# Influence of Computer Literacy on Teaching Effectiveness of Teachers in Public Senior Secondary Schools in Obio-Akpor Local Government Area, Rivers State

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**ABSTRACT:** The study assessed the influence of computer literacy on teaching effectiveness among senior secondary school teachers in Obio-Akpor Local Government Area of Rivers State. It was guided by 2 research questions and 2 null Hypotheses; a descriptive survey design was used. The population of the study was 1,309 teachers (878 females and 431 males). Purposive random sampling was used to select the sample. 10% of the population was sampled, thus; 131 teachers (88 females and 43 males). Instrument for data collection was Researcher-Designed; a Structured and validated questionnaire with (13) Items titled: Influence of computer literacy on teaching effectiveness in secondary schools (ITCLTESS). The reliability co-efficiency of the instrument was 0.83, determined using the Pearson product moment co-relation co-efficiency (PPMCC) statistics. The research questions were answered using mean and standard deviations, while the t-test was used to test the null hypotheses at 0.05 level of significance. Findings of the study showed: poor computer literacy among Teachers, however, teachers' computer literacy greatly influenced their teaching effectiveness. Based on the findings, the study recommended that government, school management and stake holders should ensure that teachers are compelled to attend training, workshops and seminars on computer education so as to be equipped with the basic computer literacy for effective teaching in the secondary schools.

**KEYWORD:** Computer-Literacy, Effectiveness, Influence, Senior Secondary School, Teachers, Teaching Effectiveness.

## Introduction

Education brings about transformation in every human being; hence Education in Nigeria is a tool for facilitating national development. Therefore, it demands that all stakeholders must ensure the smooth running of the education system in Nigeria in line with global best practices. The senior secondary education is one arm of the educational sectors that can be used to achieve meaningful and sustainable development, Ige, (2011) and Yusuf, (2009). To achieve the set goals at the Senior Secondary School level, many subjects are offered; they include the arts, vocational, social sciences, commercial and sciences (Nlebem, 2011). The achievement of the objectives of the senior secondary school education system as spelt out in the National Policy on Education is expected to reflect in the students overall output which should include high academic performances, skill acquisition amongst others. Thus the extent to which the students achieve these objectives of the senior secondary schooling is dependent on the teacher and his/her job performances.

A teacher is a person who helps others to acquire knowledge, competences or values, Agina-Obu (2018). For a teacher to effect the needed desirable change in the students, he or she is expected to possess some unique characteristics, namely: being caring, helpful, knowledgeable, intelligent and teachable, Hawang (2006) and Money (1992). Teachers' tasks include preparing lessons according to agreed curricula, giving lessons, and assessing pupils' progress, (Ozuzu, et al. 2009).

According to Roberts (2010), Ohuche and Zuwah (1988), Teacher effectiveness requires a deep understanding of the subject matter, learning theories, students' differences, planning classroom instructional strategies, knowing individual students and assessment of students' understanding and proficiency with learning outcomes. It has been established that there is a correlation between what teachers know and what they teach (Mbakwem, 2001). It is based on this assertion that the ability of a teacher to teach effectively depends on the teachers' knowledge of the subject matter, resourcefulness, proficiency in managing the class, commitment to the levels of the profession etc.

A computer is a machine that takes in information, processes it, stores it in a database, and then presents that information to the user in a meaningful way. And Olatundan and Adu (2007). This is particularly true in the academic world, but computers are now ubiquitous. In order for teachers to make good use of computers in the classroom, they need to develop their computer literacy abilities. Mandah, (2016). (2016). Hence, it is essential that educators have a working knowledge of computers in order for schools to function efficiently and to realise their pedagogical objectives. There is no universally accepted definition of computer literacy; hence, researchers provide their own definitions of the term when necessary (Eze Rock, 2011). Below are a few examples of such explanations. "Computer literacy refers to competence with a few of today's comput''er applications such as word processing and e-mails" (Eze Rock and Elekwa, 2012) and Idowu (2001). Thus, based on the above definitions of computer literacy, it can be said that computer literacy can facilitate effective teaching generally. In her own view, Achuonye (2014)' revealed that the computer literacy level of the teachers in the secondary schools are very low. Based on these inconsistencies in the findings of this paper, it becomes necessary for the present study to investigate the level of computer literacy amongst secondary teachers in Obio-Akpo Rivers State.

It was on these bases, the present study intended to investigated problem that militate against teachers acquisition of computer literacy for enhanced teacher teaching effectiveness in senior secondary school. Generally, it was based on the background explained above that the present study will investigate the influence of teachers' computer literacy on teaching effectiveness among Senior Secondary Schools Teachers in Obio-Akpor L.G.A, Rivers State.

There are three primary definitions of teacher effectiveness that have been proposed (Evans, 2006): (1) the teacher's personality, (2) the teacher's interactions with students, and (3) the teacher's influence on students' conduct. Nevertheless, Aregbeyene (2010) in Akanwa and Agomuo (2015) described teachers' efficacy as the process whereby the instructor makes students learning feasible, promotes participation and conversation, concerns and respects students, and maximises students' academic accomplishment. Teacher effectiveness was defined by Victor-Ishikaku (2018) as the degree to which a teacher's instructional activity achieves its stated aims.

Researchers have tried to address the issue of poor teaching by focusing on elements like teacher preparation, emotional intelligence, and the quality of the school's physical space, but their efforts have not had the desired impact. In light of these concerns, the current research will look to empirical evidences to shed light on the impact of instructors' computer literacy on students' learning outcomes.

The study covered all teachers (males and females) in public senior secondary schools in Obio-Akpor Rivers State. It did not include teachers in privately owned schools. The investigation was on ICTs with focal

interest on computers. The study also determined both the level and influence of teacher's computer literacy on their effective teaching in senior secondary school in Obio-Akpor Rivers State. The findings of this study will be of immense benefit to Students, Teachers, School administrators, Policy Makers and Researchers. The findings of this study will encourage the students as it enables them to know the level of their teachers' computer literacy as well the extent, availability and utilization of computers, This knowledge will help to improve the students' academic achievement The result of the study will encourage students' interest and struggles to acquire computer literacy, for the teachers, it will provide them with information on the importance of improving their computer literacy for teaching effectiveness. The school administrators will know the level of their teachers' computer literacy. The knowledge of this information will enable them to know how to improve on their computer literacy towards enhancing their teaching effectiveness. These findings will also enable them to address the issue of recruiting the right and qualified teachers with the needed computer literacy for the effective teaching and encourage their teachers to go for workshops, trainings and seminars as well as computer programs that will equip them with the needed computer literacy. It will aid Government in providing adequate funding and formulate appropriate policies for recruiting the right and qualified teachers with computer literacy

To the Policy Makers, the findings of this study will help them to know the level of teachers' computer literacy, it will enable them to address the issue of formulating policies that will incorporate computer education in the teacher's education programs and also formulate policies where only teachers with computer literacy are employed. The findings will also be of significance to intending researchers, as it will provide them with adequate reference to their study. It will also give them the opportunity to appraise and constructively criticize the study with a view to finding gaps, which their current study will fill. It will give the foundation for further evaluative studies on influence of computer literacy on the effective teaching of senior secondary school teachers.

Specifically, the study purposed to;

1. Determine the level of teachers' computer literacy for effective teaching in Public senior secondary schools in Obio-Akpor, Rivers State.

2. Find out the influence of teachers computer literacy on their effective teaching in Public senior secondary schools in Obio-Akpor, Rivers State.

**Research Questions**

In order to the purpose, following research questions were posed for the study.

1. What is the level of Female and Male teachers' computer literacy in Public senior secondary schools in Obio-Akpor, Rivers State?

2. To what extent does Male and Female teachers' computer literacy influence their effective teaching in senior secondary school in Obio-Akpor, Rivers State?

**Hypotheses**

Two null hypotheses were tested at 0.05 level of significance and at a good degree of freedom

1. There is no significant difference between the mean response of Male and Female Teachers in the level of teachers' computer literacy for effective teaching in senior secondary schools in Obio-Akpor, Rivers State.

2. There is no significant difference between the mean response of Male and Female teachers on the extent teachers' computer literacy have influenced their Teaching effectiveness in senior secondary school in Obio-Akpor, Rivers State.

**Methods:** The study adopted descriptive survey research design. A descriptive survey aims at collecting and describing data in a systematic manner. A descriptive survey became ideal for this study because it required the collection of the opinions of many teachers in schools in Obio- Akpor, about computer literacy. It was on these bases that the descriptive research survey design was considered appropriate for the study.

**Area of the Study:** Obio-Akpor Local Government Area (often abbreviated as OBALGA), in Rivers Stae Nigeria, served as the study's focus. Obio-Akpor is an LGA in the state capital of Rivers and one of the most important cities in the Niger Delta.

The population of the study consisted of; **1,309** Teachers distributed among; **431** males and **878** females in the senior secondary section of the **Twenty (20)** Government owned secondary schools otherwise known as public schools in Obio-Akpor LGA, Rivers State. (Planning Research and Statistics Department, Rivers state senior secondary schools board, February 20th 2019) and Rivers state Ministry of Education, (2017).

**Sample and sampling techniques:** A proportionate sample procedure was adopted to determine Sample size. The sample for the study was done using the purposive random sampling Technique. The simple percentage was used to select the sample. Purposively, the researcher used ten percent of the entire population. Therefore, Ten percent of **1,309** were approximately **131**. Therefore, **131** became the study sample.

**Table 1. Sample Schools selected for the study**

| S/N | Sample Schools | Number of Teachers | 10% Sample Selected | Gender Description |
|---|---|---|---|---|
| 1 | A | 109 | 11 | Mixed |
| 2 | B | 104 | 11 | Mixed |
| 3 | C | 168 | 17 | Mixed |
| 4 | D | 148 | 14 | Girls only |
| 5 | E | 109 | 11 | Boys only |
| 6 | F | 130 | 13 | Mixed |
| 7 | G | 99 | 10 | Mixed |
| 8 | H | 204 | 20 | Mixed |
| 9 | I | 109 | 11 | Mixed |
| 10 | J | 129 | 13 | Mixed |
| | Total | 1,309 | 131 | |

The instrument for data collection was the structured Questionnaire. The Questionnaire instrument was Researcher developed. It was titled the "Influence of Teachers' Computer Literacy on The Teachers Teaching Effectiveness in Secondary Schools" (ITCLTTESS). The instrument contained 13 response items. The Items were structured in line with the Research Questions that guided the entire study; the instrument was structured on a 4-point rating scale of: 1= Very low extent/Strongly disagreed. 2=Low extent/disagreed. 3=High extent/agreed. 4=Very high extent/Strongly Agreed.

**Validation of the Instrument**: The instruments were validated by three professionals which comprised of two from the Department of Curriculum Studies and Educational Technology and one from Educational Measurement and Evaluation. To this extent 13 items in the constructed questionnaire were retained for the final copy of the research instrument.

**Reliability of the Instrument:** The instruments had an overall reliability coefficient of 0.83 which was determined using the measure of reliability of the instrument, as the measure of reliability of the instrument

for the two sections were: 0.82 and 0.83. The measure of reliability of the instrument was determined using the **Test-retest** method.

**Method of Data Analysis:** The scores from the first and second tests were then computed using the Pearson's Product Moment Correlation Coefficient (PPMCC) statistic to determine reliability index of the instrument. The coefficients indicated high reliability. This is in line with Uzoagulu (2011) and Wali (2002) who opined that reliability of any instrument to be used in any educational research must be consistent in measuring what it was designed to measure. The null hypotheses was rejected where the P-value is less than the alpha value of 0.05 while the null hypotheses was retained where the P-value is greater than or equal to alpha value of 0 .05.

**Results**

**Table 2. Numbers of Sampled Teachers and their Sex Differences.**

| S/NO | MALE TEACHERS (%) | FEMALE TEACHERS (%) | TOTAL (%) |
|------|-------------------|---------------------|-----------|
| 1. | 43 (33) | 88 (67) | 131 (100) |

**Research Question One: What is the level of teacher's computer literacy for effective teaching in senior secondary schools in Obio-Akpor, Rivers State?**

**Table 3: The mean and standard deviation rating of the responses of the teachers on the level of teacher's computer literacy for effective teaching in senior secondary schools in Obio-Akpor, Rivers State.**

| S/NO | ITEMS | X S. D Remarks |
|------|-------|----------------|
| 1 | Teachers have adequate knowledge of how to boot and shut down computer. | 2.17 0.83 Low extent |
| 2 | Teachers have knowledge of Microsoft power point and can utilize it for teaching and learning. | 2.07 0.92 Low extent |
| 3 | Teachers have knowledge of CorelDraw and can utilize it for teaching and learning. | 2.05 0.83 Low extent |
| 4 | Teachers have knowledge of Microsoft word and can utilize it for teaching and learning. | 1.79 0.73 Low extent |
| 5 | Teachers have knowledge of Microsoft excel and can utilize it for teaching and learning. | 2.00 0.65 Low extent |
| 6 | Teachers have knowledge of Microsoft assess and can utilize it for teaching and learning. | 1.73 0.72 Low extent |
| 7 | Teachers have basic computer certification and can utilize it for teaching and learning. | 2.12 0.75 Low extent |
| | **Grand Mean** | **1.99 0.78** |

The analyzed data on table 4.1 showed that all 7 items had their mean scores ranged from 1.73-2.17 which were within the real limit of 1.50-2.49 of a 4 point rating scale, as the standard deviation of all the 6 items ranged from 0.65-0.92. This shows that all the 7 items were low.

**Research Question Two: To what extent does teachers' computer literacy influence their effective teaching in senior secondary school in Obio-Akpor, Rivers State?**

**Table 4: The mean and standard deviation rating of the responses of the Teachers on the extent teachers' computer literacy influences their effective teaching in senior secondary schools in Obio-Akpor, Rivers State.**

| S/NO | ITEMS | X̄ S. D Remarks |
|------|-------|----------------|
| 1. | Using Computers in teaching makes lesson planning and presentation easy and correct | 2.90 0.84 High extent |
| 2. | Teachers computer literacy make computation of students faster and easier which enhances adequate feedback mechanism. | 2.90 0.86 High extent |
| 3. | Teachers computer literacy makes the teachers to keep accurate records of students data which enhances effective teaching. | 3.04 0.82 High extent |
| 4. | Teachers use of computers in the teaching and learning process helps to stimulate the student interest in teaching learning process. | 2.86 0.82 High extent |
| 5. | Teachers use of computers enhances effective instructional delivery which enhances students learning capabilities. | 2.88 0.81 High extent |
| 6. | Teachers use of computers to teach the students enhances their academic performances. | 2.77 0.83 High extent |
| | **Grand Mean** | **2.89 0.83** |

The analyzed data on table above showed that all 6 items had their mean scores ranged from 2.77 to 3.04 which were within the real limit of 2.50-3.49 of a 4 point rating scale, as the standard deviation of all the 6 items ranged from 0.81-0.86. This shows that all the 6 items was to a high extent.

**Data Presentation on Null Hypothesis**

**Hypothesis One: There is no significant difference between the mean responses of the male and female teachers on the level of teacher's computer literacy for effective teaching in senior secondary school in Obio-Akpor, Rivers State.**

**Table 5: The t-test analysis of the difference between the mean responses of the male and female teachers on the level of teacher's computer literacy for effective teaching in senior secondary schools in Obio-Akpor, Rivers State.**

| Groups | Number | Mean | S.D | D.F | T.Cal | P.Value | Decision |
|--------|--------|------|-----|-----|-------|---------|----------|
| Male | 43 | 2.12 | 0.72 | 129 | 1.26 | 0.21 | Not Significant |
| Female | 88 | 1.94 | 0.79 | | | | |

The data on table above showed a t-calculated value of 1.26 with a P. value of 0.21 which is greater than 0.05 at 0.05 level of significance. This implies that the null hypothesis was retained.

**Hypothesis Two: There is no significant difference between the mean responses of the male and female teachers on the extent to which teachers' computer literacy influenced the effectiveness of their teaching in senior secondary schools in Obio-Akpor.**

**Table 6:** **The t-test analysis of the difference between the mean responses of the male and female teachers on the extent to which teachers' computer literacy influenced the effectiveness of their teaching in senior secondary schools in Obio-Akpor, Rivers State.**

| Groups | Number | Mean | S.D | D.F | T.Cal | P.Value | Decision |
|--------|--------|------|-----|-----|-------|---------|----------|
| Male | 43 | 3.15 | 0.70 | 121 | 2.52 | 0.13 | Not Significant |
| Female | 88 | 2.77 | 0.86 | | | | |

The data on table 4.9 showed a t-calculated value of 2.52 with a P. value of 0.13 which is greater than 0.05 at 0.05 level of significance. This implies that the null hypothesis was retained.

**Discussion of Findings: The extent of teacher's level of computer literacy for effective teaching in senior secondary schools in Obio-Akpor, Rivers State.** The analysis of research question one revealed that teachers do not have adequate knowledge of how to boot and shut down computers, teachers had very poor knowledge of: Microsoft office power point, Corel draw, Microsoft word, Microsoft excel, Microsoft access and they could not utilize it for teaching and learning activities.

However, the testing of the corresponding null hypothesis revealed that there is no significant difference between the mean responses of the Female and Male Teachers on the extent of teacher's computer literacy for effective teaching. These findings are in agreement with the findings of Alaba, Abimbola, Usman and Odulaja (2014) which revealed that the computer literacy level of the teachers in the secondary schools is very low. On the contrary, the findings disagreed with several authors such as Alarape and Sulaiman (2014); Kuma and D'Souza (2016); and Micheal and Igenewari (2018) whose studies show that teachers at the secondary school level have high level of computer literacy. The findings of the present study was attributed to the fact that most schools in Nigeria are yet to adopt the modern techniques of teaching, it also implies that schools in Obio-Akpor are yet to inculcate adequate computer/ ICT teaching process.

**The extent of influence of teachers' computer literacy on their Teaching effectiveness in senior secondary schools in Obio-Akpor, Rivers State.** The analysis of research question four revealed that to a high extent, using Computers in teaching makes lesson planning and presentation easy and correct, Teachers computer literacy to a high extent makes computation of students academic records assessment grades faster and easier which enhances adequate feedback mechanism. Also to a high extent, teachers' computer literacy makes the teachers to keep accurate records of students' data which enhances effective teaching and teachers' use of computers in the teaching and learning process to a high extent helps to stimulate the student's interest in learning process. Lastly teachers' use of computers to a high extent enhances effective instructional delivery which enhances students learning capabilities. However, the testing of the corresponding null hypothesis revealed that there is no significant difference between the mean responses of the Female and Male teachers on the extent to which teacher's computer literacy influence their effective teaching in senior secondary school in Obio-Akpor. This findings are in agreement with the separate findings of Maisamari, Adikwu, Ogwuche and Ikwoche,(2018) and Oyetunde (2002) who reported that computer literacy influences the teachers job performances positively.

**Summary of findings**

1. Teachers do not have adequate knowledge of how to boot and shut down computers, Microsoft word, power point, Corel draw, Microsoft excel, Microsoft access and they could not adequately utilize it for teaching and learning.

2. Teacher's use of computers to a high extent enhances effective instructional delivery which enhances students learning capabilities.

## Conclusion

Based on the major findings, the researcher concluded as follows: Computer literacy is very imperative to the teachers' teaching effectiveness, thus the extent to which the teachers possess the basic computer literacy will go a long way in the teaching and learning process. On this note, the analyzed data in the study revealed that the teachers possess computer literacy to a low extent and this has negatively influenced their teaching effectiveness. However, teachers' computer literacy influences their effective teaching in senior secondary schools in Obio-Akpor, Rivers State as it aids instructional delivery which is always reflected in enhanced academic performances of students.

**Recommendation:** Based on the findings, the researcher recommended thus;

The government, school management stake holders should ensure that teachers without computer literacy are compelled to attend training, workshops and seminars on computer education so as to be equipped with the basic computer literacy for effective teaching and learning in the secondary schools, as it influences the teachers teaching effectiveness.

**Contributions to knowledge:** Teacher's computer literacy is vital as it positively influences teachers' classroom effectiveness and learners' easy acquisition of desired knowledge. The implication of the findings is that teachers' teaching will continue to be ineffective since the majority of the teachers to a low extent possess computer literacy this is because in contemporary times teachers' computer literacy aids the effective teaching and learning in secondary schools.

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