

## EFFECTS OF GENDER ON PRE-SERVICE SOCIAL STUDIES TEACHERS' ICT LEARNING OUTCOMES IN SOUTH WESTERN NIGERIA

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### Abstract

*Information and communication technology (ICT) is now embedded in the pre service curricula. It however appears that not much attention has been given to the teaching and learning process. A few studies have reported findings on knowledge, attitude and skills of students in ICT at higher education but little have been known about the gender difference. This study, therefore, investigated the effects of gender on pre-service social studies teachers' ICT learning outcomes in South Western, Nigeria. Simple random sampling and purposive sampling were adopted for sample selection. One hundred and eighty-six (186) National Certificate of Education (NCE) part two students were selected for the study. Three null hypotheses were tested in the study. The instruments used for the study are information communication technology knowledge test (ICTKT), information communication technology attitude scale (ICTAC) and information communication technology skills and laboratory (ICTSLT). The results of the study showed that male pre-service social studies teachers had better knowledge, attitude and skills of ICT issues than their female counterparts. It is recommended that particular attention should be given to female social studies pre service teachers in ICT.*

### Introduction

Information communication technology (ICT) is an umbrella term that includes all technologies that are being manipulated and are used for dissemination of information. The term is sometimes referred to as Information Technology (IT), and information and communication technologies (ICTs). The American National Council of Educational Technology cited in Akinwande (2011) defines ICT as the handling and processing of information using electronic devices. It is the creation, collection, storage, processing, transmission, display and use of

information by the people and machine. Ezekoka (2008) describes ICT as a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. Rahman (2005) defines ICT as the technology of creating, processing, storage, retrieval and transmission of data and information including telecommunication, satellite technology, electrical and electronic (hardware) and electronic computing {software}, the internet and Global System of Mobile Communication (GSM). ICT is a system that processes, stores and or transfers information. Information can take different forms such as text, numbers, picture, bound video, and the multimedia.

Salami (2011) considers teacher education as a process of professional socialization to acquire the requisite knowledge and also the sense of occupational norms typical of a fully qualified practitioner. He equally said that it includes all forms of education at pre-service training. Nwodumah (2003) sees teacher education as the development of teacher for the achievement of educational goals. Oyekan (2011) sees teacher education as the provision of professional education and specialized training within a specialized period for the preparation of individuals who intend to develop and nurture the young ones into responsible and productive citizens. Federal republic of Nigeria (2004) state that teacher education is to be given continuously major emphasis in all educational planning and development since no education system may rise above the quality of its teachers. Based on that, the goals of teacher education include:

- i. to produce highly maturated conscientious and efficient classroom teachers for all levels of our educational system.
- ii. to encourage further the spirit of enquiry and creativity in teachers.
- iii. to help teachers to fit into social life of the community and the society at large and enhance their commitment to national goals
- iv. to provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations.
- v. to enhance teachers' commitment to teaching profession.

The Nigerian teacher education is meant to equip teachers with appropriate skills and attitude to carry out their duties to the maximum level. Teacher education is generally classified into pre service and in-service. Pre-service teachers are teachers who are still in the four walls of classrooms and just going through training and initiation in to the profession of teaching, they are freshmen under tutelage. While the in-service training consists of retraining programmes which exposes stale teachers in to new ways of teaching and learning. They are organized in order to sharpen once again and refresh their skills.

Globalization and the development of modern technologies in developed nations of the world have brought about unprecedented transformation in ICT in Nigeria. Within the last one decade, Nigeria has imbibed modern technological devices available in some other parts of the world. The discovery of GSM in Nigeria, above a decade ago, has revolutionized communication and other areas of ICT devices in the country. Presently, the use of ICT and modern technologies is visible in the health, finance, education and other sectors of the society (Nwokeocha and Ezeahurukwe, 2012). It is therefore very glaring that the society today revolves around technology. Almost everything that is done in this 21<sup>st</sup> century is internet based or related (Adedjoja and Oyekola, 2012).

In Nigeria, information technology is a recent phenomenon and not much has actually been done as far teacher education is concerned. The old inventions are giving way for the new ones. Outside the classrooms a lot of these technologies are found and being used in a small scale. Millions of computers in their various forms and shapes are being imported to Nigeria nearly every day. However, a few significant numbers are found in our classrooms. It has been reported that power to generate our technologies is very rare, and other challenges as found on the field in the course of this study are inadequate supply or total unavailability of modern equipment and facilities, untrained personnel and a host of other challenges which face the teaching and learning in our higher institutions. These findings are not in any way new as others have reported similar findings in the current past ( Abdulsalam, Akinola, and Buwanhot, 2008; Ololube, Eke, Uzorka, Ekpenyong and Nte, 2009). Aladejana and Sowunmi (2012) in their own case carried out a study entitled "Teaching and Learning with ICT: Perception of Students and Lecturers in Colleges of Education". They found out that ICT tools and

equipment are grossly lacking in schools. Even when they are available, they need to function with other infrastructure such as electricity which is unreliable in Nigeria.

ICT is now embedded in the curriculum of our pre service teachers. Nearly all teachers have been trained in one form or the other. However, theory without skill acquisition still dominates our classrooms. Pre service teachers are taught without any hands on experience. They therefore seem to have adequate theoretical knowledge of and positive attitude to ICT but lack a great deal of skills of how to deploy them in practical terms in the classroom since there are no laboratories, and other potential problems as observed earlier which hinder hands experiences. Teachers and students outside the classrooms are armed with modern technologies. A majority of them have sophisticated phones which can easily browse and connect to internet. These are used outside the classrooms for other purposes. Amosun and Odebode (2007) in their study entitled the use of internet facilities among senior secondary school students in Oyo and Ogun states, Nigeria. The study inquired from the respondents what they surf and browse internet for? It was discovered to the dismay of the researchers that a majority of the students do not surf or browse internet for the purpose of their studies, but for on line shopping, games and films, football matches and results and pornography. This trend is still rampant among students today. Facebook, twitter, what Sapp, endless calls and chats take students time and render the academic purpose of the technologies useless. Teachers in Nigeria and pre service teachers in particular appear not to have been trained on mobile learning. Teachers in Nigeria are either incapacitated by the challenges of technology in Nigeria, or they are completely ignorant of different sites on the web which they can refer students to in the course of teaching and learning. Most of the time too, it seems a majority of the teachers are yet to catch the vision of deploying a variety of technologies into their classes, they appear to believe that that should be the work of technology teachers.

Teacher education is the key to educational development in Nigeria. The teachers hold the key to national transformation and development. This implies that whatever the quality of education in Nigeria today, is a manifestation of the quality of its teachers. This is so because according to the Federal Republic of Nigeria (2004) no

education system can rise above the quality of its teachers. Nigeria has made several attempts to improve the quality of education to meet international standard. This goal cannot be achieved without adequate preparation of pre-service teachers especially in information and communication technology to meet the challenges of our contemporary time and conform to best practice.

The age we are is a computer age, if teachers would discharge their duties effectively, there is the need to be versatile in the knowledge of ICT. Presently, most pre-service and in-service teachers are not well equipped with ICT knowledge and skills. Therefore, there is the need to develop in the Nigerian teachers the ICT knowledge, attitudes and skills needed for effective teaching in the present day Nigeria. Today's students are a global knowledge based age and they deserve a teacher whose training and practice empowers them with the requisite ICT knowledge and skills. Unfortunately, a cursory look at the educational sector in Nigeria shows that the application of ICT in Nigerian institutions particularly in teacher education programme is still a dream as no significant gain or impact in ICT has been recorded. This is evidenced in the absence of computers, projectors, interactive white boards and other e-learning facilities in the classroom (Nwokeocha and Ezeahurukwe, 2012). Ede (2012) in his study of integration of ICT in Mathematics teaching and learning in Africa for global competitiveness, submitted that in developed nations, thousands of teachers begin their working day by working on their computers; sending mails and visiting websites, updating their classroom materials and lecture notes. This he said is very rare in Africa, or developing nations where traditional teacher centred methods still prevail.

Technology is for all and sundry. It has no restrictions. It is being used by the rich and poor, educated and illiterate, men and women, old and young, in the urban as well as rural. However, the level of its appreciation, usefulness and deployment appears to be different. Especially, the issue of gender difference in the use and deployment of technologies is inconclusive in the literature. In almost all spheres of the academic subjects in recent past, except may be Home Economics or cooking, a whopping majority of studies have shown that boys are always doing better than their female counterpart, especially when it comes to subject that are technical, mathematical and difficult. In some parts of Nigeria, girls are even excluded from schooling. Technology

may therefore not unlikely pose a little problem to girls in this new age. Amosun and Odebode (2007) revealed in their findings that boys were more active in surfing and browsing for information on internet than their counterparts. Luan, W. S., Aziz, S. A., Yunus, A.S.M., Sidek, Z., Abu Bakar, K., Meseran, H & Atan, H (2005) observed in their study titled gender differences in ICT competencies among academicians at Universiti Putra Malaysia. They investigated, in their own words, if differences exist between females and males in terms of eight components (word processing, spreadsheets, databases, presentations, electronic mail, World Wide Web, multimedia and virtual class applications) related to ICT. 109 academic staff were involved in the study. The findings revealed that there exists a gap between female and male academicians; and that in all the components examined female staff members demonstrated better performance than their male counterparts. Gender difference is inconclusive and it is still an area of interest in research. There is the need therefore to find if there is any gender difference in the knowledge, attitude and skills they possess as far as ICT is concerned. This study, therefore, investigated effects of gender on pre-service social studies teachers' ICT learning outcomes in South Western, Nigeria.

### **Methodology**

This study is a descriptive research. The survey design was used to investigate the ICT's knowledge, attitude and skills of pre-service social studies teachers in Colleges of Education in Ekiti and Osun States. The population for this study was made up of NCE students in Colleges of Education in Ekiti and Osun States, Nigeria. The sample for this study is made up of one hundred and eighty six (186) part Two (II) NCE students in Ekiti and Osun States' Colleges of Education. The sampling technique used was a mixture of simple random sampling and purposive sampling. Two Colleges of Education in Ekiti and Osun States were purposively selected for this study after they had met the required criteria. They are: Ekiti State College of Education, Ikere Ekiti, and Osun State College of Education, Ilesha. Ninety three (93) NCE part two students from Ekiti State College of Education. Ninety three (93) part two (II) students were equally randomly selected at the Osun State College of Education, Ilesha. In all, one hundred and eighty six (186) NCE were used for this study.

**Instrumentation**

Three self-designed instruments were used for this study. The first instrument is titled Information Communication Technology knowledge Test (ICTKT). This instrument was designed by the researcher to measure the level of awareness/knowledge of pre-service social studies teachers on ICT concepts. The instrument is made up of two sections. Section A requires the respondents to supply some personal information. Section B is made up of twenty five (25) items. The items were raised to measure the knowledge of pre-service social studies teachers on some ICT concepts. The second instrument is titled Information Communication Technology Attitude Scale (ICTAC). This instrument was designed to measure the attitude of pre-service social studies teachers to ICT. The instrument is made up of two sections. Section A requires the respondents to supply some personal information. Section B is made up of twenty (20) items. The items were raised to measure the attitude of pre-service social studies teachers to ICT. The third instrument is titled Information Communication Technology Skill and Laboratory Test (ICTSLT). This instrument was designed to measure the ICT skill acquisition of pre-service social studies teachers. The instrument is made up of three sections. Section A requires the respondents to supply some personal information. Section B is made up of twenty (20) skill response items. Section C is made up of three (3) ICT laboratory test items. The items were developed to enable the students perform some ICT laboratory tasks. The face and content validity with the reliability of the ICTKT, ICTAC and ICTSLT were done and they were found to be very reliable.

**Research Procedure**

A research assistant was trained and used for the study. Also, social studies lecturers from each institution were involved in the study. The instruments, ICTKT, ICTAC and ICTSLT were administered on the respondents by the researcher with the help of the research assistant and the lecturers in the Department. The instruments were collected back immediately after the respondents had finished attempting them. (The ICTSLT was used instead of the laboratory practical test and this more or less an alternative to practical). The students were scored based on their performance in the computer tasks given to them.

### Hypotheses

- HO<sub>1</sub>** There is no significant difference in the ICT knowledge of male and female pre-service social studies teachers in Ekiti and Osun States
- HO<sub>2</sub>**. There is no significant difference in the ICT attitude of male and female pre-service social studies teachers in Ekiti and Osun States.
- HO<sub>3</sub>**. There is no significant difference in the ICT laboratory skill of male and female pre-service social studies teachers in Ekiti and Osun States
- HO<sub>4</sub>**: There is no significant difference in the ICT laboratory skills of male and female pre-service social studies teachers in Ekiti and Osun states.

### Results

The analysis of data was done using descriptive and inferential statistics of mean, standard deviation and T-test to test the null hypotheses generated for the study.

- HO<sub>1</sub>**: There is no significant difference in the ICT knowledge of male and female pre-service social studies teachers in Ekiti and Osun States

**Table 1: T-test Analysis of ICT knowledge of Male and Female Pre-service Social Studies Teachers**

ICT knowledge	N	$\bar{X}$	Standard Deviation	Standard Error Mean	T-CAL	T-Table	DF
Female	101	6.55	2.49450	.29604	22.1	1.96	184
Male	85	7.86	2.69017	.31926			

Significant at  $P < .05$

Table 1 reveals that there was a significant difference in the ICT knowledge of male pre-service social studies teachers in South West, Nigeria ( $t=22.1, df=184, p<.05$ ). The ICT mean knowledge score of male



pre-service social studies teachers was 7.86 while the ICT mean knowledge score of female pre-service social studies teachers was 6.55. Hence, male pre-service social studies teachers had better knowledge of ICT concepts than their female counterparts. The difference was significant. The hypothesis is therefore rejected.

**H<sub>02</sub>:** There is no significant difference in the ICT attitude of male and female pre-service social studies teachers in Ekiti and Osun states.

**Table 2: T-test Analysis of ICT Attitude of Male and Female Pre-service social Studies Teachers**

ICT Attitude	N	$\bar{X}$	Standard Deviation	Standard Error Mean	T-Call	T-Table	DF
Female	101	31.21	7.14926	.84846	36.7	1.96	184
Male	85	32.85	7.60385	.90241			

Significant at  $P < .05$

Table 2 shows that male pre-service social studies teachers had higher mean ICT attitude score of 32.85 while the female counterpart had 31.21. It then shows that there is significant difference between the male and female teachers ( $t=36.7$ ,  $df=184$ ,  $p<.05$ ). The hypothesis is then rejected.

**H<sub>03</sub>:** There is no significant difference in the ICT rated skills of male and female pre-service social studies teachers in Ekiti and Osun states.

**Table 3: T-test Analysis of ICT Rated Skills of Male and Female Pre-service Social Studies Teachers.**

ICT Resp. Skill	N	$\bar{X}$	Standard Deviation	Standard Error Mean	T-Call	T-Table	DF
Female	101	21.59	7.92569	.94061	22.9	1.96	184
Male	85	24.51	8.75194	1.03866			

Significant at  $P < .05$

Table 3 shows that there is a significant difference in the ICT response skills of pre-service social studies teachers ( $t=22.9$ ,  $df=184$ ,  $p<.05$ ). The ICT mean rated skill score of female pre-service social studies teachers was 21.59, while the ICT mean rated skill score of male pre-service social studies teachers was 24.51. Hence, male pre-service social studies teachers had better ICT rated skills than their female counterparts. The hypothesis is therefore rejected.

### **Discussion of Findings**

This study investigated the effects of gender on the ICT knowledge and attitude of pre-service social studies teachers. The findings of the study on Tables 1, 2 and 3 showed that there were significant differences in the ICT knowledge, attitude and skills of male and female pre-service social studies teachers. Male pre-service social studies teachers performed better than their female counterparts in ICT knowledge, attitude and skills. Table 1 revealed that male pre-service social studies teachers had higher ICT knowledge mean score of 7.86 than their female counterparts who had ICT knowledge mean score of 6.55. Again, table 2 showed that male and female pre-service social studies teachers had ICT attitude mean scores of 32.85 and 31.21 respectively. The result of this finding is supported by Stevenson- Agren (2011) who made the discoveries that more male children play games on computer than female and that boys believe that they are better than girls at ICT. He also discovered that only 30% of girls think that teaching of ICT in schools is good, he then concluded that though some girls are good in ICT, boys are better in ICT than girls. Amosun and Odebode (2007) have earlier made similar observation where they discovered that male students were more active in surfing and browsing internet only for on line shopping, games and films, football matches and results and pornography. These findings so far may be due to gender stereotype and the naturally low interest of female in technologically related tasks. However this result also implies that female pre-service social studies teachers can have better ICT knowledge and attitude if they are exposed to ICT concepts and facilities during their teacher training programme. However, Luan, W. S., Aziz, S. A., Yunus, A.S.M., Sidek, Z., Abu Bakar, K., Meseran, H & Atan, H (2005) were of the contrary opinion as they discovered that there exists a gap between female and

male academicians as female staff performed better nearly in all the items they investigated in technology. The present study was conducted among pre service teachers of Colleges of education in the South West, Nigeria. These are people who are still on training, and also have little or no access to computers and internet. Unlike the Luan, et al study which was conducted among university academic staff who have access to both computer and internet, and they are constantly working on their computer every day. The females in this setting are in good position to compete with their male counterpart and even surpass them as men are always busy, and are always in one meeting or the other. But in the case of pre service teachers where computers and internets are not easily accessible, the male counterparts are at advantage because they easily move around in search of cyber café, friends' house, public library, and can afford to stay back late or even sleep over there. These opportunities seem not available for female pre service teachers as they have to stay back at home with their parents to perform house chores or and at another time, the fear of going to places where they will not feel secured. All these and others might be responsible for the findings in this study.

#### **Conclusion and Recommendations**

The results of this study revealed that gender has effect on ICT knowledge, attitude and skills of pre-service social studies teachers. In other words, there exists gender difference in ICT. In this study male pre-service teachers performed better than in ICT knowledge, attitude and skills than their female counterparts. It is therefore recommended that female pre service teachers should be given special attention in the course of training programme, such as giving them tutorials, peer tutoring, making them to cooperate and collaborate with others in learning arena. Special workshops and seminars, incentives such as special awards should be organized, and female pre service teachers should be given first and free access to computers in the faculty or departmental technology laboratory and central library, as all these places are well equipped with modern technology gadgets for the priority of teaching and learning.

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