



INFORMATION AND COMMUNICATION TECHNOLOGY COMPETENCIES AMONG TEACHERS IN SENIOR SECONDARY SCHOOLS IN PORT HARCOURT METROPOLIS

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Abstract: This purpose of the study was to investigate the Information and Communication Technology competencies among teachers in public and private senior secondary schools in Port Harcourt Metropolis. The study adopted a descriptive research design survey, The study was guided by four research questions and four hypotheses. The population for the study was 6,117 teachers in both public and private senior secondary schools in Port Harcourt Metropolis. The sample comprised of 697 teachers (332 teachers from public secondary schools and 365 teachers in private senior secondary schools) were drawn using the Taro Yamene's formula. A self-structured questionnaire was used as the instrument for data collection. The questionnaire was subjected to both face and content validity by two experts in Educational Technology and Statistics. Reliability of the instrument was established using test-retest method in which the result yielded a reliability index of 0.83. Data collected were analyzed using mean and standard deviation, while the hypotheses were tested using z-test statistics at 0.05 level of significance. The finding showed that public senior secondary school teachers' competency in Word Processing, internet Surfing, computer Interface design and Power Point Presentation were adequate. In addition, it was found that the competency level of private schools was higher than those of the public schools. Based on the results, it was recommended that public senior secondary school teachers should be provided with the opportunity to improve and update their competencies in ICT practices. To achieve this hands-on workshops should be provided for the teachers.

Keywords: Information And Communication Technology, Competencies, Teachers, Senior Secondary Schools

Introduction

In all walks of life, Information and Communication Technology (ICT) has become an outstanding tool that has affected human development globally. Technological improvement in information has created reasonable change, touching all areas of human endeavours, including education

In specific tern, the methods of instructional delivery in the education industry has also been changed as a result of integrating ICT into teaching and learning process. However, teachers effectiveness have new challenges facing them to succeed in their task of teaching. This has raised the question of! what is actually the ICT?

The ICT is the kind of technology or technologies that make available access to various information through telecommunication. This, includes the Internet, wireless

networks, cell phones and other communication media. It is an innovative way to provide lifelong learning with global access to information, learning and support. The new technologies have also either enhanced/replaced the older technologies such as typewriters, landlines etc. Therefore, the societies can no longer ignore the new ICT resources especially in education.

Today the most popular and relevant mode of education delivery worldwide cannot be effective without ICT. Information and Communication Technology has succeeded in providing different learning styles and theories that is generally recognized in many countries and institutions. These learning styles and theories have become a vital and valid learning process for educationist and education industry in the 21st century.

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The integration of ICT in secondary school curriculum is important, because it allows teachers and their learners to learn in their own time, approach and pace. Moreover, while it allows teachers to be self-directed, it also provides them with the ability to connect online to download course materials in advance, that are important for their instructional delivery. The content of education is directly linked to the most recent information technologies, which creates a new teachers 'training needs'.

Globally, ICT is radically transforming the ways we live, as Information and Communication Technology is pervasive in workplaces, studying centres and personal lives. Today, leaders are growing up in a world characterized by technological change and Innovation. Modern societies are increasingly based on information, skills and knowledge.(Plessiss & Webb, 2012) In this global world, educators have however realized that it is important that learners are equipped with the necessary skills and experiences that will help them to become relevant. Generally, it is presumed that ICTs can enfranchise teachers and learners, encourage change and advance the development of the 21st century skills. Alternately, ICT is also believed to be able to subscribe to the improvement of learning in the world since these devices can actually reform the education system, increase the provision of materials for pedagogical learning, improve the management of education and massifier pedagogical techniques (Kuyoro, Awodele & Okolie, 2012.). However, the experience of using different ICTs innovative methods in the school and every other educational setting in the world, over the past years indicates a full understanding of the possible educational advantage of ICTs. Information Communication and Technology has the ability to increase and improve the motivation of learner's commitment and helps to develop long standing learning skills. Information Communication and Technology is also a strong educational tool, it can facilitate changes in school education. But for this to be realistic the mindset and way of teaching and learning among teachers, administrators, parents and students must change.

Curriculum experts must also see to school curriculum delivery and how students are currently evaluated.

Information and Communication Technology competencies are however, a set of technology standards that define proficiency in using computer technology in the classroom. From this definition we can see that ICT competency is principal to build the communication in the teaching and learning process. School teachers should therefore be equipped with the necessary Information and Communication Technology (ICT) knowledge and skills in order to have a problem solving approach so as to create knowledge in learners. Information and Communication Technology teacher's competence is a contemporary keynote and needs essential competences which are compulsory for teachers in secondary schools in order to keep alongside with new technologies (Bukaluga & Mubika, 2011).

It is commonly said that the quality and extent of learner attainment are determined fundamentally by the teachers' competence, activeness and impulse. Therefore, teachers need to be aware that the evolutions in education are concern to the philosophy of ICT that leads to better learning. One major edge of using ICT in teaching and learning is to influence students to study. Teacher's role as human resources, is to provide students with effortless access to new technologies in the classroom (Pelgarum & Law, 2003). Qualified teachers who can use this technology are therefore the key to effective tools for advancing students learning. The teachers are the main actors to enter and successfully integrate computers into the educational system to-be. The use of information and communication technology in teaching and learning is to broaden and deepen students' literacy in computer. It is an important mission shouldered and burden on education and must therefore be achieved to sustain the development of the country.

The National policy on Education (Federal Republic of Nigeria, 2004) in Nigeria reiterates that no education system can rise above the standards of teachers. Hence teachers are vital within the teaching and learning process. Also trained and effective teachers are the principal assets of any educational system, Adako (2006)



stated that if Nigeria must catch up with other developed countries at a very reasonable pace, the nation builders (teachers) must be abreast of all new development around the world more so that the world is now seen as a global village. Considering the positive effect of ICTs in the modern world as conceived by Obodo (2004), it means that education reforms practices should focus on equal access and standard of education which should focus on changing the education sector through the use of ICTs and enabling new generation teachers with competent skills to operate in this 21st century.

The Sustainable Development Goals (SDGs), Education For All (EFA), World Summit on Information Society (WSIS) by 2030 and beyond, UNESCO-HSS (2006) posit that adequate teacher training in ICT both in-service teacher and teachers trainees must not be taken for granted alongside with investment of ICT in both secondary schools and teachers training institutions across the Nation especially in the developing countries. Hence, in the teachers pre -service training, ICT tools, knowledge and skill for effective teaching and learning at all levels of education system is very paramount.

In addition, the Federal Ministry of Education launched an ICT handled project known as SchoolNet that was intended to furnish all schools in Nigeria with computers and communication techniques. Under the SchoolNet programme, MTN provided full working and running learning Resource Centers with 21 personal computers, VSAT interconnectivity hand- on training in 24 secondary schools in Kaduna, Enugu, Lagos, Rivers, Kwara and FCT Abuja. In all 49,524 pupils and 2,412 teachers were trained on operating ICT gadgets (Abdul, 2012).

Regrettably, despite all these policies, research works have shown that most public and private secondary schools have either insufficient or no ICT tools and ICT competent teachers especially in the rural areas to cater for the ever increasing population of students and knowledge explosions in the schools and where there are available tools, they are by implication a matter of out of-bounds to the students (Chattel, 2002; Cheng, 2001 & Chiemeké, 2004). As for schools with ICT competent

teachers, they only function in the administrative aspect of the school. In most cases computer found in this public and private secondary schools are only decoration as teachers are unable to use them to teach and bring out instructional materials from them. Unfortunately, public secondary schools are worst, there is no computers, how much more computers connected to the internet. In addition those who have computers do not use them for teaching but solely for administrative purposes. A study by Okwudishu (2005), found out that the lack of some ICT components / gadgets in public and private schools limits teachers' use of ICT in teaching. However the lack of adequate search skills and capability of assessing ICT components is seen to be constraints limiting the use of internet by secondary school teachers (Adomi & Kpangban, 2010).

A survey carried out by Yusuf (2005) revealed that only one school, out of ten has computer sets. It is worth noting that none of the ten schools has internet facility. Ozoji (2003) reported in a study that most secondary schools do not have software for the computer to function. One of the unity schools has five computers against a population of 900 and no internet software was installed. The facilities are grossly inadequate for any meaningful teaching or learning to take place. On teachers' competence, many teachers in Nigerian secondary schools are not competent in basic computer operation and in the use of generic software (Yusuf, 2005). This finding revealed the low level of ICT availability and utilization in Nigerian school system. It was on this basis of improving teacher's ICT competency that this study is made in order to proffer further solution.

Statement of the Problem

The problem that this study intends to address is the inability for teachers in public senior secondary schools to be competent in the use of innovative electronic tools in teaching as compared to the teachers in private senior secondary schools. It is a known fact that public secondary school students have consistently performed poor in fitting into the technological world after secondary school. The teachers have been accused of not



acquiring the literacy and skills enough in passing some relevant ICT knowledge to the students. Most teachers in public senior secondary schools are not even ready to update and get the relevant knowledge on the use of some of these innovative / ICT gadgets. How then can secondary school leavers from public schools be able to fit into the technological trends after their secondary school days?

Again, it was commonly agreed that ICT has positive impact on education and that the impact relies on the abilities of the teacher to work effectively. However, it is necessary for teachers to develop competence for use and application of Information and Communication Technologies Skills. Therefore, public senior secondary school teacher's knowledge and skills in ICT have to be raised and updated.

Given this deeply-rooted thoughts, it was on this premise that the study was set out to determine and compare the ICT competencies among teachers in private and public secondary schools in Port Harcourt Metropolis and to proffer recommendations and solutions to mitigate the shortcoming, if any.

Purpose of the Study

The purpose of the study was to investigate the ICT competencies among teachers in public and private secondary schools in Port Harcourt Metropolis. Specifically, the study intends to:

1. Determine the competency level in Word Processing skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis
2. Determine the competency level of PowerPoint Presentation skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis.
3. Determine the competency level in computer Interface Design skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis.
4. Determine the competency level in Internet Surfing skills among teachers in public and

private senior secondary schools in Port Harcourt Metropolis.

Research Questions

The following research questions were raised to guide the study:

1. What is the competency level in Word Processing skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis?
2. What is the competency level in PowerPoint Presentation skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis?
3. What is the competency level in computer Interface Design skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis?
4. What is the competency level in Internet Surfing skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis?

Hypotheses

The following hypotheses guided the study:

- 1 There is no significant difference in the mean rating of competency level in Word Processing skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis.
- 2 There is no significant difference in the mean rating of competency level in PowerPoint Presentation skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis.
- 3 There is no significant difference in the mean rating of competency level in Interface Design skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis.
- 4 There is no significant difference in the mean rating of competency level in Internet Surfing skills among teachers in public and private



senior secondary schools in Port Harcourt Metropolis.

Methodology

The research adopted descriptive survey design. The area covered in the study is Port Harcourt metropolis, which comprises the Obio/Akpor and Port Local Government Areal. The population of the study is the entire 6,117 teachers in 424 secondary schools in Port Harcourt Metropolis. This comprised of teachers in both the public and private secondary schools.

A sample of 332 teachers from public senior secondary school and 365 teachers from private senior secondary school was selected from a population of 6117 teachers using the Taro Yamane formula.

The instrument for data collection is a structured questionnaire developed by the researchers. The questionnaire pattern adopted a four point likert type scale of Strongly Agreed (SA) 4 point,; Agreed (A) 3 points; Disagreed (D) 2 points and Strongly Disagreed (SD) 1 point.

To ensure face and content validity of the instrument, the first copies of the questionnaire were given to experts in Educational Technology and Statistics. The reliability of the questionnaire was tested using the test - retest method. To achieve this, copies of the questionnaire were administered to 30 teachers in public and private

schools respectively that didn't fall under the sample frame. The administered copies of the questionnaire were collected from the teachers and re-administered again to this same set of teachers after a gap of two weeks. Thereafter, results were collated and the Pearson Product Moment Correlation (PPMC) was used to test the relationship between the two parallel set of results. The result yielded a reliability index of 0.83. This indicated that the instrument was reliable.

The questionnaire was then administered to the teachers face to face and their responses retrieved a week later. The data gathered from the questionnaire were analyzed using mean and standard deviation to answer the research questions. Respondents having the mean rate of 2.5 and above were accepted while mean below 2.5 were rejected. The hypotheses were tested using the z-test statistics at 0.05 level of significance. A null hypothesis is not rejected if the calculated z-test is less than the critical value, but was rejected if the calculated z-value was greater than the critical z-value.

Results.

Research Question 1: What is the competency level in Word Processing skills among teachers in public and private senior secondary school in Port Harcourt Metropolis?



Table 1: Descriptive Statistics on the Level of Word Processing Skills among Teachers in Public and Private Senior Secondary School in Port Harcourt Metropolis

S/N	Item Description	Public 332		Private 365		Aggregate		Decision
		X	SD	X	SD	X	SD	
1	You can identify a Microsoft Word icon on a desktop.	2.20	1.12	2.85	1.08	2.53	1.10	A
2	You can get a Microsoft word page started.	1.86	0.99	3.32	0.88	2.59	1.94	A
3	You can type words from the keyboard.	2.43	0.94	3.31	0.89	2.87	0.94	A
4	You can edit a typed work.	2.04	1.03	3.25	1.01	2.63	1.02	A
5	You can save a work both on both on an internal and external drive.	1.95	0.93	3.77	1.14	2.86	1.04	A
6	You can retrieve a saved work when needed.	1.54	0.84	3.62	0.80	2.58	0.82	A
7	You can transfer files from one memory to another.	2.09	1.19	3.04	1.00	2.57	0.94	A
8	You can print a word document into hardcopy.	2.16	1.02	3.39	0.86	2.78	0.94	A
Grand Mean/ SD		2.03	1.01	3.32	0.96	2.68	1.09	A

Source: Field Survey 2020

The Table 1. shows that both public schools teachers and private school teachers agreed that their competency level in Word Processing skills is high as shown in the Aggregate Mean (2.86). On the school types analysis, the public school teachers competency skills level in Word Processing skills has Grand Mean (2.03) which is below the criterion mean (2.50), whereas the competency level in World Processing skills of the private school teachers was high, with a Grand Mean (3.32). The result therefore is that

the competency level in Word Processing skills was low for the public school teachers but high for the private school teachers. .

Research Question 2: What is the competency level in Power Point presentation skills among teachers in public and private senior secondary schools in Port Harcourt Metropolis?



Table 2: Descriptive Statistics on the competency level in PowerPoint Presentation Skills Level among Teachers in Private Senior Secondary Schools in Port Harcourt Metropolis.

S/N	Item Description	Public 332		Private 365		Aggregate		Decision
		X	SD	X	SD	X	SD	
9	You can conveniently launch a PowerPoint program.	2.23	1.09	2.99	1.08	2.61	1.09	A
10	You can choose a slide on a PowerPoint.	1.64	0.95	3.31	0.99	2.48	0.97	D
11	You can create a title page on a PowerPoint.	1.69	0.97	3.27	0.95	2.48	0.96	D
12	You can add more slide to a PowerPoint page.	1.99	1.06	2.96	1.09	2.48	1.08	D
13	You can add charts, pictures and graphs on a PowerPoint slide.	1.37	0.76	3.58	0.78	2.48	0.77	D
14	You can add transitions on a PowerPoint.	1.55	0.78	3.32	0.81	2.44	0.80	D
15	You can use multiple slides for a PowerPoint presentation on a computer.	1.73	0.98	3.20	1.03	2.47	1.01	D
16	You can display a presentation on a PowerPoint.	1.91	1.05	3.09	1.04	2.50	1.05	A
17	You can edit, open and save a PowerPoint presentation on a computer.	2.41	1.16	2.61	1.16	2.51	1.16	A
18	You can preview a PowerPoint presentation on a computer.	2.17	1.12	2.80	1.14	2.49	1.13	D
19	You can use a PowerPoint presentation to hold a class.	1.83	1.03	3.14	1.06	2.49	1.05	D
Grand Mean/ SD		1.87	0.10	3.12	1.01	2.49	1.01	D

Source: Field Survey 2020

Table 2 shows an Aggregate Mean (2.49) for both teachers in Public and Private Schools on the competency level in the PowerPoint presentations skills, which is below the Criterion Mean (2.50). On school types analysis, public school teachers scored Grand Mean ((1.87) on the competency level in PowerPoint presentations skill, which is below the Criterion Mean (2.50), but for the private school teachers, the competency level on the PowerPoint presentations skills has a Grand Mean (3.12), which is above the Criterion Mean (2.50). On item by item analysis, the teachers in

the private school agreed that they have a high competency level on PowerPoint presentation skills in items 9, 16 and 17, while the teachers in both school types disagreed on their competency level on the PowerPoint presentation skills in the rest of the items.

Research Question 3: What is the competency level in computer Interface design among teachers in public and private senior secondary school in Port Harcourt Metropolis?



Table 3: Descriptive Statistics on the competency Level in computer Interface Design of Teachers in Public and Private Senior Secondary Schools in Port Harcourt Metropolis.

S/N	Item Description	Public 332		Private 365		Aggregate		Decision
		X	SD	X	SD	X	SD	
20	You can identify the computer hardware and its peripherals.	1.81	0.97	3.23	0.98	2.52	0.98	A
21	You can turn on, start up, shut down and restart a computer system.	2.57	1.15	3.46	0.89	3.02	1.02	A
22	You can save my documents both n an internal and external storage device.	1.77	0.98	3.33	0.93	2.55	0.96	A
23	You can delete and rename my files.	2.43	1.20	3.20	0.95	2.82	1.08	A
24	You can connect an internet to a computer.	1.94	1.15	3.28	0.93	2.61	1.04	A
25	You can compose, receive and send emails.	2.21	1.23	3.34	0.92	2.78	1.08	A
26	You can use a social media handle very well.	2.84	1.09	3.58	0.78	3.21	0.94	A
27	You can use a printer conveniently.	2.05	1.08	3.34	0.88	2.70	0.98	A
28	You can minimize and maximize a window.	1.82	1.00	3.14	0.97	2.47	0.99	D
29	You can do a presentation using my PowerPoint slides on the computer.	2.06	1.05	3.12	1.05	2.59	1.05	A
30	You can access the online library.	1.47	0.83	3.39	0.88	2.43	0.86	D
	Grand Mean/SD	2.10	1.07	3.31	0.92	2.70	1.00	A

Source: Field Survey 2020

Table 3. shows the Aggregate Mean (2.70) score of teachers in Public and Private schools. This score is above the Criterion Mean (2.50). On school types analysis, there is a Grand Mean (1.07) for the Public school teachers competency level in computer interface design skills. This is below the Criterion Mean (2.50)..The private school teachers' Grand Mean (3.31) which is higher than the Criterion Mean (2.50) score. The result is that Private schools teachers competency level in Computer Interface design skills is accepted and greater than competency level of those among the public

school teachers. On item by item analysis, the public school teachers were scored high in their competency level in items 21 and 26 only, while the teachers in private schools scored high in their competency levels in all the the computer interface design skills.

Research Question 4: What is the competency level in Internet Surfing skills among teachers in public and private senior secondary school in Port Harcourt Metropolis?



Table 4: Descriptive Statistics on the competency level in Internet Surfing Skills among Teachers in Public and Private Senior Secondary School in Port Harcourt Metropolis.

S/ N	Item Description	Public 332		Private 365		Aggregate		
		X	SD	X	SD	X	SD	Decision
31	You have knowledge on how to browse on the Internet.	2.12	1.07	2.91	1.11	2.16	1.09	D
32	You can hold an online classroom successfully.	1.95	1.06	2.62	1.16	2.29	1.11	D
33	You can install software on a computer.	1.33	0.76	2.87	1.12	2.10	0.94	D
34	You can download an anti- virus on a computer.	1.31	0.63	2.85	1.04	2.08	0.84	D
35	You can scan a computer successfully.	1.57	0.89	3.01	0.90	2.29	0.90	D
36	You can go from one page to another on the internet.	2.84	1.08	3.07	0.99	2.96	1.04	A
37	You can browse for topics of your interest on the internet.	2.81	1.01	3.18	0.95	3.00	0.98	A
38	You can start an internet browser.	2.27	1.03	3.39	0.82	2.83	0.93	A
39	You can type an address on the web page in the location box.	1.95	1.06	3.42	0.83	2.69	1.89	A
40	You can identify and use common buttons on the browser toolbar.	1.31	0.74	2.97	0.96	2.14	0.85	D
41	You can close the browser.	2.84	0.98	3.43	0.79	3.14	0.89	A
42	You can hold a Computer Based Test without an assistance.	1.93	1.07	2.87	1.01	2.40	1.04	D
Grand Mean/SD		2.02	0.95	3.05	0.97	2.51	1.04	
								A

Source: Field Survey, 2020

Table 4. shows an Aggregate Mean (2.51) for competency level in Internet surfing skills of teachers in both public and private school. This is above the Criterion Mean (2.50). On school types analysis, the public school teachers scored a Grand Mean (2.02), which is below the Criterion Mean, while the teachers in private schools scored a Grand Mean (3.05), which is above the Criterion Mean. The result indicated that the public school teachers lacked competency level in the internet surfing skills, while the private school teachers

were considered high in the competency level in the Internet surfing skills. On item by item analysis, the public school teachers were high in competency level in items 36, 37 and 41 only. It was also shown that the private school teachers were competent in all the Internet surfing skills, except in the skills of minimizing and maximizing a Window and in accessing the online library.



Test of Hypothesis

Hypothesis 1: There is no significant difference in the mean rating of competency level in Word Processing skills among teachers in public and their counterparts in

private senior secondary schools in Port Harcourt Metropolis.

Table 5: Z-Test Analysis on the Word Processing Skill Level of Teachers in Public and Private Senior Secondary School in Port Harcourt Metropolis.

Respondents	N	X	SD	z-cal	z-crit	RMK
Public school teachers	332	2.03	1.01	2.24	1.96	H ₀
Private school teachers	365	3.32	0.96			Rejected

Table 5 above revealed that z-calculated value 2.24 is higher than z-critical value of 1.96 at 0.05 level of significance. This indicates that the computed value of z is significant. We therefore reject the null hypothesis that there is a significant difference in mean rating of public and private senior secondary school teachers on the competency level in Word Processing skills. Particularly, from table 4.1, the mean for teachers of public senior secondary is 2.03 and 3.32 for teachers in private senior secondary schools. In other words,

teachers of private senior secondary schools in Port Harcourt Metropolis are higher on the competency level in Word Processing skills than teachers in public senior secondary schools in Port Harcourt Metropolis.

Hypothesis 2: There is no significant difference in the Power Point Presentation skills level of teachers in public and those in private senior secondary schools in Port Harcourt Metropolis.

Table 6: Z-Test Analysis on the Power Point Presentation Skills Level of Teachers in Public and Private Senior Secondary School.

Respondents	N	X	SD	z-cal	z-crit	RMK
Public school teachers	332	1.87	0.10	2.35	1.96	H ₀
Private school teachers	365	3.12	1.01			Rejected

Table 6 above revealed that z-calculated value 2.35 is higher than z-critical value of 1.96 at 0.05 level of significance. This indicates that the computed value of z is significant. We therefore reject the null hypothesis that there is no significant difference in mean rating of public and private senior secondary school teachers on the competency level in PowerPoint presentation skills. Particularly, from table 2, the mean for teachers of public senior secondary is 1.87 and 3.12 for teachers in private

senior secondary schools. In other words, teachers of private senior secondary schools in Port Harcourt Metropolis are higher on the competency level in PowerPoint presentation skills than teachers in public senior secondary schools in Port Harcourt Metropolis.

Hypothesis 3: There is no significant difference in the mean rating on competency level in computer Interface design skills among teachers in public and their



counterparts in private senior secondary schools in Port Harcourt Metropolis

Table 7: Z-Test Analysis on the competency level in computer Interface Design Skills among teachers in Public and Private Senior Secondary Schools in Port Harcourt Metropolis.

Respondents	N	X	SD	z-cal	z-crit	RMK
Public school teachers	332	2.10	1.07	1.64	1.96	H ₀
Private school teachers	365	3.31	0.92			Accepted

Table 7 above revealed that z-calculated value 1.64 is less than z-critical value of 1.96 at 0.05 level of significance. This indicates that the computed value of z is not significant. We therefore accept the null hypothesis that there is no significant difference in mean rating on the competency level in computer interface design skills among teachers in public and private senior secondary schools. Particularly, from table 3, the mean for teachers of public senior secondary is 2.10 and 3.31 for teachers in private senior secondary schools. In other

words, teachers of private senior secondary schools in Port Harcourt Metropolis are not higher on the competency level in computer Interface design skills than teachers in public senior secondary schools in Port Harcourt Metropolis.

Hypothesis 4: There is no significant difference in the mean rating on the competency level in Internet Surfing skills among teachers in public and those in private senior secondary schools in Port Harcourt Metropolis.

Table 8: Z-Test Analysis on the competency level in Internet Surfing Skills among Teachers in Public and Private Senior Secondary School in Port Harcourt Metropolis.

Respondents	N	X	SD	z-cal	z-crit	RMK
Public school teachers	332	2.02	0.95	2.01	1.96	H ₀
Private school teachers	365	3.05	0.97			Rejected

Table 8 above revealed that z-calculated value 2.01 is higher than z-critical value of 1.96 at 0.05 level of significance. This indicates that the computed value of z is significant. We therefore reject the null hypothesis that there is no significant difference in mean rating on the competency level in Internet surfing skills among teachers in public and private senior secondary schools. Particularly, from table 4. the mean for teachers of public senior secondary is 2.02 and 3.05 for teachers in private senior secondary schools. In other words, the competency level in Internet surfing skills was higher among teachers in private than the teachers in senior secondary schools in Port Harcourt Metropolis.

Summary of Major Findings

The following findings emanated from the data analyses of this study.

1. The Word Processing skills level of teachers in public senior secondary school was poor as compared to teachers in the private senior secondary school in Port Harcourt Metropolis.
2. The Power Point Presentation skills level of teachers in public senior secondary school was poor as compared to teachers in private senior secondary schools in Port Harcourt Metropolis.
3. The computer Interface Design skills level of teachers in public senior secondary school was



poor as compared to teachers in private senior secondary schools in Port Harcourt Metropolis.

4. The Internet Surfing skills level of teachers in public senior secondary school was poor as compared to teachers in private senior secondary school in Port Harcourt Metropolis.

Discussion of Findings.

The first finding of the study revealed that public senior secondary school teachers lack the Word Processing skills. The skill needed to use the computer to create, edit, save, type words from the keyboard and print documents into hardcopy. This is in line with the finding of Vasilka, Tatjana, Dean and Sanja. (2014). The results of their finding showed that 25% of the teachers have below basic ICT Competency, 17% of teachers have basic knowledge and skills to operate a computer, and the highest percentage, 58% of teachers with proficient ICT competence. This is similar to the present research as both have to do with the ICT competences of teachers but it is different from the present work as it adopted the technical structural equation for getting the who investigated the factors affecting the development of ICT competencies of teachers in primary. The research surveyed 220 teachers from 10 primary schools of Macedonia. The Technique Structural Equation Modelling (SEM) was used to determine the relative strength of influence of factors on ICT competencies of teachers sample size.

The second finding revealed that the Power Point Presentation competency of public school teachers were poor. These skills are needed to produce graphics in slides. Similar to Olusesan and Emmanuel (2014), who investigated the Teachers' Competence on ICT and availability of E-learning Resources in the Teaching of Mathematics in Secondary Schools. The findings showed that none of the mathematics teachers passed through some form of ICT courses such as power point, data logging, flash animation, excel and software CDs, which impacts significantly on mathematics teaching. Studies however showed that 10% of the participants had satisfactory levels of skill in e-mail access and internet browsing. From the study, it was however concluded that

the ICT incompetence of mathematics teachers is hindered by lack of E-learning resources.

The third finding revealed that public senior secondary school teachers lack computer Interface Design skills which can also help to boost students ICT skills. These are skills to turn on, turn off, restart, shutdown, save, open, retrieve, delete, insert, transfer files from one memory to another. This is in line with the finding of Wordu (2020), which investigated the digital divide among teachers in urban and rural secondary schools in Rivers State. The result of the finding shows that to a large extent the literacy/ skills acquired in ICT influenced the digital divide among the urban and rural school teachers. Both also have to do with ICT / competencies of teachers but the differences between the two studies is that the present study sampled Port Harcourt Metropolis teachers while the previous one studied rural and urban teachers in Rivers State.

The fourth findings of the study revealed that public school teachers Internet Surfing skills were in short coming. This is in line with the finding of Las, Romel, Devine, Lowell, Micheline, Mark, Jeffrey and Vanessa (2017), who carried out a study on assessment of ICT competencies of public school teachers. Both studies are similar as they employed a descriptive survey method and questionnaire is the instrument for data collection. The difference between the two is that, the previous study focused on public secondary school teachers while the present study is on public and private senior secondary school teachers.

Conclusion

Based on the findings of this study the researchers hereby concluded that the teacher in the Senior Secondary Schools were competent in ICT. It was also concluded that the competency level of private sector Secondary Schools was higher than those of the public Senior Secondary Schools in Port Harcourt metropolis.

Recommendations

The researcher recommended the following::

- 1 That teachers in public Senior Secondary Schools should be provided with training opportunities for the improvement of their skills



on Word Processing. Attention should be provided on how to edit, save on both internal and external devices, retrieve, transfer files and print out documents from Word Processing pages.

- 2 That teachers in public Senior Secondary schools should be trained on PowerPoint presentations, with special attention on how to choose slides, create title page, add graphics, preview and programme slides to enable them hold a class using PowerPoint.
- 3 Training should be provided, from time to time for public Senior Secondary Schools on how to handle computer interface design.
- 4 Teachers in public Senior Secondary Schools should be trained for the upgrading and updating their skills in surfing. This will enable them effectively browse on the Internet, hold an online class, download anti-virus and hold a computer based test, at ease.

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