conditions in regard to the challenges under study. The findings indicated that there are no adequate and qualified teachers, there is a lack of internet facilities, and there is no well-equipped computer laboratory for practical in Public Secondary Schools in Kebbi State. The conclusions show that internet facilities are not available in secondary schools. Government at various levels should, therefore equip teachers with the necessary tools such as computers, computer laboratories, laptops and technical assistance that would enhance their ICT literacy.

Keywords: ICT, teaching, learning, secondary school.

*Corresponding author. E-mail: sagiraliero@gmail.com. Tel: +2348069779705.

INTRODUCTION

Information and Communication Technologies (ICTs) have increasingly become indispensable tools for development over the past few decades. Positive effects of ICTs have continually been noted in business, production, education, politics, governance, culture and other aspects of human life. In higher education, ICTs have great influence in teaching, learning, research, and other scholarly and professional activities through improved communication and access to information. In libraries, ICTs have greatly simplified acquisition, organization, storage, retrieval, provision and usage of information. Internet and CD-ROMs for example, have greatly enhanced access to a range of current information resources. In sum, ICTs have improved provision of library and information services by

overcoming time, distance and other barriers. However, it is widely agreed that ICT adoption in libraries is not a panacea to all library problems as initially presumed. Despite their tremendous potentials, ICTs have also brought new challenges that must be overcome in order to increase effectiveness and efficiency of libraries in developing countries. Information Communication Technology (ICT) is the processing, storage, distribution of data and many others; it is basically made up of the following components namely: electronic processing using computer, transmission of information using telecommunication equipment and dissemination of information in multimedia. These technologies are being utilized to restructure and reorganize the sphere of production, distribution and circulation (Khan et al.,

2008). The application of ICT has transformed the learning and teaching process in which students deal with knowledge in an active, self-directed and constructive way. ICT is not only employed as an instrument, which can be added for existing teaching methods but also seen as an important instrument to support new ways of teaching-learning process. It is being integrated into the teaching-learning process in various educational institutions in Nigeria and the world in general (Buhari and Nwoji 2015). The cut-throat competition facing secondary school teachers in Nigeria today requires each of them to be on the leading edge of the new technology (Ogundele et al., 2008). The recent advancement in ICT components, such as a computer, internet, electronic mail, etc. resulting in the computer network. Students that use ICT gain a deeper understanding of complex topics and concepts; and are more likely to remember information and use it to solve problems outside the class environment (Apple Computer, 2015). In addition, students extend and deepen their knowledge, investigation, and inquiry through ICT according to needs and interest when access to information is available on multiple levels. This made it therefore, imperative to look into the factors militating against used of ICT in teaching and learning in public secondary schools, and also to find out the perception of students on factors militating against the use of ICT in learning in Public Secondary Schools in Kebbi State, Nigeria.

Statement of the problem

Factors militating against the use of ICT facilities in teaching and learning yield a serious problem in the area of education in Nigeria. There is strong desire to integrate ICT into teaching learning processes but there are many barriers hindering it in education settings. Therefore, it is on cause of these factors that gear the researcher to write on the factors militating against the use of ICT in teaching and learning in Public Secondary Schools in Kebbi State, Nigeria.

Research questions

The following research questions are formulated to aid the findings:

1. What are the factors militating against the use of ICT in teaching and learning in Public Secondary Schools in Kebbi State?
2. What is the perception of students on factors militating against the use of ICT in learning in Public Secondary Schools in Kebbi State?

Research Hypotheses

Ho₁: There is significant relationship on the factors

militating against the use of ICT in learning in Public Secondary Schools in Kebbi State.

Ho₂: There is significant relationship on student's perception and factors militating against the use of ICT in learning in Public Secondary Schools in Kebbi State.

Scope and delimitation of the study

The research work is specifically centered on the factors militating against the use of ICT in teaching and learning in Public Secondary Schools in Kebbi State, Nigeria. It covers three (3) selected secondary schools in Aliero local government area, Kebbi State, namely:

- i) Government Girls Comprehensive Secondary School, Aliero Local Government Area, Kebbi State.
- ii) Government Science College, Aliero Local Government Area, Kebbi State.
- iii) Government Day Secondary School Sabiyal, Aliero Local Government Area, Kebbi State.

LITERATURE REVIEW

Learning can be effectively and efficiently provided when it is conducive. A conducive learning and teaching environment acts as a factor to enhance the learning of students/pupils. The school environment in most of our public schools is bad regarding the infrastructures and resources which are not put in place. Some students of urban areas have a good conducive environment for learning while some do not. In some rural areas, the classrooms are dilapidated or unavailable whereby some students do have their lesson under the trees. Looking at the role of education in nation-building and the population explosion in the secondary schools these days, the use of ICT in the teaching-learning process becomes imperative. This is true because its adoption by the teachers will enhance effective teaching. Such issues like good course organisation, effective class management, content creation, self-assessment, self-study collaborative learning, task oriented activities, and effective communication between the actors of teaching learning process and research activities will be enhanced by the use of ICT based technology.

According to Odera et al. (2011), teaching and learning materials required to enable technology innovation to work should be easily available. In order to integrate computers into the school curriculum, there is need for all schools to have adequate supply of computers and other related resources. Without the hardware and software, it is impossible to implement changes that require such support and other teaching and learning materials.

Cross and Adam (2007) posited that, Information and Communication Technology (ICT) involve the gathering and processing of information using modern tools, such as computers, internets, cell phones, cameras, and other

related equipment so that the services (output) generated can reach all that desire them at reasonable cost and appreciable to the overall benefits of mankind.

According to Peters (2010), the economic rationale of ICT in education relates to potential increase of efficiency and effectiveness in educational tasks, which will result in labour saving costs. Pedagogic rationale on the other hand “emphasizes the contribution that ICT can make to the improvement of the quality of education by providing rich, exciting and motivating and new environments for learning.”

Mahuta and Inuwa (2011) attributed that, Information and Communication Technologies have been found to encourage teaching-learning, support innovative teaching, reduce the isolation of teachers and encourage teachers and learners to become active researchers and learners as it strengthen teaching through the provision powerful tools for teachers.

Kurawa (2008) poised that inadequate material resources posed a serious challenge to science teacher because most of the schools are poorly equipped. In such a condition, teaching impedes knowledge and less development of the skills by the students. The use of ICT in teaching and learning situation will not only save teaching time and stimulate students interest but it will also increase retention of knowledge since most students remember what they see, heard and read longer than what they only read.

The act of using ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as “Barriers.” A Barrier is defined as “any condition that makes it difficult to make progress or to achieve an objective” (WordNet, 1997, as cited in Schoepp, 2005).

According to BECTA (2003), grouped the barriers according to whether they relate to individual (teacher-level barriers), such as lack of time, lack of confidence, and resistance to change, or to institution (school-level barriers), such as lack of effective training in solving technical problems and lack of access to resources.

Yelland (2001) argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today’s society. She claimed that organizations that do not incorporate the use of new technologies in schools cannot seriously claim to prepare their students for life in the twenty-first century.

Kante and Gupta (2003) observed that, ICT can also help teachers steer-up to have basic knowledge of a subject area and assist in instructional delivery and reduce teachers work-loads through its use for lecture preparations and work-sheets, writing students reports and individual education plan, collecting and analyzing students attainment information for target setting; recording and analyzing attendance and disciplinary information and maintaining link between the institution and parents to ensure parental involvement in the tertiary institutions of learning activities.

According to Becta (2003), five factors influence the likelihood that good ICT learning opportunities will develop in schools: ICT resourcing, ICT leadership, ICT teaching, school leadership, and general teaching. Becta (2003) also indicated that the success of the integration of new technology into education varies from curriculum to curriculum, place to place, and class to class, depending on the ways in which it is applied. In science education, there are some areas where ICT has been shown to have a positive impact.

RESEARCH METHODOLOGY

This research work involves the use of a descriptive survey with the aid of a structured questionnaire in order to obtain information from respondents on existing conditions in regards to the challenges under study. This design is selected to be use because it deals with the data that is quantitative and qualitative approach to generate information from the respondents. The researcher used quantitative methods such as questionnaires to gather large scale data, in a relatively faster manner and the qualitative approach as way of gathering people’s opinions. The total sample of this study is five hundred and three (503) students drawn from the total population using Slovene formula (1960), Purposive sampling technique was used to select the three public secondary schools; One hundred and eighty-four (184) students were drawn from Government Science College, two hundred and thirty-three (233) student from Government Girls Comprehensive Secondary School, and eighty-five (85) students from University Staff Secondary School in Aliero town, Kebbi State. This is to ensure that each subgroup is proportionally included in the sample. The Instruments used for data collection were questionnaires. These questionnaires are constructed on the basis of research questions on The instrument (questionnaire) was structured on two options ‘Yes and No’ as well as ‘True or False’ formulated to aid the researcher to analyses the data collected. In order to test the validity of the instruments, the researcher availed the questionnaire to two experts to check each item for language, clarity, relevance, and comprehensiveness of the content. After the assessment of the questionnaire, the necessary adjustments were made bearing in mind the objectives of the study. Then a content validity index (CVI) was computed using the following formula:

$$CVI = \frac{\text{No. of questions declared valid}}{\text{Total no. of questions in the questionnaire}}$$

The researcher found out that the CVI was 0.86. This meant that the questionnaire was regarded as valid, since it was above 0.7 as contended by Amin (2005). Simple frequencies, percentages and, tables will be used for the analysis of data.

RESULTS

The data collected was treated in line with items in the questionnaire to address the research question. Total of five hundred and three (503) questionnaires were distributed to the three (3) selected public secondary schools and four hundred and nine (490) have return, while 10 were missed and 3 were invalid. This shows that a total of four hundred and ninety questionnaire (490) would be used to analyze this research data.

Analysis of the research questionnaire

From Table 1, it shows that out of 490 respondents from the three (3) selected secondary schools, 30 respondent (17%) from Government Science School Aliero responded positively that they have internet facilities in their school while 150 respondent (83%) responded no. 60 respondents (27%) from Government Girls Comprehensive Secondary School Aliero responded positively that they have internet facilities in their school while 165 respondent (73%) responded no. 20 respondents (24%) from University Staff Secondary School Aliero responded positively that they have internet facilities in their school while 65 responded (76%) there are no internet facilities in their school. This implies that 380 (232%) total respondents are the majority that responded that they do not have internet facilities in their schools.

From Table 2 it is indicate that out of 490 respondents from the three (3) selected secondary schools, 60 respondents (60%) from Government Science School Aliero responded with yes that teachers use ICT facilities in the class while 120 respondents (67%), responded no. 75 respondents (33%) from Government Girls Comprehensive Secondary School Aliero responded positively that teachers use ICT facilities in their class, while 150 (67%), answered no. 20 respondents (24%) from University Staff Secondary School Aliero responded confidently that teachers use ICT facilities in the class while 65 respondents (76%), replied that teachers do not used ICT facilities in the class. This shows that, the majority of the respondent with total of 335 (210%) of whose responses shows that teachers do not used ICT facilities in the class.

From Table 3, it is indicated that out of 490 respondents from the three (3) selected secondary schools, 25 respondents (14%) from Government Science School Aliero responded with yes that there is functional internet facilities owned by their school for teaching and learning while 155 respondents (86%), responded negatively. 40 respondents (18%) from Government Girls Comprehensive Secondary School Aliero responded positively that there is functional internet facilities owned by their school for teaching and learning while 185 respondents (82%) responded no. 10

respondents (12%) from University Staff Secondary School Aliero responded with yes that there is functional internet facilities owned by their school for teaching and learning while 75 (88%) responded there is no functional internet facilities owned by their school for teaching and learning. This shows that, the majority of the respondents with total of 255 (257%) are of negative respondents whose responded that there is no functional internet facilities owned by their school for teaching and learning.

From Table 4, it is indicated that out of 490 respondents from the three (3) selected secondary schools, 36 respondents (20%) from Government Science School Aliero responded positively while 144 respondents (80%) responded no. 80 respondents (36) from Government Girls Comprehensive Secondary School Aliero responded positively, while 145 respondents (64) responded no. 7 respondents (8%) from University Staff Secondary School Aliero responded positively, while 78 respondents (92) responded no. This implies that, 367 (236) respondent are the majority whose responded that teachers do not engaged them for practical on how to use ICT materials in learning among the selected schools.

DISCUSSION AND CONCLUSION

Factors militating against the use of ICT in teaching and learning in public secondary schools in Kebbi State

On the course of this research, the information presented in Table 1: on the question do you have internet facilities in your school, the finding shows that 110 (68%) respondents from the selected schools responded that they have internet facilities in their school while 380 (232%) respondent no. This show that majority of the respondents within the selected schools said they don't have internet facilities in their school. This contributes to those factors militating against the use of ICT in teaching and learning in secondary schools. Information presented in the table 3: on the question ask does your teachers use ICT facilities in your class, on the finding show 155 (90%) respondents said their teachers use ICT facilities in their class. While 335 (210%) respondent said no. This implied that the majority of student said no within the selected schools, this is additional factor militating against the use of ICT in teaching and learning in secondary schools.

The above findings are supported in the existing literature: As reported by the Kurawa (2008) poised that inadequate material resources posed a serious challenge to science teacher because most of the schools are poorly equipped. In such a condition, teaching impedes knowledge and less development of the skills by the students. The use of ICT in teaching and learning situation will not only save teaching time and stimulate

Table 1. Do you have internet facilities in your school?

S/N	Category	Yes	%	No	%	Total	
						Response	%
1	Government Science School Aliero	30	17	150	83	180	100
2	Government Girls Comprehensive Secondary School Aliero	60	27	165	73	225	100
3	University Staff Secondary School Aliero	20	24	65	76	85	100
	Total	110	68	380	232	490	300

Source: Field survey (2016).

Table 2. Does your teachers use ICT facilities in your class?

S/N	Category	Yes	%	No	%	Total	
						Response	%
1	Government Science School Aliero	60	33	120	67	180	100
2	Government Girls Comprehensive Secondary School Aliero	75	33	150	67	225	100
3	University Staff Secondary School Aliero	20	24	65	76	85	100
	Total	155	90	335	210	490	300

Source: Field survey (2016).

Table 3. Is there functional internet facilities owned by your school for teaching and learning?

S/N	Category	Yes	%	No	%	Total	
						Response	%
1	Government Science School Aliero	25	14	155	86	180	100
2	Government Girls Comprehensive Secondary School Aliero	40	18	185	82	225	100
3	University Staff Secondary School Aliero	10	12	75	88	85	100
	Total	75	43	255	257	490	300

Source: Field survey (2016).

Table 4. Does your teachers conduct practical on how to use of ICT materials in learning?

S/N	Category	Yes	%	No	%	Total	
						Response	%
1	Government Science School Aliero	36	20	144	80	180	100
2	Government Girls Comprehensive Secondary School Aliero	80	36	145	64	225	100
3	University Staff Secondary School Aliero	7	8	78	92	85	100
	Total	123	64	367	236	490	300

Source: Field survey (2016).

students interest but it will also increase retention of knowledge since most students remember what they see, heard and read longer than what they only read.

Perception of Students on Factors Militating against the use of ICT in Learning in Public Secondary Schools in Kebbi State

The findings in Table 3: regarding the question asked 'Is

there functional internet facilities owned by your school for teaching and learning,' on the finding shows that 75 (43%) respondent said there are functional internet facilities owned by their school for teaching and learning while 255 (257%) respondent said no. This implied the majority respondent agreed that there is no functional internet facility owned by their school for teaching and learning. Therefore, the lack of functional internet facilities is also a contributing factor regarding the use of ICT in learning.

The finding in Table 4: regarding the question asked 'Does Your Teachers conduct Practical on how to use ICT materials in learning?' On the finding shows that 123 (64%) respondent agreed while 367 (236%) respondent disagree. This implied that majority of respondent agreed that teachers do not conduct practical on how to use ICT materials in learning.

The findings above are also supported by Cross and Adam (2007) which posited that, Information and Communication Technology (ICT) involves the gathering and processing of information using modern tools, such as computers, internets, cell phones, cameras, and other related equipment so that the services (output) generated can reach all that desire them at reasonable cost and appreciable to the overall benefits of mankind. Therefore, lack of functional internet facilities are also contributing factors regarding the use of ICT in learning

According to Odera et al. (2011), teaching and learning materials required to enable technology innovation to work should be easily available. In order to integrate computers into the school curriculum, there is need for all schools to have adequate supply of computers and other related resources. Without the hardware and software, it is impossible to implement changes that require such support and other teaching and learning materials, and this could result to teachers not able to conduct practical to students. Therefore, lack of experience by the students also is a contributing factor regarding the use of ICT in learning.

The researcher concluded that, the data in Table 1 show that internet facilities are not available in the secondary schools. However in Table 3, it was indeed concluded that there is no functional internet facilities owned by the schools for teaching and learning.

Looking at report by Yelland (2001) who argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today's society. She claimed that organizations that do not incorporate the use of new technologies in schools cannot seriously claim to prepare their students for life in the twenty-first century.

REFERENCES

- Apple Computer (2015)**. The impact of Technology on students' achievement. Available at <http://www.oten.info/conferences/jukes/ResearchSummary.pdf>.
- BECTA (2003)**. Primary schools: ICT and standards. <http://www.becta.org.uk>
- Buhari, B. A. and Nwoji J. O. (2015)**. Investigation on the level of ICT Awareness among Secondary School Teachers in Sokoto State, Nigeria. *International Journal of Scientific Research in Science and Technology*, 1(4): 105-111.
- Cross, M., and Adam, F. (2007)**. ICT policies and strategies in higher education in South Africa: National and institutional pathways. *Higher Education Policy*, 20(1): 73-95.
- Kante, N. I., and Gupta, I. E. (2003)**. The Role of Information and Communication Technology in addressing conflict management issues. *Proceedings of the 1st national Engineering Technology in addressing conflict management issues*. pp 266-269.
- Mahuta, G.M., and Inuwa, M.A. (2011)**. Rebranding the Nigerian society through the provision of education for self-reliance.
- Odera O.S., Adewale, O.S., and Alesse, B.K. (2011)**. Empirical Analysis of the Impact of Information technology on Secondary Education in Ondo State, Nigeria. *Proceedings of the 22nd National conference of Nigeria Computer Society, Vol.19*.pp.85-96.
- Khan, M. I., Puyol, H. G., Kent, N. I., and Gupta, I. E. (2008)**. The Role of Information and Communication Technology in addressing conflict management issues. *Proceedings of the 1st national Engineering Technology in addressing conflict management issues*. pp 266-269.
- Ogundele, O. S., Adewale, O. S., and Alesse, B. K. (2008)**. Empirical Analysis of the Impact of Information technology on Secondary Education in Ondo State, Nigeria. *Proceedings of the 22nd National conference of Nigeria Computer Society, Vol.19*. pp.85-96.
- Peters, V. F. (2010)**. Noteworthy points on measurement and Evaluation. Snap Press Ltd. Enugu.
- Schoepp, K. (2005)**. Barriers to technology integration in a technology-rich environment. *Learning and Technology in Higher Education: Gulf Perspective*, 2(1), 1-24.
- Slovene formular (1960)**. <https://www.statisticshowto.datasciencecentral.com/confidence-level/>
- Yelland, N. (2001)**. Teaching and learning with information and communication Technologies (ICT) for numeracy in the early childhood and primary years of Schooling. Australian: Department of Education, Training and Youth Affairs.

Citation: Muhammad, S., Tumburku, W. G., Muza, S. H., and Gwandu, Z. L. (2019). Factors militating against the use of ICT in teaching and learning in public secondary schools in Kebbi State, Nigeria. *African Educational Research Journal*, 7(4): 168-173.
