



# **Assessment Of Teachers' Perceived Computer Literacy Skills In Public Model Primary Schools In Obio/Akpor Local Government Area**

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## **ABSTRACT**

This paper assessed the perceived computer literacy's skills of teachers in public Model primary schools in Obio/Akpor Local Government Area in Rivers state. The study adopted descriptive survey which involved distribution of questionnaire instruments for data collection in order to determine the estimated sample and the population of the study. The population of the study comprised of 1400 teachers drawn from the 26 public model Primary schools in the study area. The study was guided by two research questions and one hypothesis. Multi-stage sampling procedure was used to draw 96 teachers. Instrument for data collection was self-designed questionnaire titled Computer Access, Utilization and Literacy Scale (CAULS). Mean and Standard Deviation were used to answer the research questions while the t-test statistics was used to test the research hypothesis at 0.05 level of significance. The study concluded that most of the teachers possessed the perceived computer skills such as Microsoft Word skill; Excel skill and PowerPoint skill at the basic level and whether a person is male or female is irrelevant. The study recommended that government should provide more computers in schools and encourage in-service training, workshop and seminar for both male and female teachers from time to time in order to boost their computer literacy skills.

**Keywords:** assessment, teachers, computer, literacy, skill

## **INTRODUCTION**

Primary education is the formal foundation of education that learners need so as to be prepared for secondary and university education. It is the education where the learners are exposed to the basic skills of Computer, English language, Mathematics, Handwriting, General Studies among others (Ally, 2007). Primary schools provide children with the opportunity to acquire basic skills and knowledge that they need to be successful in life. It provides a child with an environment where they can explore, experiment, and learn at their own pace (Aloraini, 2012). It also helps children develop social skills such as cooperation, communication, and empathy which are essential for children's development.

With the emergence of internet technologies and new technological devices, teachers in primary schools now have better access to educational resources that enhance their teaching skills for benefit of their learners. Despite this, there still exists a gap in the computer skills of primary school teachers in public schools compared to private schools. To close this gap and help the public primary schools remain competitive, the former Rivers state Governor Rt. Hon. Chibuike Rotimi Amaechi provided computer

laboratories for model primary schools in Rivers State for effective teaching and learning. In the year 2018, the government made effort to recruit and train teachers in the basic rudiments of computer literacy. Computer literacy is defined as the knowledge and ability to use computers and related technology devices efficiently with skill levels ranging from elementary use to computer programming and advanced problem solving. To physically operate a computer, teachers in model primary schools in Obio/Akpor Local Government Area need hardware and software expertise. Knowing how to boot and shutdown computer devices is basic hardware skill. Additionally, they could be more familiar with the basic computer applications such as Microsoft Word, Microsoft Excel and Microsoft PowerPoint. The basic computer skills focused on word processing, using spreadsheets and databases, creating presentations, finding information and communicating through computer effectively to ensure that adequate computer learning is established.

### **Statement of the problem**

The teaching of computer overtime has been based on theoretical method and teachers have not really looked at the real solution to ending the theoretical delivery of computer to students. The lack of literacy skills in computer usage is the hull mark of computer literacy delivery. The availability, accessibility and utilization of computer through practice leads to effective computer literacy skills and this had been lacking and not much effort is being put in place to revitalize the computer teaching system. The lack of this computer literacy skills is not dependent on the gender but on the willingness to learn and be proficient. Teachers perceived the lack of literacy skills in computer as not important, hence it is against this backdrop that this paper assessed teachers' perceived computer literacy skills in public model primary schools in Obio/Akpor Local Government Area.

### **Aim and Objectives**

The paper intended to determine the perceived teachers' computer literacy skills of public model primary schools in Obio/Akpor Local Government Area. Specifically, the objectives of the study were to:

1. determine the extent to which teachers in model primary schools possess computer literacy skills such as: Microsoft Word, Microsoft Excel and Microsoft PowerPoint.
2. find out the difference in the computer literacy skills of male and female teachers in public model Primary schools.

### **Research Questions**

The researchers stated the following research questions which guided the study:

1. To what extent do teachers in models' primary schools possess computer literacy skills such as: Microsoft word, Microsoft Excel and Microsoft PowerPoint?
2. What difference exists in the computer literacy skills of male and female teachers in public model Primary schools?

### **Hypothesis**

The paper has one hypothesis which was tested at 0.05 level of significance.

1. There is no significant difference in the computer literacy skills of male and female teachers in public model Primary schools.

### **Literature Review**

Computer literacy skills are the skills most often cited when talking about 21<sup>st</sup> century skills. There are increasingly being recognized as attributes that separate teachers and learners who are ready for a more and more complex life and work environment in 21st century. These include critical thinking and problem-solving skills. It is effectively analyze and evaluate evidence, argument, claims and beliefs to solve different kinds of non-familiar problems in both conventional and innovative pattern. Communication skills articulate thoughts and ideas effectively using oral and written communication skills in a variety of forms and contexts. Collaboration skills demonstrate the ability to work effectively and respectfully with diverse teams. Then, creativity and innovation adopt a wide area of ideas creation techniques to create new and worthwhile ideas (Albirini, 2016). In contrast to electrical and computer engineers, computer scientists focus primarily on software and software systems, including their theory, design, development, and application. Nigerian basic primary and technical schools all provide courses in

computer science. Student empowerment to gain fundamental scientific information is the goal of computer technology education. They are better thinkers who are creative, self-assured, and capable of higher levels of academic study and life success.

Computer literacy in 21<sup>st</sup> century where learning has a new face as a result of the heavy presence of ICT devices, tools and emerging technologies which in no small ways have changed the traditional roles of both teachers and learners, hence the change from the “importation” of knowledge to “facilitation” of learning (Williams, 2005). Computer literacy skill has more to do with digitalization skills which refer to the essential skills needed to use computers and digital devices to access and manage information. The skill includes researching independently, the ability to research online is a needed digital skill for teachers, understanding basic technology and adaptation to changing technologies, collaboration tools also the ability to teach others about technology (Fomsi, 2010). ICT stands for different types of digital tools resources which are used for storing, managing, and for communication and it goes beyond the use of digital resources and processes as tool. This means that the phases are developmental and as such teachers must venture beyond familiarization, utilization, integration, towards reorientation and evolution for innovative and creative usages. Williams (2005) talked about computer literacy skills without touching the 21<sup>st</sup> century skills for teachers. It is the ability to look at their practice and adapt based on the needs of pupils. They must be able to adapt their teaching style to include different modes of learning, adapt when a lesson fails and adapt to new technology.

Access to a computer involves using any method to access data or programmes stored in a computer's random-access memory or on any storage devices. Desktop means a computer where the main unit is intended to be located in a permanent location, often on a desk or on the floor. Desktops are not designed for portability and utilize an external computer display, keyboard and mouse. Desktops are designed for a broad range of home and office applications. Personal Computer means a lap top or handheld computer, including accessories or attachments. This does not include iPhone, Blackberry, other smart phones or personal digital assistants. Personal Computer(s) means computers based on a microprocessor generally designed to be used by one person at a time and which usually store informational data on that computer's internal hard drive or attached peripheral. A personal computer can be found in various configurations such as laptops, net books, and desktops. Internet access service means a publicly available electronic communications service that provides access to the internet, and thereby connectivity to virtually all end points of the internet, irrespective of the network technology and terminal equipment used. Computer database or “database means” a collection of recorded information in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer.

**Accessibility:** Computer training provides accessibility due to which a student can learn from anywhere in the world. This is an especially important consideration for pupils who wish to study in a different country (Mehra & Mital, 2020). It doesn't matter where a student lives and what he wants to study- he can always find a suitable course or even a Degree Program that can be followed from home. Pupils training options are not constrained by their geographic location.

**Personalized Training:** Computer Training system enables a student to determine and process his/her training style, content, aim, current knowledge and individual skills. Therefore, person -specific education could be provided through creating individual training styles. E-Training enables the individual to plan and direct his/her own training. It has the potential to motivate, develop confidence and self-esteem and overcome many barriers that learners encounter, personalize the training experience, widen access and improve the training experience, while also helping people to develop their ICT skills (Mehra & Mital, 2020).

**Develops Cognitive Abilities:** In a study, it was found that E-Training may be effective in developing cognitive abilities of student teachers Admin, (2015). It was found that pupils of e-training program had higher achievement levels than their counterparts. A student can find unlimited information which he can access just by the click of a button. Many Computer programs are offered by some of the most prestigious universities from all around the world. The student can take such a course computer which can be helpful for the development of his cognitive abilities.

**Cost-Effectiveness:** Computer Training is cost effective because less money is spent in travelling and in buying books or spending money in college context. Since it can be carried out at any geographic location and there are no travel expenses, this type of training is less costly than training at a traditional institute. Pupils who want to study through this mode need to have access to the necessary computer hardware as well as paying often substantial fees for access to an internet service provider (Albirini,2016).

**Promotes Research:** Pupils are excited to publish their work when they produce something of extremely high quality. With the permission of their teachers, they post the work on the web as examples for current and future pupils. Publishing pupils work helps form a classroom legacy and archive of successful products.

**Basic Skills in Microsoft word, Microsoft Excel and Microsoft PowerPoint are as followed:**

Microsoft Word Skills	Microsoft Excel Skills	Microsoft PowerPoint Skills
1. Page setup	1. Spreadsheets	1. Presentation design
2. Text formatting	2. Workbooks	2. Templates
3. Editing	3. Formulas	3. Custom slides
4. Creating templates	4. Data Linking	4. Animation
5. Textboxes	5. Pivot Tables	5. Manuscripts
6. Smart Art	6. Charts	6. Creating graphs and charts
7. Quick Access	7. Data Analysis	7. Presentations
8. Title and ribbon bar	8. Macros and Automization (VBA)	8. troubleshooting
9. Spell-check	9. IF Statements	
10. Grammar check	10. Data Validation	

**Source:** researcher’s design

**Challenges of Computer Literacy in Education**

The act of integrating ICT into teaching and learning is a complex process and one may encounter a number of difficulties such as Lack of qualified ICT personnel’s in the schools, Lack of fund and high cost of computer ICT facilities, Lack of basic amenities such as housing, ICT centres and electricity, Environmental factors, Lack of skilled personnel and Time limitation.

The use of computer in the school laboratory includes the following information, database, visualization, simulation and desktop publishing.

The benefits of computer skills to teaching and training processes in schools to include according to Albirini (2016) are that training enrichment or training new things, communicating with other, regular instruction and training for developing computer skills, a teaching and training need for specific subject and finding and accessing information.

**Challenges in Utilizing Computer Training Needs for Teacher Effectiveness such as follows:**

**Limited accessibility and network connection:** Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevents teachers from integrating new technologies into education which will make them efficient and more effect effective in instructional delivery. Various research studies indicated several reasons for the lack of access to technology.

**School with limited technical support:** Without both good technical supports in the classroom and whole school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT (Admin, 2015). He found that in the view of Primary and Primary teachers, one of the top barriers to ICT u se in education were lack of technical assistance.

**Lack of effective training:** The challenge most frequently referred to in the literature is lack of effective training. Study was that there were not enough training opportunities for teachers in using ICTs in a classroom environment. Similarly, Anderson (1998) found that one of the top three barriers to teachers’ use of ICT in teaching was the lack of training.

**Limited time:** Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching (Anderson, Varnhagen & Campbell, 1998).

**Lack of teachers' competency:** Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Varnhagen & Campbell, 1998). In Australian research, Newhouse (2020) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes and integration of supplementary training associated with bringing computers into their teaching practices.

This paper was anchored on connectivism theory.

In 2005, two theorists named George Siemens and Stephen Downes initially presented connectivism theory as a framework for understanding learning in digital age. It emphasizes how internet technologies such as computers, web browsers, search engines, wikis, online discussion forum and social networks contributed to new avenues of learning. Connectivism was developed to understand learning in the digital age. Siemens (2005b) stated that the time to revise existing theories has passed, and a new theory to address the technological world is needed. According to connectivism, technology plays a significant role in our educational process. As a matter of fact, this theory advances the notion that learning may occur effectively through digital platforms such as blogs, videos, social media and forums. Siemens and Downes (2018) carried out a study on the development of computer training skills in Primary education teachers' training in Spain. The population of the study comprised teachers in three academic courses of 2020/2021, 2021/2017 and 2017/2018 teachers training specialty of master's degree in Primary school training of the public University of Navarre, Spain. The findings of the study showed that teachers in initial training have low conception of their own level of computer training skills, high conception in information competence, which refers mostly to the operations they perform while in training. The study recommended among others that the knowledge or skills of teachers' exhibit are largely self-taught and, so, there is an urgent need to purposefully incorporate relational and didactic aspect of ICT integration.

Siemens conducted a study on professional development on teacher computer competence and improving school quality from teachers' perspective: a case study of Spain. Bell described Siemens' and Downes' ideas as a bold research agenda around the sharing the impact of theories of networks, complexity and chaos. Siemens established a set of principles for Connectivism. Downes (2018) carried out a study on information literacy competence standards for elementary and high school teachers in Taiwan. The resulting questionnaire was distributed to another group of 33 participants which included graduate school deans of Information Education, professors, school principals, department directors and teachers, and information professionals. Williams (2017). Conducted research on the implications for career counseling of the demand for competent teachers as a prerequisite for efficient human capital development in the Federal Capital Territory and Among the six area councils in the Federal Capital Territory, two (Bwari and Kwali) were chosen for the research. 162 instructors, 91 women and 71 men, made up the sample that took part in the research.

## METHODOLOGY

The study adopted a descriptive research design. According to Study.com (2012), descriptive design uses a range of both qualitative research and quantitative data to gather information to make accurate predictions about a particular problem or hypothesis. This study was carried out in public model primary school in Obio/Akpor Local Government Area, Rivers State. The population of the study comprised all the teachers in the twenty-six (26) public model Primary schools. According to Rivers State Universal Basic Education Board, RSUBEB, (2019) the population was 1400 teachers (670 male and 830 female). The first step of multistage sampling involves the researcher grouping the population into groups and choosing a subset of these groupings. The method is repeated by the researcher up until the last phase, further breaking those chosen clusters into smaller clusters at each succeeding level. Then Multi-stage sampling procedure was used to select ninety-six (96) teachers for the study. Instrument for data

collection was a questionnaire titled Computer, Access, Utilization and Literacy Scale (CAULS). The face and content validities of the instrument was carved out by text experts to see whether it was able to measure what it intended to measure. The reliability coefficient of 0.86 was established by using Mean, standard deviation and t-test was used to answer the research and test the hypothesis at 0.05 level of significance.

## RESULTS

**Research Question 1:** *To what extent do teachers in public model primary schools possess computer literacy skills such as: Microsoft word, Microsoft excel and Microsoft PowerPoint?*

**Table 1:** Mean and standard deviation analysis of the extents to which teachers in these model primary schools possess computer literacy skills

Computer Literacy	N	Mean	Std.D
Very high extent	91	173.59	19.07
High extent	4	107.25	11.58
Moderate extent	1	61.00	25.53
Low extent	0	0	0

Table 1 shows that 91 teachers with mean of 173.59 possess computer literacy skills to a very high extent, 4 teachers with means of 103.25 possessed computer literacy skills to a high extent, 1 teacher with mean of 61.00 possessed computer literacy skills to a moderate extent while no teacher possesses to a low extent computer literacy skills. From the table, it can be observed that teachers with excellent computer literacy skills with (N=91, Mean 173.59) constitute majority of the teachers. With more teachers, possessing computer literacy skills to a very high extent, we can conclude that the teachers in public model primary schools can use Microsoft Word, Microsoft Excel and Microsoft PowerPoint.

**Research Question 2:** *What difference exists in the computer literacy skills of male and female teachers in public model Primary schools?*

**Table 2:** Mean and standard deviation analysis of difference that exists in the computer literacy skills of male and female

Sex	N	Mean	Std.D
Male	26	160.68	28.934
Female	70	172.98	23.511

Table 2 reveals that, the males have  $\bar{x}$  of 160.68 representing their computer literacy skills while the females have  $\bar{x}$  of 172.68 representing their computer literacy skills. The difference in males' means scores of the groups' show that, on average of computer literacy skills of males and females differ as represented by their computer literacy skills scores. A comparison of these two means show that; there is difference between the mean score of males and females. The difference which are higher for the females as seen by the mean  $\bar{x}$  of 172.98 of the mean score of males which were 160.68, reveal that, on the average, the females have higher computer literacy skills than the males.

**Hypothesis:** There is no significant difference in the computer literacy skills of male and female teachers in public model Primary schools

**Table3:** Independent samples t-test analysis of significant difference in the computer literacy skills of male and female teachers in model primary schools

Gender	N	$\bar{x}$	SD	Df	T	Sig.	p	Decision
Male	26	160.68	28.934	28.93	42.135	0.035	0.05	Rejected
Female	70	172.98	3.511					Ho <sub>1</sub>

The table 3 shows that  $p = 0.035$  is less than 0.05 and this is statistically significant at the chosen alpha level of 0.05. Therefore, there is a significant difference in the computer literacy skills of male and female teachers in public model primary schools. The null hypothesis is

rejected. This implies that, there is a significant difference in the computer literacy skills of male and female teachers in public model primary schools.

## DISCUSSION

This article assessed the extent to which teachers in public model primary schools possess perceived computer literacy skills such as: Microsoft word, Microsoft Excel and Microsoft PowerPoint. Moreover, the outcomes demonstrated that gender had no impact on computer literacy skills. This evidence is consistent with the findings of Adeoye and Adeoye (2017), who found that access to the computer room is openly encouraged and that the overwhelming of employed teachers are satisfied in their level of digital information literacy. According to study by Nilgun, Fatma, and Kerim, teachers believe they possess the problem-solving and project-working skills required to conduct teaching and learning in the classroom (2015).

## CONCLUSION

The result of the study showed that male and female teachers in public model Primary schools possess computer literacy skills such as Microsoft word, Microsoft Excel and Microsoft PowerPoint but the skills they possessed are not enough for them to compete with other teachers in private schools.

## RECOMMENDATIONS

1. Government should provide computer to schools and ensure that both teachers and pupils are allowed to have access to the computers, also in-service training on computer literacy skills should be encouraged among primary school teachers focusing on Microsoft word, Microsoft Excel and Microsoft PowerPoint skills in public model primary school precisely.
2. Teachers should be encouraged to utilize the computers in the school laboratory for teaching and presentation.
3. Teachers (both male and female) should be taught on how to use computer to acquire literacy skills especially in Microsoft word, Excel and PowerPoint applications to facilitate teaching and learning processes in model primary schools.

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