

## The Impact of Computer Literacy among Secondary School Teachers in Rivers State

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### **Abstract**

*This study assesses the impact of Computer Literacy among Secondary School Teachers in Rivers State. A descriptive survey research design was adopted. The proportionate stratified random sampling techniques was adopted in this study in obtaining 194 teachers in the state owned secondary schools of Obio/Akpor LGA of Rivers State. The reliability coefficient of the instrument was determined using Cronbach Alpha reliability test, with value of 0.84 obtained. The data collected were analysed using frequency count and simple percentage, mean ( $\bar{x}$ ) and standard deviation in answering the research questions, while t-test was used to test the hypotheses at 0.05 level of significance. The findings of this study indicate that the computer literacy level of the secondary school teachers was high, the impact of their computer literacy knowledge was low, and the stated factors affect the computer literacy programme in the state schools. Based on this findings, it was recommended that teachers should use the knowledge of computer in the teaching and learning process, in service training, seminars, workshops and conferences should be organized regularly by professional bodies and government on computer literacy programme, host communities, PTA and government should provide for the schools and teachers with computers and ICT centres, and incentives should be given to teachers to enhance their knowledge on the use of computer in education through soft loans.*

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**Keyword:** *Computer, Computer Literacy, Impact, Knowledge, Education*

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### **Introduction**

During the last decades the government and agencies have invested heavily in the integration of computer in education and information and communication technology (ICT) towards advancing the educational sector. The use of computer has imparted positively in education (teaching methodologies, research and development, information technologies) and other related areas.

Computer literacy is the knowledge and ability to efficiently use computer. It can also refer to the comfort level someone can use the computer and its application in solving specific problem. It involves being able to operate the computer efficiently without an aid and manipulate the software associated with it, Terry (2004) in Nwafor (2015).

Improving education quality is a priority for most developing nations such that policy makers agree that such improvements could lead to structural shifts in productivity and boost long

term economic growth. The use of ICT in the school environment can improve education and human capital development. The use of computer in classroom instruction has transformed teaching and learning, it has improved learning outcome and information sharing. It has supported both the teachers and students for an improvement of the teaching and learning process.

Computer literacy is of great important in education but is faced with numerous problems ranging from lack of fund for the purchase of computer and its accessories, lack of resource personnel's, non-utilization of ICT for the teaching and learning process. Albert (2015) it is against this background that the researcher wishes to investigate the impact of computer literacy among teachers in Rivers State.

### **Statement of Problem**

The integration of computer into the teaching and learning process in Nigeria institutions (nursery, primary, post-primary and tertiary) and Rivers State inclusive is of welcome development toward improvement and advancement of education in line with the global standard. But it would be meaningless if facilities were not provided, resource personnel were not available to operate and maintain them, ICT facilities were available are not used in the teaching and learning process Braide (2015). These problems will affect the positive impact of such technological integration in our schools.

Since the integration of computer and ICT into the Rivers State secondary school system, it is considered as a major tool for the teachers and student for an improved teaching and learning process. The researcher considered it necessary to investigate the impact of such technological innovation computer literacy in our schools as it affects teachers' performance in classroom instruction.

### **Purpose of the Study**

The purpose of this study is to assess the impact of computer literacy among secondary school teachers in Rivers State. Specifically, this study sought to:

1. Determine the computer literacy level of Secondary School teachers in Rivers State.
2. Determine the impact of computer literacy among Secondary School in Rivers State.
3. Find out the factors that affects computer literacy among secondary school teachers in River State.

### **Significance of the Study**

This study will be of great significance to the students, teachers, curriculum planners; ministries of education, government and society at large. This study will contribute towards improvement of computer literacy in the state as well making provision on the impact, benefits as well addressing the challenges of such technological innovations in our schools. School administrators and teachers of secondary schools could also find the result of this study valuable in policy formulation, implementation and importance of being a computer literate.

### **Scope of the Study**

This study focused on assessment of the impact of computer literacy among secondary school teachers in Rivers state. The study covered availability and use of computer in education, computer literacy level in schools, impact of computer literacy in education and factors affecting computer literacy programme in schools and possible solution to the problems affecting computer literacy in schools.

## Research Questions

The following research questions were formulated to guide this study:

1. What is the computer literacy level of secondary school teachers in Rivers State?
2. What are the impacts of computer literacy among secondary school teachers in Rivers State?
3. What are the factors that affect computer literacy among secondary school teachers in Rivers State?

## Research Hypotheses

The following research hypotheses were formulated to guide this study:

**H<sub>01</sub>:** There is no significant difference between the mean response of male and female teachers on the impact of computer literacy on their job performance.

**H<sub>02</sub>:** There is no significant difference between the mean response of male and female teachers on the factors affecting computer literacy among junior secondary school's teachers in Rivers State.

## Discussion

### Computer Literacy

Lulu (2009) defined computer literacy as the ability for an individual to use computer and its technologies efficiently. Computer literacy is considered as the knowledge and ability to utilize computers and related technologies efficiently, with some range of skills covering levels.

Another valuable and important component of computer literacy is knowing how the computer works, how to operate the computer and to solve problems with it. However, computer literate often connotes little more than the ability to use several specific computer application software; usually (Ms Word, Ms Internet Explorer, Ms Excel, Ms PowerPoint, Outlooks) for certain very well defined tasks.

### Computer Literacy in Education

Computer literacy in education entails the use of computer knowledge and skills in the teaching and learning process more especially in the classroom situation. It involves the use of computer and its application in the transmission of knowledge or information.

Jack (2010) stated that computers are parts of education; computers are used in schools for many applications such as writing papers, searching of the internet (browsing) for information, multimedia in education etc. For education to improve; there is need for curriculum implementers (teachers) to be computer literates. Pappiziki, Mitchell and Duckett (1994) in Didi and Wonu (2010) stated that computer literacy involves understanding the computers and related systems, for this scholars' computer literacy meant having the ability to use a computer for practiced purposes.

### Impact of Computer Literacy in Education

Computer literacy has impact positively to the Nigerian education system despite the challenges encountered in course of computer integration in the teaching and learning process in schools (Braide, 2015). The following as some of the benefits and impact of computer literacy in education:

1. It has increased teachers and student's interest and motivation.
2. It has impacted in improvement and advancement of knowledge of the teacher and students through easy access to educational materials and research online.
3. It has helped the teacher and student in self development and training through online programmes, training, etc.

4. It enables online resources like, e-mail, chat, discussion forum and video conferencing, to support collaborative learning and sharing of information.
5. It makes the teaching process easy and lively as well enable independent learning.

### **Factors Affecting Computer Literacy in Education**

Nwafor (2015), outlined the following as factors that affects computer literacy among teachers in Nigeria:

1. Lack of qualified ICT personnel's in the schools.
2. Lack of fund and high cost of computer ICT facilities.
3. Lack of basic amenities such as housing, ICT centres and electricity.
4. Environmental factors.

### **Research Methodologies**

#### **Design of the Study**

The descriptive survey design was adopted for this study.

#### **Area of the Study**

The area under study was Obio/Akpor Local Government Area of Rivers State. This study covered all the Government owned junior secondary schools in Obio/Akpor LGA.

#### **Population of the Study**

The population of this study constitutes of all Government owned junior secondary schools in the area. The population of this study comprises of 1248 teachers of the Government owned junior secondary schools in the area. It comprises of both male and female teachers.

#### **Sample and Sampling Techniques**

The proportionate stratified random sampling techniques were adopted at 16% proportion, considering the population of each school to select 194 teachers out of 1248 teachers for the study.

#### **Instrument for Data Collection**

The instrument for data collection was a researcher made questionnaire titled "Impact of Computer Literacy among Secondary Schools Teachers Questionnaire (ICLASSTQ).

#### **Validation of Instrument**

The instrument was subjected to face validity. The instrument was validated by expert in the Department of Computer Education, Ignatius Ajuru University of Education (IAUE), Port Harcourt.

#### **Reliability of the Instrument**

The Cronbach Alpha ( $r_a$ ) method was adopted to establish the reliability of the instrument to obtain a coefficient of 0.84.

#### **Method of Data Collection**

The researcher administered 194 copies of the instruments and able to retrieve 188 copies, which is a response rate of 97%.

#### **Method of Data Analysis**

The data collected in this study was analysed using simple percentage (%), mean ( $\bar{x}$ ) while T-test were used to test the hypotheses one and two respectively at 0.05 significance levels.

## Presentation of Results

**Research Question 1:** What is the computer literacy level of secondary school teachers in Rivers State?

**Table 4.1:** Mean ( $\bar{x}$ ) and Standard Deviation showing computer literacy level of secondary school teachers in Rivers State.

| S/N | ITEMS   | MEAN ( $\bar{X}$ ) | STANDARD DEVIATION | DECISION  |
|-----|---|--------------------|--------------------|-----------|
| 1   | I can boot the computer                           | 2.60               | 1.01               | Agreed    |
| 2   | I use computer to teach my students               | 1.78               | 0.75               | Disagreed |
| 3   | I use the computer for record keeping             | 2.80               | 1.17               | Agreed    |
| 4   | I use educational software to teach               | 1.95               | 1.16               | Disagreed |
| 5   | I can use a printer, scanner etc.                 | 2.63               | 1.22               | Agreed    |
| 6   | I make use of e-mail                              | 3.00               | 0.89               | Agreed    |
| 7   | I can browse, use search engines to get materials | 2.80               | 1.17               | Agreed    |
| 8   | I can use application packages in teaching        | 2.15               | 0.96               | Disagreed |
| 9   | I browse the internet for information             | 2.60               | 1.36               | Agreed    |
| 10  | I can setup a multimedia projector                | 1.99               | 1.02               | Agreed    |

N=188

Table 4.1 shows the computer literacy level among junior secondary school teachers in Obio/Akpor LGA of Rivers State.

From the result in table 4.1 it indicates that the teachers agreed with items 1, 3, 5, 6, 7, 9 and 10 which show that the junior secondary school teachers are computer literate. Therefore, the computer literacy level of the teacher is higher than the computer illiterate teachers.

Items 2, 4, and 8 indicate low level knowledge of computer and its application in the teaching process.

**Research Question 2:** What are the impacts of computer literacy among secondary school teachers in Rivers State?

**Table 4.2:** Simple Percentage (%) showing the impact of computer literacy among secondary school teachers in Rivers State.

| S/N | ITEMS  | FREQUENCY |           |
|-----|--|-----------|-----------|
|     |  | YES(%)    | NO(%)     |
| 1   | The use of computer has increased my interest in teaching                    | 74(39.4)  | 114(60.6) |
| 2   | Been computer literate motivated me in this profession                       | 76(42.0)  | 109(58.0) |
| 3   | Been computer literate has improved my job performance                       | 75(39.9)  | 113(60.1) |
| 4   | The use of interactive board has supported my teaching job                   | 38(20.2)  | 150(79.8) |
| 5   | Been computer literate has helped me in self development                     | 112(59.6) | 76(40.4)  |
| 6   | The knowledge of the subject taught has advanced through the use of computer | 113(60.1) | 75(39.9)  |
| 7   | The use of computer has made teaching more interesting and easy              | 86(45.7)  | 102(54.7) |

|    |  |          |           |
|----|--|----------|-----------|
| 8  | The use of computer has granted me easy access to instructional material           | 79(42.0) | 109(58.0) |
| 9  | The use of computer has assisted me in production of Audio Visual Aids in teaching | 75(39.9) | 113(60.1) |
| 10 | I use the computer to source for instructional materials through e-library         | 76(40.4) | 112(59.6) |

Table 4.2 indicates that 60% of the teachers disagreed that the use of computer has increased their interest in teaching while 40% agreed. 58% disagreed that been computer literate motivates them in their profession while 42% agreed. 60% of the respondents disagreed that been computer literate has improved their job performance, while 40% agreed. 79.8% disagreed that the use of interactive board has supported their teaching job while 20.2% agreed to that. 59.6% agreed that been computer literate has helped them in self-development, while 40.4% disagreed. 60.1% agreed that knowledge of the subject taught has advanced through the use of computer while 39.9% disagreed. 54.3% disagreed that the use of computer has made teaching more interesting and easy, while 45.7% agreed. 58% of the respondents disagreed that use of computer has granted them easy access to instructional materials, while 42% agreed. 60.1% disagreed that the use of computer has assisted in the production AVA in teaching, while 39.9% agreed. 59.6% disagreed that they use the computer to source for instructional material through e-learning, while 40.4% agreed. From the result, it indicates that 50% and above disagreed while 49% and below agreed. From the result of the findings, it indicates that majority disagreed with the items. It implies the impact of computer literacy among junior secondary school teachers in Rivers State was low.

**Research Question 3:** What are the factors that affect computer literacy among secondary school teachers in Rivers State?

**Table 4.3:** Mean ( $\bar{x}$ ) and Standard Deviation (SD) showing the factors that affects computer literacy among secondary school teachers in Rivers State.

| S/N | ITEMS   | MEAN ( $\bar{X}$ ) | STANDARD DEVIATION | DECISION  |
|-----|---|--------------------|--------------------|-----------|
| 1   | Teachers were not accessed to computers                             | 2.55               | 0.89               | Agreed    |
| 2   | Lack of fund for the purchase of computer                           | 3.10               | 1.02               | Agreed    |
| 3   | Lack of qualified IT personnel's in schools (Computer Professional) | 2.80               | 1.16               | Agreed    |
| 4   | High cost of computers and its accessories                          | 2.65               | 1.05               | Agreed    |
| 5   | Lack of power supply (electricity)                                  | 2.61               | 1.22               | Agreed    |
| 6   | Lack of ICT centres and internet in schools                         | 1.39               | 1.02               | Disagreed |
| 7   | Lack of security in schools and its environment                     | 1.79               | 0.75               | Disagreed |
| 8   | Teachers are not willing to learn, how to use computer              | 1.39               | 1.02               | Disagreed |
| 9   | Lack of IT workshops, seminars and training                         | 3.29               | 0.76               | Agreed    |
| 10  | Bad government and policies affects computer literacy programme     | 2.51               | 1.18               | agreed    |

Table 4.3 shows that the result of the factors affecting computer literacy among secondary school teachers in Rivers State. The result indicates that item serial no 6, 7 and 8 were not factors affecting computer literacy among junior secondary school teachers in Rivers State while item serial no 1, 2, 3, 4, 5, 9 and 10 are factors that affects computer literacy among junior secondary school teachers in Rivers State.

### Hypothesis 1

**Ho<sub>1</sub>:** There is no significant difference between the mean response of male and female teachers on the impact of computer literacy on their job performance.

**Table 4.4:** T-test analysis showing the mean response of male and female teachers on the impact of computer literacy on their job performance in Rivers State

| Gender | N   | $\bar{X}$ | SD   | DF  | T-Cal | T-Crit | Sig |
|--------|-----|-----------|------|-----|-------|--------|-----|
| Male   | 75  | 15.20     | 2.60 | 186 | 37.2  | 1.98   | S   |
| Female | 113 | 33.10     | 3.58 |     |       |        |     |

Result from table 4.4 indicates a significant difference as the calculated t-value of 37.2 is greater than the t-critical values of 1.98 at  $df = 186$  at 0.05 alpha level. There is a significant difference between male and female teachers mean responses on the impact of computer literacy on their job performance. The implication is that the male and female teachers have a different view on the impact of computer literacy on the job performance.

### Hypothesis 2

**Ho<sub>2</sub>:** There is no significant difference between the mean response of male and female teachers on the factors affecting computer literacy among junior secondary school teachers in Rivers State.

**Table 4.5:** T-test analysis showing the mean response of male and female teachers on the factors affecting literacy in junior secondary schools in Rivers State.

| Gender | N   | $\bar{X}$ | SD   | DF  | T-Cal | T-Crit | Sig |
|--------|-----|-----------|------|-----|-------|--------|-----|
| Male   | 75  | 30.74     | 2.00 | 186 | 18.44 | 1.98   | S   |
| Female | 113 | 23.07     | 3.20 |     |       |        |     |

N = 188 P> .05, S = Significant

Result of the findings indicates that there is a significant difference between the mean response of male and female teachers on the factors affecting computer literacy in secondary schools in Rivers State. Therefore, the null hypothesis Ho<sub>2</sub> is rejected. The calculate t-value (18.44) is greater than t-critical (1.98),  $p < 0.05$ . it implies that the male and female teachers have a divergent view on the factors affecting computer literacy in their schools.

### Discussion of Findings

The finding of the study indicates that the computer literacy level among secondary school teachers in Rivers State is higher than the computer illiterate teachers. This result contradicts that of Jack (2010) who stated that there is low level of computer literacy among teachers in Ahoada East local Government Area of Rivers State. This contradiction could be attributed to some advancement in technology and geographical location of the previous research schools.

The finding of this study indicates that the impact of computer literacy among secondary school teachers in Rivers State is very low. From the finding, it indicates that the teachers

were computer literate but did not use their computer literacy knowledge in the teaching process rather personal use such as self-development and subject taught advancement purposes.

The finding of this study indicates seven (7) out of the ten (10) items in research table 4.3 agreed that these are factors affecting computer literacy among teachers in Rivers State. The result indicates that teachers were not accessed to computer, lack of fund, lack of qualified IT personnel's, high cost of computer and its accessories, lack of power supply, lack of IT workshop, seminars and training and bad government policies are factors that affects computer literacy programme among teachers in Rivers State.

From the findings of this study it was found out that there was a significant difference between the mean response of male and female teachers on the impact of computer literacy on their job performance. The null hypothesis ( $H_{01}$ ) was rejected because the calculated t-value (37.2) was greater than the critical t-value (1.98).

From the findings of this study it was found out that there was a significant difference between the mean response of male and female teachers on the factors affecting computer literacy in secondary schools in Rivers State. The null hypothesis ( $H_{02}$ ) was rejected because the calculated t-value (18.44) is greater than the critical t-value (1.98).

### **Conclusion**

Based on the findings of this study, the following conclusions were made:

- The computer literacy level among secondary school teachers in Rivers State is high. However, it was observed that majority of the teachers are computer literates.
- Although the majority of teachers are computer literate but the impact of computer literacy among the teachers is very low. However, it was observed that the teachers were computer literates but did not use the computer knowledge in the teaching process.
- It was observed that majority of these factors are responsible for the failure of the computer literacy programme among teachers in secondary schools in Rivers State.
- It concluded that there is a significant difference between the mean response of male and female teachers on the impact of computer literacy on their job performance.
- It is concluded that there is a significant difference between the mean response of male and female teachers on the factors affecting computer literacy in secondary schools in Rivers State.

### **Recommendation**

Based on the findings of this study, the following recommendations were made:

- Teachers should use the knowledge of computer in the teaching and learning process instead of personal use only.
- In-service training, seminars, workshops and conference should be organised by the government and professional bodies like Teachers Registration Council of Nigeria (TRCN), Nigeria Union of Teachers (NUT), computer institutes, etc. on computer literacy programme.
- Government, host communities and Parent Teacher's Associations should provide the teachers with computers and ICT centres for effective job delivery.
- Incentives should be given to teachers to enhance the knowledge in the use of computer in education through soft loans.



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