

Teachers' Perceived Challenges of Using ICT in Teaching Secondary School Social Science Subjects in Ilorin, Nigeria

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Abstract. Information and Communication Technology (ICT) has contributed immensely to human learning and teaching by simplifying difficult concept and enhancing accessibility to contemporary data and developments in human societies in all fields and forms of knowledge, especially social sciences which study human interaction in time and space. However, developing countries such as Nigeria have been experiencing challenges in other sectors that are ICT driven. Therefore, it is necessary to ascertain the nature of these challenges in the school system where it has become a set of tool used by teachers for enhancing learnability of school curriculum and improving academic achievement. Therefore, this study examined the teachers' perceived challenges of using ICT in teaching secondary school Social Studies Subjects in Ilorin, Nigeria. Specifically, the study identified the teachers' perceived challenges of ICT use in social science subjects in classroom situations and influence of gender and school proprietorship on the challenges. Descriptive survey research design was employed. Population for this study comprised all social science teachers in Ilorin. The sample for this study comprised 300 respondents through a stratified random sampling technique. A questionnaire titled "Challenges of using ICT in Secondary Schools (CICTSS)" was used. Its reliability was obtained using the test-retest method index of 0.78. Three research questions were raised, a research question was answered using mean and standard deviation while two

corresponding hypotheses were tested using t-test statistic. Findings of the study showed that many challenges such as unavailability of computer laboratory, lack of instructional software, the inefficiency of teachers' technical knowledge, irregular power supply and poor maintenance of computer systems are the constraints in use of ICT facilities by social science teachers. The study also revealed that there is no statistically significant difference between male and female ($t=0.29$, $p>0.05$), and private and public social science teachers ($t=0.26$, $p>0.05$) on the challenges associated with the use of ICT facilities in schools. Based on these findings, it was recommended among other that regular workshops, seminars, and in-service training should be organised to improve teachers' efficiency on the usage of ICT.

Keywords: Challenges, Social Science Teachers, Information and Communication Technology, Secondary Schools

Introduction

Education is an indispensable instrument for human capacity-building and capital development. This informed the innovation and innovation diffusion of information and communication Technology (ICT) related teaching strategies and learning styles in the school system at all levels of education for teaching and learning effectiveness. Social science-based school subjects in Basic and

senior secondary school curricula and examinations syllabi actually recommended the use of ICT-related strategies and instructional resources for enhanced teaching-learning effectiveness. However, teachers and students of social science subjects need to access contemporary data on humans in society hosted in Social statistics that are hosted in different websites by using ICT materials. Accessing ICT driven instructional materials are therefore very significant for teaching and learning social science subjects at all levels of education.

Education is the acquisition of appropriate skills and the development of mental, physical, social abilities and competencies as equipment for the individual to live in and contribute to the development of the society (NPE, 2013). Teaching and learning in secondary schools today are faced with a lot of challenges. These include the change in perceptions about learning and application of ICT in the classroom. Many teachers see ICT facilities as tools meant for only subjects that are scientifically and technologically oriented whereas, ICT is an innovative techniques used to enhance and facilitate effective teaching and learning in schools. Teachers are not only to equip the learners with basic knowledge of subjects' content but also with higher cognitive skills, such as problem solving and critical thinking skills that allow for self-development, continuous learning and Information and Communication Technology (ICT) skills. This was emphasised in the curriculum of social science subjects, Nigerian Educational Research and Development Council (NERDC, 2007)

The Social Science is a branch of knowledge that focuses on the study of society, individuals and groups within the society. Social Science subjects study the relationships between and among groups in the society, the way they live as groups and as individuals. As an academic discipline, they are concerned with society and the relationship between individuals within a society. The subjects deal with the study of the social life of people or groups of individuals. They are a broad field of study and learning that has many branches within it. These include subjects like Geography, History, Economics,

Social Studies, Government in secondary schools while Psychology, Political science, Sociology, Anthropology, Archeology, among others in tertiary institutions.

Geography is the study of the earth's physical features and the people, plants and animals that live in different regions of the world. History is the study of the record or account of past events and developments. Economics is the study of the way goods and services are produced and sold; the way money is managed; the commercial activities of a society. Social Studies is the study of human interaction with the environment and how human influences and manages the environment through the application of technology in solving social problems. Psychology is the study of the mind and how it affects behaviour in a particular person or group of people. Political Science is the study of politics and the way political power is shared and exercised in a country. Sociology is the scientific study of human society, the way it is organized, and functions and the way people behave in relation to each other. Anthropology is the study of human societies, customs, and beliefs. Archeology is the study of ancient human society done by looking at tools, bones, buildings, and other things from that time that has been found through excavation of sites and analysis of physical remains (NTI, 2015).

Social science is known for its scientific way of learning and studying the society. Effective teaching and learning of the discipline requires innovative techniques such as Computer Assisted Instruction (CAI). It emphasizes the use of innovative methods of teaching for better understanding of society. Sometimes, it uses figures and analysis, borrowing from Mathematics or Statistics. It adopts a systematic way in carrying out its activities on society, through data collection, field work and the analysis of what it finds out about the set-up in society through application of ICT. Social science curriculum contains teaching and learning materials that are ICT materials. These include: internet, CD-Rom, documentaries, simulation games, drill and practice, tutorials and information retrieval system, documentaries on family life education and simulation materials which are expected of social science

teachers to facilitate and enhance teaching and learning of social science subjects (NERDC, 2007).

Variety of instructional materials has been used in the educational institutions. For example, chalk board, bulletin board, overhead projector and computer. In fact, computer is not one instructional material; it is combination of many instructional materials. For example, a lecture can be presented on power point, or other software, computer can be attached to a big computer screen and can be used as chalkboard. CD-ROM and floppy disks can be used to store huge amount of information, for example a picture, a simulation, a movie, diagram or a lecture can be shown in the classrooms. Internet and emails can be used in the classrooms as part of computer as an instructional material. Then teacher can go online and find relevant topics or a research based article. Computer games are another way a computer can be used as parts of computer based instructional materials (Malik, 2005).

Many teachers have been trained over the years on how to use ICT in the classroom as modern techniques of teaching. Many secondary schools in Kwara State were supplied with computers, notebooks, and software to enable teachers to bring technology into the classrooms. Many new schools also have rooms specially equipped with computers for students to facilitate and enhance teaching and learning while some schools have been offering ICT training. Olaolu, Abdulrahman and Habibatu (2012) discovered that out of one hundred selected secondary schools in Kwara State, in the year 2011, there were 2,109 computers of which 66 (60.5%) were functioning, while 843 (39.5%) were not functioning. Olokooba (2015) also found out that Computer Assisted Instructional materials (CAIM) were not frequently used by teachers for instructional purposes. The use of computers was restricted to occasionally information processing and for storage purposes only in the sampled secondary schools, in related study. Furthermore, Ukpebor and Emwanta (2012) reported that the availability and use of computers and internet access were very poor. Few secondary schools that boast of computer

laboratory are poor in internet access. This is not far from Goldman, Cole, and Syer (1999), who claimed that most secondary schools have computer laboratories and many computers in the classrooms, but since internet services are the latest technology in the use of ICT, it becomes very difficult and remain a serious challenge to overcome in most school environment. Most of the schools who could boast of computers in their schools only had outdated computers from which a few were functioning. It is highly imperative that schools across the city should endeavour to acquire ICT facilities for practical and also internet access so as to empower the student on an educational pursuit.

Mehmet (2010) discovered that supports instructional applications in their classrooms. Use of the Internet and software programs such as Microsoft Power Point, Word, and Excel were the most common type of computer-supported instruction in the classrooms. In addition, computers were used as presentation tools frequently in the classrooms. Multimedia software was used by only one teacher. Findings of the study also showed that all participants had similar views about the computer as they did not differentiate it from any other instructional tools. Nevertheless, all of them agreed that the computer is a powerful research tool that facilitates students work and make the work faster and easier for the students.

Gulbahar and Guven (2008) discovered that teachers who sometimes and frequently use multimedia computer and computer-projector system in the classroom have a higher self-perception of efficacy than their counterpart that never uses them. Moreover, the groups that frequently use educational software and the Internet/Web environment have a higher perception of efficacy than the one who never used them. In other words, teachers who have high perception of efficacy tend to use ICT related tools in the classroom more frequently than the others. The study also examined the relationship between teachers' use of computer related tools in the classroom and level of expertise of teachers. Correlation analysis was conducted to determine if there is any

relationship between teachers' use of computer related tools in the classroom and the expertise level of teachers. A one-way analysis of variance was conducted to evaluate the relationship between the level of expertise and computer related tools usage of Social Studies teachers in the classroom for each of the four tools: Multimedia Computer, Computer-Aided Educational Software, Computer-Projector System and the Internet/Web Environment. The results indicated that the groups that sometimes and frequently use computer related tools in the classroom have a higher level of expertise than the groups that never use them. In other words, teachers who have a high level of expertise tend to use computer related tools in the classroom more frequently than the others.

Similarly, Ukpebor (2010) conducted a study on use of Internet by private secondary school students in Benin City Cosmopolis, Edo State, Nigeria. His findings revealed that the level of internet access in schools is very poor. This is because the majority of the schools do not have access to the internet and while few who does, do not frequently allow students to have access to the technology.

2. Challenges Associated with the Use of ICT Facilities in Secondary Schools

Afolabi (2000) noted that both teachers and students are still novices in the rudiments of how the computer works. The following challenges according to Afolabi (2000); Onasanya, (2009); and Tugbiyele, (2011) are associated with the use of ICT in teaching and learning process.

- a. Insufficient resources applied to ICT in schools
- b. Poor preparation of classroom teachers to integrate ICT effectively or collaboratively
- c. Ineffective attitude of school administrators towards the application of ICT in their schools
- d. The need for students and teachers to develop finger dexterity which is common among typists
- e. Lack of sufficient computer systems to go round the students due to exorbitant costs
- f. The students' class enrolment which soars every year

- g. The erratic nature of power supply in Nigeria
- h. The natural tendency for human to oppose innovation at their first appearance
- i. Laziness on the part of some teachers to learn ICT for instruction in schools

Onasanya and Asuquo (2007) worked on Secondary school teachers' perception of problems and challenges associated with web-based learning in Nigeria. Their findings showed that many of the secondary school teachers are not computer literate and that they are all ready to acquire the needed knowledge and skills if they would be allowed to participate in computer literacy education. Moreover, despite the fact that few of the teachers were computer literate, few of them used internet facilities. It therefore follows that they would want to know more about prospects of internet facilities for teaching and learning. However, the teachers see more disadvantages in web-based learning than they see advantages. Some of them considered the introduction of web-based teaching and learning as a threat to their jobs. They also think web-based learning would have bad influence on the student's social lives. They also considered lack of technical know-how as a challenge to the introduction of web-based teaching and learning in secondary school.

The study also revealed that the majority of participants are aware of the benefits of teaching with technology. They believe that the inclusion of technology into pedagogy can enhance their teaching quality. Zemsky and Massy (2004) assert that it can be a good indication of successful implementation of the technology integration program if teachers know about the benefits of technology for teaching and make frequent use of it in their instructional activities. However, there are still a few other participants who only mention the availability of technology facility as their reason for integrating technology into teaching. Teachers who only have this reason as the basis for teaching with technology will usually gain very little from the program because they may not realize the extensive benefits that technology can provide to enhance their professionalism. They are only motivated by the institution's generous policy which

provides them with the latest model of laptops. Teachers of this type usually know only very basic things about computer technology.

Marwan (2008) conducted a study on Teachers' Perceptions of Teaching with Computer Technology: Reasons for Use and Barriers in Usage. His findings showed that teachers are faced with a number of problems or barriers in their teaching with technology. Most of these barriers are, in fact, directly linked to the institution's willingness to provide supports for teachers in addition to providing them with the technology facility. Several teachers mentioned that they lack the skills in operating computer technology. They can make use of the facility and feel the benefits of using it for their teaching but they also realise that they can even get more benefits if they have better skills in operating it. It is obvious that teachers need to be provided with technical training to help them become competent technology users.

Similarly, Mouza (2003) observed that training in technology is a critical ingredient in effective use of technology in the classrooms and lack of technical support is considered one of the major problems experienced by teachers in their teaching with technology. The technical support staff plays a very important role in ensuring the success of technology integration program implementation. It is every institution's responsibility to make sure that teachers are provided with adequate technical staff that is prepared to assist teachers whenever they experience difficulties with the technical equipment. Teachers should not get frustrated when using technology because, if they do, their teaching will be negatively affected. To reduce the frustration and eliminate challenges facing the teachers in the use of ICT in the classroom, this study examined the challenges associated with the Information and Communication Technology in secondary schools as perceived by social science teachers in Ilorin metropolis.

3. Methodology

The descriptive survey research design was employed in the study. This is necessary to be able to explain the variables in the study based

on information gathered. The research was conducted in the Ilorin metropolis which is the capital of Kwara State. The population was all social science teachers in the metropolis. A sample of three hundred social science teachers was purposively sampled using stratified random sampling technique. A questionnaire titled "Challenges of using Information and Communication Technology in Secondary Schools (CICTSS)" was used for data collection. The questionnaire was classified to two sections. Section A contained items of CICTSS dealt with information about demographic information about the respondents. Section B contained ten structured response items on challenges associated with the use of ICT in Secondary Schools and was on a three point Likert scale of Strongly Associated, Associated and Not Associated. To validate the instrument, copies of the questionnaire was given to experts in Social Science disciplines in the Department of Social Sciences Education, University of Ilorin to ensure construct and content validity. Its reliability was determined using test-retest technique and a reliability index of 0.78 was obtained. One research question and two null hypotheses were raised and tested using mean and standard deviation and t-test statistics at 0.05 level of significance respectively.

4. Research Questions

What are the teachers' perceived challenges of using ICT in teaching-learning in social science-based classroom situation?

5. Research Hypotheses

HO₁: There is no significant difference between the male and female social science teachers' perceived challenges in using ICT for teaching-learning in classroom situations.

HO₂: There is no significant difference between private and public social science teachers' perceived challenges in using ICT for teaching-learning in classroom situations.

6. Results

Research Questions: What are the teachers' perceived challenges of using ICT in teaching-

learning in social science-based classroom situation?

In order to answer research question one, responses of social science teachers on items 1 to 10 of the questionnaire on the challenges

associated with the use of ICT in secondary schools were analysed using mean and standard deviation to determine ranking order of the teachers’ perceived challenges to ICT use for teaching-learning. The result is shown in table 1.

Table 1: Mean and Standard Deviation of teachers’ perceived challenges of using ICT for teaching-learning in Secondary School

S/N	ITEMS	N	Mean	Std. Deviation	Rank
1.	Insufficient time to prepare ICT-based instructional materials	300	2.10	0.67	6 th
2.	adequacy of teachers’ technical know-how on preparing ICT-based instructional materials	300	2.07	0.72	7 th
3.	Unavailability of computer laboratory/computer systems for instructional purposes in the schools	300	2.25	0.71	1 st
4.	Lack of adequate internet facilities in the school	300	2.06	0.74	9 th
5.	Inefficient or adequate internet connectivity in the schools	300	2.15	0.70	4 th
6.	Shortage of computer systems needed by students and teachers in the schools	300	2.23	0.76	3 rd
7.	Teachers’ lack of interest in the use of ICT in classroom situations	300	1.91	0.74	10 th
8.	Poor technical knowledge and operation of computer systems	300	2.07	0.75	7 th
9.	Lack of Computer-based Instructional software and packages in the school	300	2.15	0.70	4 th
10.	Absence of or irregular power in the schools	300	2.25	0.74	1 st

Table 1 showed the results of ranked means on each item of challenges on the use of ICT to determine the level of challenges associated with the use of ICT. Items 3 and 10 which stated that “Unavailability of computer laboratory/computer systems for instructional purposes in the schools” and “Absence of or irregular power in the schools” were ranked first (1st) with mean scores of 2.25 and 2.25, and standard deviation of 0.71 and 0.74 respectively. Item 6 which stated that “Shortage of computer systems needed by students and teachers in the schools” ranked third (3rd) with a mean score of 2.23 and standard deviation of 0.76. These are the major challenges or factors affecting the use of ICT by social science teachers as they are paramount.

However, the least of all the identified challenges associated with the use of ICT by social science teachers in upper basic schools is item 7 which stated that “Teachers’ lack of interest in the use of ICT in classroom situations” ranked tenth (10th) with a mean score of 1.91 and standard deviation of 0.74.

Hypothesis 1: There is no significant difference between the male and female social science teachers’ perceived challenges in using ICT for teaching-learning in classroom situations.

In order to test null hypothesis one, responses of male and female social science teachers on the challenges associated with the use of ICT in secondary schools were analysed using t-test statistic. The result was illustrated in table 2.

Table 2: t-test Analysis of Male and Female Social Science Teachers’ Perceived Challenges of using ICT in Social Sciences Subject-based Classroom Situations

Variables	NO	Mean	SD	df	t-value	Sig. (2-tailed)	Decision
Male	132	36.81	9.70	298	2.51	0.29	NS
Female	168	20.90	1.50				

P ≥ 0.05

Results in Table 2 showed that the calculated t-value 0.12, was obtained with p-value, 0.29 at an alpha level of 0.05. Since the p-value is greater than 0.05 alpha level (0.29>0.05), therefore, null hypothesis 1 is

not rejected. This implies that there is no significant difference between male and female social science teachers on the challenges associated with the use of ICT for teaching-learning in classroom situations. The result of t-test analysis for testing for gender-related differences in teachers’ perceived challenges of using ICT in teaching learning of social science based subjects classroom situations are as shown in table 2.

Hypothesis 2: There is no significant difference between private and public secondary school teachers’ perceived challenges of using ICT in for teaching-learning in classroom situations.

In order to test null hypothesis 2, responses of social science teachers on the challenges associated with use of ICT were analysed using t-test statistic. The results are as shown in Table 3.

Table 3: t-test Analysis of Private and Public Social Science Teachers on the Challenges Associated with the use of ICT in Secondary Schools

Variables	NO	Mean	SD	df	t-value	Sig. (2-tailed)	Decision
Private	60	12.81	4.53	148	1.14	0.26	NS
Public	240	11.93	3.61				

$P \geq 0.05$

Results in Table 3 indicated the calculated t-value is 1.14 was obtained with p-value, 0.26 at an alpha level of 0.05. Since the p-value is greater than 0.05 alpha level ($0.26 > 0.05$), therefore, null hypothesis 2 is stands accepted. This implies that there is no significant difference between private and public social science teachers on the challenges associated with the use of ICT in social science based subjects’ classroom situations. The result of t-test analysis for testing for school proprietorship-related difference in teachers perceived challenges of using ICT in teaching-learning in social science based subjects’ classroom situation are shown in table 3.

Based on the results of data analyses, the following are the major findings. The teachers’ perceived challenges of using ICT in teaching learning social science based subjects are combinations of ten factors, out of which five that are related to availability of computer, power supply, internet connectivity and all of technical competency in ICT based instructional resources/devices are the most inhibitive factors.

7. Discussion of Findings

The results of data analyses showed that a combination of ten factors, five of which were rated as a most inhibitive challenges in using ICT for teaching learning in Social Sciences-

based classroom situations in secondary schools in Ilorin metropolis. Lack of or irregular power supply and unavailability of computer laboratory/computer system are the twin most important challenges teachers perceived as the inhibiting the use ICT in teaching learning social science-based subjects in classroom situations. These two factors were equally rated as part of the most inhibitive factors hindering the use of ICT in teaching-learning by Abifarin and Okunloye (2011), Tugbiyille (2011), Ukpebor (2010) and Onasanya (2009) in different studies conducted in Nigeria.

The findings on electricity and computer system availability as associated factors inhabiting the use ICT in teaching-learning in classroom situation are practical demonstration of the challenge of power supply or irregular power supply in all sectors of the Nigeria society. Indeed, there are schools in villages in Kwara State that neither connected to the national grid of electricity supply nor have access to alternative power supply. Therefore, power supply is as decisive as availability of computer system in using ICT for teaching-learning within and outside the school system. The challenge of internet connectivity is second rated among the five most important teachers’ perceived challenges of using ICT for teaching-learning. This is also consistent with the findings of Okunloye and Abifarin (2011), Ukpebor (2010)

on impediment to ICT use by teachers in classroom situations. This factor reinforces the importance of power supply and computer system availability as instructional resources in the school system. It is common experience that internet connectivity is very poor in all networks in Nigeria. Indeed, as Abifarin and Okunloye (2011) observed that most tertiary institutions in Nigeria operating Computer Based Tests (CBT) hardly use specially installed internet connectivity devices within their campus outside the general network in their locations to solve this problem. In spite of this, CBT sessions still encountered fluctuations in internet connectivity. Another very important perceived set of challenges to ICT usage in the secondary schools have to do with whether teachers know how to operate and prepare ICT-based instructional materials. This findings is in line with the findings of Marwan (2008), Onasanya and Asugou (2007) that similarly identified teachers' technical competences in operating ICT devices and ICT related instructional materials as key to the observable level of use of computer-Assisted Instruction Materials (CAIM) in the school system.

The study also revealed that gender and school proprietorship do not have significant influence on social science subject teachers' perceived challenges of using ICT for teaching-learning in classroom situation. The non-significant gender influence on teachers' perceived challenges of using ICT for instructional purposes is at variance with Umar (2010) and Adeleye (2008) findings of significant gender differences in the use of ICT-related instructional materials in teaching Islamic studies and Social Studies respectively in secondary schools. This observed variation may be attributed to the difference between perception and utilization of ICT. Although, teachers' perceptions of any school-based instruction materials or subjects are expected to determine teachers' action with regards to utilization of the materials or subject as observed by Okunloye (2001), there may still exist a difference between reality (utilization) and perception when the perceiver of challenges of use (teachers) in this context have different perceptual frame on account of formative experiences in teaching and teacher

characteristics such as qualification, experience, and other idiosyncrasies of teachers sampled. The non-significant influence of school proprietorship on teachers' perceived challenges of use of ICT is however in line with the findings of Ukpebor and Emwanta (2012) and Ukpebor (2010) who also related trend of poor utilization of ICT in both public and private secondary schools.

8. Conclusion

Teachers' perceived challenges of using ICT for teaching-learning social science based secondary school subjects are eclectic in nature but devoid of gender and school proprietorship influence.

Table one showed that unavailability of computer and absence of, or irregular power supply were the two most important challenges perceived by social science subject teachers in using ICT for teaching-learning in secondary schools. These are followed by shortage of computer systems as second rated factor. Lack of computer-based instructional software and packages and inefficient media for effective ICT use or internet connectivity are the twin third rated factors. In all, five of the ten teachers' perceived challenges were rated to be the most inhibitive challenges to the use of ICT by social science-based subjects in the sampled secondary schools.

9. Recommendations

Based on the findings, the following recommendations are made with a view of addressing the challenges facing the use of ICT for teaching-learning effectiveness in secondary schools in Kwara State and other states in Nigeria with similar teacher characteristics and school subject curriculum:

Firstly, secondary school should be supplied with alternative power sources outside the national grid to power ICT facilities and equipment and packages in the schools.

Secondly, all social science based secondary schools teachers should be given personal

computers and projectors for ICT use during social science subject lessons.

Thirdly, computer-based instructional software and packages in social science subjects should be supplied to the secondary school for teachers' use in classroom situations.

Fourthly, technical support staff should be provided for secondary schools to prepare ICT-related instructional material and operate ICT-based electronic devices to assist social science subject teachers in classroom situations.

Finally, awareness seminars for promoting teachers' and learners' interest in the use of ICT for teaching and learning should be mounted to make them more ICT friendly. It is hoped that these measures will go a long way in correcting, and addressing the teachers' perceived challenges of using ICT in teaching social science subjects in the secondary schools.

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