

# **T**EACHERS' INTERNET SKILLS FOR EFFECTIVE TEACHING AND LEARNING IN PUBLIC SECONDARY SCHOOLS IN RIVERS STATE

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## **ABSTRACT**

**T**he study investigated teachers' internet skills for effective teaching and learning in public secondary schools in Rivers State. The research design used in the study was descriptive survey. The population of the study is 7,952 which consisted of 6,893 female teachers and 1,059 male teachers in public secondary schools in Rivers State. The sample technique adopted was stratified random technique and sample size of 700 was obtained. Out of the 700 copies of questionnaires distributed, 600 copies were duly completed and returned. The study used the returned copies for its analysis. The Instrument for data collection was questionnaire. The questionnaire coded Internet Skill Needs of Teachers for Effective Teaching and Learning Questionnaire (ISNTETLQ) with

## **Introduction:**

In the digital age, most classrooms in schools across developed or even in some developing countries are expected to have access to the internet. In fact, there are some teachers that use the internet with each assignment. This is a big change from the way learning in the classroom is changing in the 21<sup>st</sup> century. While it does have its challenges and limitations, there are also a lot of benefits to having the internet in the classroom. Internet can enhance

12 items. The 4-point Likert Scale was adopted indicating Very High Extent (VHE) with 4 points, High Extent (HE) with 3 points, Low Extent (LE) with 2 points and Very Low Extent (LVE) with 1 point. To ensure the validity of the instrument face and content validity was ensured the researcher's supervisor and two other experts in the department of Educational Management, Ignatius Ajuru University of Education Port Harcourt. Their observations and comments were used to improve on the instrument. Reliability of the instrument was obtained via Crombach Alpha at .981 > .71 which showed that the instrument was highly reliable. Mean and Standard deviation was used in answering the research questions at the mean benchmark of 2.5. The independent sample t-test was used in testing the hypotheses at .05 significance level to test the null hypotheses. The study concluded that search skills would enhance teacher skill for effective teaching and learning. Teachers are expected to be drilled and knowledgeable in various internet search skills. Communication skill which include the ability of the teacher to apply accompanying devices or facilities to the internet will enhance teaching and learning effectiveness. Internet skill if imbibed can also be used in assessing students in assignment, tests, exams for effective teaching and learning. The study recommended among others that management of public secondary schools in Rivers state should embark on training and retraining of teachers in communication skills of the internet.

**Keywords:** Teachers' Internet Skills, Effective, Teaching, Learning.

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Teaching performance by using it to find or solve difficult problems. Get answers to difficult issues by using the Google or other search application. Messages can be transmitted electronically within an office (intranet) as well as around the universe (Internet, or Net). Workers are able to exchange information over the computer via the Net through e-mail. E-mails can be sent simultaneously to many individuals around the world. The intranet is an internal computer network that is used within a company, whereby pertinent information such as telephone directories, calendars of events, procedure manuals, job postings, and human

resources information can be posted and updated. With the intranet, one is able to communicate online with individuals within a designated work environment Nweke, (2017).

The Internet is a global computer network that permits millions of computers around the world to communicate via telephone systems and other communication lines. It is also known as the digital information super-highway and is a part of the World Wide Web. With the Internet one can communicate to anyone online throughout the world. The Internet is a public worldwide computer network full of information comprising interconnected networks that span the globe.

Owen, (2013) identified the following skill areas where teachers can apply internet in teaching and learning activity, search skill, communication skill, e-assessment rating skills.

Having the internet in classrooms can also help teachers avoid communication mishaps. When messages and information are shared digitally, misplaced notes and lost assignment sheets become a thing of the past. The internet can also improve class community and camaraderie by facilitating communication outside of the classroom.

Class websites or blogs can give students the ability to download assignments and materials, talk with other students, and share their work. Email and messaging can also make it easier for students to ask questions after hours, instead of having to wait until the next day and risk forgetting the question. The E-rate program provides discounts to eligible schools and libraries for internet services, hardware and network equipment, cabling, and the IT (Information Technology) support needed to keep it functioning. This enables teachers to assess students online, when in the classroom or at home.

### **Statement of the Problem**

It has become obvious that traditional teaching practices no longer provide teachers, and students in public secondary schools adequate information required of the present age. It is no longer a secret that internet tools are

widely used at all levels of education including secondary schools in developed and under-developed countries. However, it has been observed that most public secondary schools around us are yet to take maximum advantage of internet. Most teachers in our secondary schools in Rivers State lack skills such as search skills, e-assessment skills, and internet communication skills. There are inadequate training opportunities for teachers in the use of internet in a classroom environment. The internet facility if properly harnessed appears to have the tendency of enhancing teaching and learning process. This study is therefore to investigate why elaborated issues of lack of internet skills are prevalent in public secondary schools in Rivers State, and to proffer solution to such issues.

### **Aim and Objectives of the Study**

The aim of the study was to investigate teachers' internet skills need for effective teaching and learning in public secondary schools in Rivers State; with the following specific objectives:

1. To determine how search skills of teachers enhances teaching and learning in public secondary schools in Rivers State
2. To investigate how communication skills of teachers enhances teaching and learning in public secondary schools in Rivers State.
3. To find out how e-rate assessment skills of teachers enhances teaching and learning in public secondary Schools in Rivers State.

### **Research Questions**

The following research questions guided the study:

1. To what extent does search skills of teachers enhance teaching and learning in public secondary schools in Rivers State?
2. To what extent does communication skills of teachers enhance teaching and learning in public secondary schools in Rivers State?
3. To what extent does e-rate assessment skills of teachers enhance teaching and learning in public secondary Schools in Rivers State?

### **Null Hypotheses**

The following null hypotheses guided the study:

1. There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.
2. There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.
3. There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent e-rate assessment skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State.

### Conceptual Clarifications

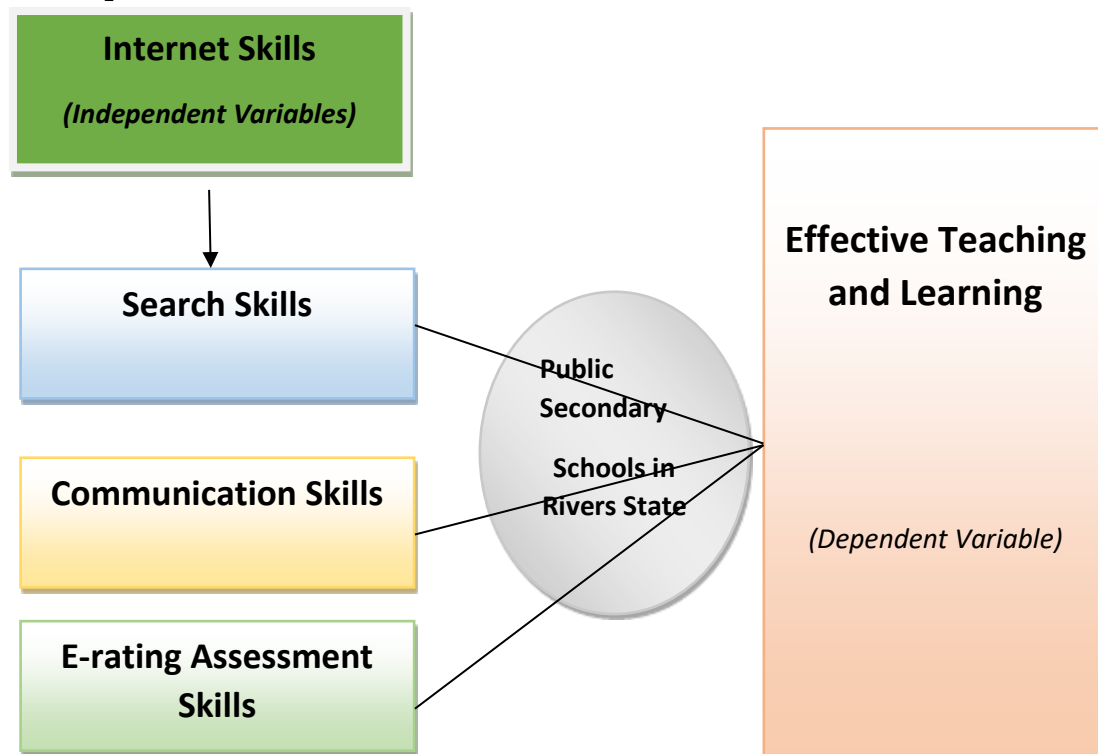


Fig. 1: Researchers' Guide, 2022

The concept of Internet in Teaching and Learning

Internet as defined by Padura (2010) as the transmission or communication exchange among computers, through a network system. The importance of Internet is quite evident from the teaching and learning perspective. Though the chalkboard, textbooks, radio/television, and film have been used for educational purposes over the years, none has quite impacted the educational process like the computer. The main purpose of internet consists just in the development of human mental resources, which allow people to both successfully apply the existing knowledge and produce new knowledge. With the rapid growth of the internet, many educational institutions began to use the internet as a new medium to assist the teaching, research, and many activities.

Using the internet in teaching and research makes the communication between the students and the teacher more convenient and interesting. Especially, using the web in teaching and research makes it available for the students who prefer or require learning outside the classroom to study at their convenient time and space. The web has already been one of the most popular media for delivering of the course information (Sander, 2010). Furthermore, because of the attractive characteristics of the internet, some Engineering level teachers are trying to use the web to assist in interactive teaching, research and learning in recent years. The use of the internet for interactive teaching and learning is relatively recent. The first materials appeared in the early 1990s. The impact, however, has been considerable, mainly because the technology has advantages over the previous generations of computers (Ukonu, 2012).

### **Search Skills and Teaching and Learning**

The improvement in technology and its wide acceptance has influenced the use of online information resources greatly. Since students have access to trending technological gadgets such as smart phones, tablets, laptops and desktop computers connected to the internet, their use of internet have increased. The high rate use is facilitated by the competitive nature of internet providers which led to the reduction in the cost of data in Nigeria. Among other things, students use internet to search information materials



online for academic, social, business and personal development. This calls for greater use of internet by teachers since their students are already regarded as computer or internet dwellers, in other words, digital citizens (Yeroku, 2015).

Open access to e-journals and literature will enhance utilization of library information resources and enrich education. Besides, e-journals, online databases are vital in modern day research in the universities. Online databases are usually collections of e-journals and e-books provided by libraries in order to ensure cost effective access to these e- resources to the end-users. The most effective way to provide access to electronic books/journals in schools is through subscription to online databases which can be accessed through the internet. Online databases are a collection of electronic information sources by publishers from various fields and disciplines (Brcuh, 2007). For students to utilize the growing range of electronic resources they must acquire and practice the skills necessary to exploit them (Okello-Obura, 2010). CD-ROM databases allow users access to relevant databases without robust Internet connectivity in libraries. Besides, CD-ROM databases are of immense value over print if the system is networked, as patrons at their terminals could access information without coming to the library. CD-ROM databases are important tools for identifying the bibliographic details of potentially useful documents and ensure easy access to large volumes of literature for utilization.

However, even if materials are made available without teaching the students how to access and use it, it will remain useless. This was in line with the assertion of Wozar and Worona (2013) in their conclusion of a research conducted on the use of online information resources by nurses. The discussions of online database usage begin with the assumption that an individual teacher will naturally want to conduct his or her own search for improved teaching. Providing quick and easy access to online information resources is the primary concern as accessing online information resources could be jeopardized by lack of necessary search

skills needed to access such materials. This could make some students conclude that the information they are looking for is not online.

As writing materials grew in number, need for libraries to acquire, organize, process, preserve and systematically arrange information materials for easy retrieval of users increased also. Different libraries use different classification schemes such as Library of Congress, Dewey Decimal, Universal Decimal, Bliss, Colon to mention but a few. All these have their unique ways of arranging materials with alphabet and numerals. The most recent of the aforementioned is Machine Readable Code (MARC) used for cataloging of online materials. This contemporary way of relaying information requires training of users on how materials are organized in order to achieve the objective of the library which is to save users' time. Such training is called search skills. Search skill is the ability to recognize the way materials are organized and how to retrieve such materials without hindrances. Search skill is necessary for users both in traditional library arrangement and the modern one which involves the use of technology.

The transition from print to electronic medium apart from resulting in an increase in electronic information also provides users with new tools and application for information-seeking and retrieval (Bayair, 2011). In this 21<sup>st</sup> century, teachers need to develop certain technological skills to remain relevant in their field of teaching. Such skills as highlighted by Meredith (2016), are ability to embrace change, troubleshoot new technologies, easily learn new technologies, keep up with new ideas in technology question and evaluate teaching services, criticize and compare technologies, evaluate the needs of all stakeholders, vision to translate traditional teaching services into the online medium, critic and compare of technologies, sell ideas/services, project management skills and being comfortable in the online medium that is to be able to search and use online information without hitch. Searching instruction should include both offline and online components and should be conducted with secondary school students based on the experience level of the students and knowledge base of the teacher (Ademola, 2012).



### Communication Skills and Teaching and Learning

This type of communication is also great for both teachers and parents who can receive updates and reminders digitally. Instead of having to dig through their kid's backpack after school to make sure they haven't missed an important note from the teacher they can just check their email or class website (Berlin, 2012). Nweke (2018) asserted that internet communication would mean the ability to communicate using the internet technology, the skill of using office application and the knowledge of activation of internet apps to pass meaningful message.

It is well documented that students have different learning styles. Access to assignments online after hours can give students the ability to complete assignments on their own timetable. Having a way for students to study or submit assignments from home can greatly help students who suffer from test anxiety or have difficulty concentrating in a busy classroom (Campbell, 2011).

The indispensability of communication in contemporary teaching and learning has created the imperativeness to have a clear understanding of what ICTs mean as a concept. Conrad (2002) defined internet communication as the marriage of the computer and telecommunications. It is an operation that is not possible without the combination of the computer and telecommunication. Wangwe (2007) referred digital communication as a myriad of stand-alone media including telephone and mobile phones, radio, television, video, tele-text, voice information system and fax as well as computer-mediated networks that links a personal computer to the internet. Wangwe further stated that communication is an integrated system that incorporates the technology and infrastructure required to store, manipulate, deliver and transmit information. Students should be able to be taught how to use technology to write and pass external examination. They are not to suffer shock upon seeing laptops for the first time in JAMB or similar examinations (Nweke, 2018).

Blackmore (2009) responded to this by saying that a central component and the major fuelling force for globalization is information and communication technologies. To him, globally the nature of teaching

and learning is changing rapidly due to the increasing interaction from more accessible global telecommunication networks or the content of the internet. He also maintained that with the increase in information and communication technologies, there is rise in the learning opportunities beyond the traditional "book-teacher model". New options for distance education are driving the shift from traditional learning communities (Schools, colleges and universities) towards unrestricted lifelong learning possibilities. To him, the shift from teacher- centered to learner-centered learning means that teachers at all levels need to embrace new information and, communication technologies. Education needs to keep on with the advances of new technologies. As new technologies are being accepted as the catalyst for learning environment, access to communication has become crucial.

### **E-Rating Assessment Skills and Teaching and Learning**

The Internet or the World Wide Web is indeed a wonderful and amazing addition in the world. The internet can be known as a kind of global meeting place where people from all parts of the world can come together. It is a service available on the computer, through which everything under the use is now at the fingertips of anyone who has access to the internet. The use of the internet as an educational medium is now rapidly expanding (Jegade, 2002).Information can be collected through internet; a lot of information of different types is sorted on the web server on the internet. This means that billions of websites contain different information in the form of text and pictures. One can easily collect information on every topic of the world. For this purpose, special websites, called search engines are available on the internet to search information on any topic around the world. Users can search for job online using the internet facilities, most of the organizations or departments around the world advertise their vacancies on the Internet.

Also, internet facilities help to promote assignments online. Communication is easy through the help of internet facilities; one can communicate with the other through internet around the world. Different

services are provided on the internet such as chatting, video conferencing, email, internet telephony and others. Internet serves as a market place where social needs and textbooks can be purchased. Along with getting information on the internet, one can also shop online. There are many online stores and sites that can be used to look for products as well as buying them using credit cards (Lakshminyanan, 2010). Computer technologies have been viewed as important educational tools and will continue to enhance the learning process. It helps to foster students' interest, promote students' commitment to learning, arouses students' interest and promotes distance learning and delivering tests and assignments without anxiety (Ken-Makuako, 2020).

Teachers were asked the degree to which they used computers or the Internet to prepare for and manage their classes. In a study by Bruce, (2005), younger teachers are more likely to use computers or the Internet to accomplish various teaching objectives. Teachers with 9 or fewer years of teaching experience were more likely than teachers with 20 or more years of experience to report using computers or the Internet "a lot" to communicate with colleagues (30 percent with 3 or fewer years, 30 percent with 4 to 9 years, versus 19 percent with 20 or more years) and gather information for lessons (21 and 22 percent versus 11 percent for the same three groups). Also, teachers with 4 to 9 years of teaching experience were more likely to report they used computers or the Internet "a lot" to create instructional materials (47 percent) than were teachers with 20 or more years of experience (35 percent).

The purpose of internet technology in teacher training programs is to provide pre-service teachers capability of integrating computer technologies into the Curriculum and instructional/student assessment activities in classrooms (Berlin, 2019). This training will assist pre-service teachers integrate ICTs more effectively into their teaching. They should also be persuaded to spend time using this technology so that it will be part of them. Internet is free for all and allows individual to access information online if only one has a system, media literacy and smooth flow of network service. There is obvious difference in the use of internet facilities between

the male and female preservice teachers. Most female students have less computer experience on internet and most public cafes have higher population of male than female; majority of female tends to visit social sites like face book, yahoo, tweeter and dating sites whenever they have opportunity to access the internet. Recent studies have posited that there remains a gender imbalance, despite a significant growth in ICT sector in recent years (Conrad, 2011). This gender imbalance has been partly blamed for both the shortage of qualified ICT professionals and the under representation of some segments of the population, mostly females (Burger, 2010). Previous studies have stated that there is an urgent need to get women involved in the use of ICTs both as literate users and as professionals.

Internet facilities help to connect learners, teachers, educators, scholars, researchers, scientist, artists and industrialists to any individual who enrich learning process. Through internet, students register and do examination online, it gives students greater opportunities or motivation to appreciate, learn perfectly with their environment. They also learn more on internet which make them have current knowledge about the world around them. Pre-service teachers who can use the internet properly always have more experience in their area of specialization which makes them qualified and competent in their field. Internet is a veritable tool which makes individual fit in the global arena, organization and institutions.

### **Methodology**

The research design used in the study was descriptive survey. The opinion of male and female teachers-were surveyed and used to describe the existing phenomena and variables under investigations.

The population of the study is 7.952 which consisted of 6,893 female teachers and 1,059 male teachers in public secondary schools in Rivers State. (Source: planning, research statistics department, RSSSB, Headquarters, Port Harcourt 25/01/2022).

The sample technique adopted was stratified random technique in which six schools from the three senatorial districts in Rivers state giving a total of 18 schools and 38 teachers across chosen across 18 LGAs in the three Senatorial District. A total of 38 \* 18 gave total of 700 was the study adopted as sample size and about 10% of the entire population. Out of the 700 copies of questionnaires distributed, 600 copies were duly completed and returned. The study used the returned copies for its analysis.

The Instrument for data collection was questionnaire. The questionnaire coded Internet Skill Needs of Teachers for Effective Teaching and Learning Questionnaire (ISNTETLQ) with 12 items. The 4-point Likert Scale was adopted indicating Very High Extent (VHE) with 4 points, High Extent (HE) with 3 points, Low Extent (LE) with 2 points and Very Low Extent (LVE) with 1 point.

To ensure the validity of the instrument face and content validity was ensured the researcher's supervisor and two other experts in the department of Educational Management, Ignatius Ajuru University of Education Port Harcourt. Their observations and comments were used to improve on the instrument. Hence, the instrument was considered valid and therefore used for the study.

The test of reliability was done using Independent t-test and obtained as below:

### Reliability Statistics

| Crombach Alpha. | N of Items |
|-----------------|------------|
| .981            | 12         |

Mean and Standard deviation was used in answering the research questions at the mean benchmark of 2.5. The independent sample t-test was used in testing the hypotheses at .05 significance level to test the null hypotheses.

### Results

**Research Question 1:** To what extent does search skills of teachers enhance teaching and learning in public secondary schools in Rivers State?

**Table 1:** Extent search skills of teachers enhances teaching and learning in public secondary schools in Rivers State

| SN | Items  | Female Teachers (400) |             | Male Teachers (200) |             | N =(600)    |             | SD        | Remark |
|----|--|-----------------------|-------------|---------------------|-------------|-------------|-------------|-----------|--------|
|    |  | $\bar{X}$             | SD          | $\bar{X}$           | SD          | $\bar{X}$   | $\bar{X}$   |           |        |
| 1  | I have understanding of search engines   | 3.33                  | 1.23        | 3.78                | 1.15        | 3.66        | 1.16        | VHE       |        |
| 2  | I understand and use browsers  | 2.21                  | 1.24        | 2.31                | 1.20        | 2.36        | 1.20        | LE        |        |
| 3  | Searches are done to enrich information  | 2.74                  | 1.35        | 2.86                | 1.23        | 2.80        | 1.24        | HE        |        |
| 4  | Searched information are used to improve lesson notes and other academic items | 2.43                  | 1.33        | 2.24                | 1.28        | 2.34        | 1.28        | LE        |        |
|    | <b>Grand mean</b>  | <b>2.81</b>           | <b>3.17</b> | <b>2.91</b>         | <b>3.21</b> | <b>2.78</b> | <b>0.79</b> | <b>HE</b> |        |

Table 1 above showed in item 1 total mean score of 3.66 and SD 1.16 which showed very high extent that respondents have understanding of search engines. In item 2 total mean score of 2.36 and SD 1.20 showed low extent that respondents understand and use browsers. In item 3 mean score of 2.80 and SD 1.24 showed low extent that searches are done to enrich information. In item 4 total mean score of 2.34 and SD 1.28 showed low



extent that Searched information are used to improve lesson notes and other academic items.

Thus mean set score of  $2.78 > 2.5$  showed high extent that search skills of teachers enhances teaching and learning in public secondary schools in Rivers State.

**Research Question 2:** To what extent does communication skills of teachers enhance teaching and learning in public secondary schools in Rivers State?

*Table 2: Extent communication skills of teachers enhances teaching and learning in public secondary schools in Rivers State*

| SN | Assessed items  | Female Teachers (400) |             | Male Teachers (200) |            | N=(600)     |             | SD        | Remark |
|----|---|-----------------------|-------------|---------------------|------------|-------------|-------------|-----------|--------|
|    |   | $\bar{X}$             | SD          | $\bar{X}$           | SD         | $\bar{X}$   | $\bar{X}$   |           |        |
| 5  | I use MS application efficiently                                      | 3.23                  | 1.05        | 3.10                | 1.13       | 2.17        | 1.13        | LE        |        |
| 6. | My ability to use office applications enhances my use of the Internet | 3.38                  | 1.11        | 2.88                | 1.19       | 2.13        | 1.19        | LE        |        |
| 7. | I send emails to students with ease                                   | 2.95                  | 1.12        | 2.88                | 1.24       | 1.92        | 1.24        | VLE       |        |
| 8. | I use other internet based apps to communicate to students            | 2.88                  | 1.13        | 3.00                | 1.23       | 2.94        | 1.23        | HE        |        |
|    | <b>Grand mean</b>   | <b>3.02</b>           | <b>0.28</b> | <b>3.00</b>         | <b>0.1</b> | <b>2.48</b> | <b>0.91</b> | <b>LE</b> |        |

Table 2 above showed in item 5 total mean score of 2.17 and SD 1.13 which showed that low extent that respondents MS application efficiently. In item 6 total mean score of 2.13 and SD 1.19 showed low extent that respondents have the ability to use office applications enhances my use of the Internet. In item 7 mean score of 1.92 and SD 1.24 showed very low extent that respondents send emails to students with ease. In item 8 mean score of 2.94 and SD 1.23 showed high extent that respondents use other internet based apps to communicate to students.

Thus mean set of  $2.48 < 2.5$  showed low extent communication skills of teachers enhances teaching and learning in public secondary schools in Rivers State.

**Research Question 3:** To what extent does e-rate assessment skills of teachers enhance teaching and learning in public secondary Schools in Rivers State?

*Table 3: Extent e-rate assessment skills of teachers enhance teaching and learning in public secondary Schools in Rivers State*

| SN  | Assessed items                              | Female Teachers (400) |             | Male teachers (200) |            | N = 600     |             | Remark |
|-----|---|-----------------------|-------------|---------------------|------------|-------------|-------------|--------|
|     |   | $\bar{X}$             | SD          | $\bar{X}$           | SD         | $\bar{X}$   | SD          |        |
| 9   | Students do assignments online              | 2.35                  | 1.14        | 2.22                | 1.16       | 2.29        | 1.16        | LE     |
| 10  | Tests are done using internet.              | 2.40                  | 1.20        | 2.35                | 1.19       | 2.38        | 1.19        | LE     |
| 11  | Corrected assignment are returned via email | 2.20                  | 1.21        | 2.15                | 1.22       | 2.18        | 1.22        | LE     |
| 12. | Students are assessed using online apps     | 2.11                  | 1.22        | 2.15                | 1.21       | 2.11        | 1.20        | LE     |
|     | <b>Grand mean</b>                           | <b>2.23</b>           | <b>0.10</b> | <b>2.38</b>         | <b>0.1</b> | <b>2.30</b> | <b>0.72</b> |        |

Table 3 above showed in item 9 total mean score of 2.29 and SD 1.16 which showed low extent that Students do assignments online. In item 10 mean score of 2.38 and SD 1.19 equally showed low extent that Tests are done using internet. In item 11 mean score of 2.18 and SD 1.22 showed low extent that that corrected assignment are returned via email. In item 12 mean score of 2.11 and SD 1.20 showed low extent that students are assessed using online apps.

Thus mean set of score of 2.30 < 2.5 showed low extent e-rate assessment skills of teachers enhance teaching and learning in public secondary Schools in Rivers State

### Test of Hypotheses

**Ho1:** There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.

*Table 4: T-test of the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.*

|       |                    | t-test for Equality of Means |         |                    |                    |                             |   |         |
|-------|--------------------|------------------------------|---------|--------------------|--------------------|-----------------------------|---|---------|
|       |                    | T                            | Df      | Sig.<br>(2-tailed) | Mean<br>Difference | Std.<br>Error<br>Difference | 95% Confidence<br>Interval of the<br>Difference |         |
|       |                    |                              |         |                    |                    |                             | Lower   | Upper   |
|       | Male<br>Teachers   | 2.481                        | 599     | .000               | 3.98999            | 1.58386                     | .81343  | 7.04655 |
|       | Female<br>Teachers | 2.445                        | 273.813 | .000               | 3.92999            | 1.60735                     | .76566  | 7.09432 |
| Total |                    |                              |         | .000               |                    |                             |   |         |

Table 4 above shows a mean difference of .60000 for both male and female teachers, t-value difference of 0.936 and p-value of  $.000 < .05$  which shows that there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State. The null hypothesis is therefore rejected.

**Ho2:** There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.

*Table 5: T-test difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State*

|       |                 | T     | Df      | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |         |
|-------|-----------------|-------|---------|-----------------|-----------------|-----------------------|---|---------|
|       |                 |       |         |                 |                 |                       | Lower                                     | Upper   |
|       | Male Teachers   | 2.481 | 599     | .014            | 3.92999         | 1.58386               | .81343                                    | 7.04655 |
|       | Female Teachers | 2.445 | 263.813 | .015            | 3.92999         | 1.60735               | .76566                                    | 7.09432 |
| Total |                 |       |         | .029            |                 |                       |   |         |

Table 5 above showed a t-value difference of 0.036, similar mean difference of 3.92999, p-value of  $.029 < .05$  which implies that there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State. The null hypothesis is therefore rejected.

**Ho3:** There is no significant difference between the mean rating of male teachers and female teachers opinions on the extent e-rate assessment

skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State

*Table 6: T-test the mean rating of male teachers and female teachers opinions on the extent e-rate assessment skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State*

|       |                 | t-test for Equality of Means |         |                 |                 |                       |   |         |
|-------|-----------------|------------------------------|---------|-----------------|-----------------|-----------------------|---|---------|
|       |                 | T                            | Df      | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |         |
|       |                 |                              |         |                 |                 |                       | Lower                                     | Upper   |
|       | Male Teachers   | 2.281                        | 599     | .011            | 3.22999         | 1.58386               | .81343                                    | 7.04655 |
|       | Female Teachers | 2.145                        | 223.113 | .015            | 3.22999         | 1.60735               | .76566                                    | 7.09432 |
| Total |                 |                              |         | <b>.026</b>     |                 |                       |   |         |

Table 6 above shows t-value difference of 0.136, no mean difference value of 3.22999 and p-value of .026<.05 which shows that there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent e-rate assessment skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State. The null hypothesis is therefore rejected.

### Summary of Findings

The findings of the study are hereunder itemized:

1. In research question one, mean set score of 2.78>2.5 showed high extent that search skills of teachers enhances teaching and learning in public secondary schools in Rivers State
2. There is a significant difference between the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.

3. In research question two, mean set of  $2.48 < 2.5$  showed low extent communication skills of teachers enhances teaching and learning in public secondary schools in Rivers State
4. There is a significant difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State.
5. In research Question 3, mean set of score of  $2.30 < 2.5$  showed low extent e-rate assessment skills of teachers enhance teaching and learning in public secondary Schools in Rivers State
6. There is a significant difference between the mean rating of male teachers and female teachers opinions on the extent e-rate assessment skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State

### **Discussion of Findings:**

The findings of the study are hereunder discussed:

#### **Search Skills and Teaching and Learning**

Tested hypothesis one showed that there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent search skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State. Yeroku, (2015) buttressed the stance of the respondents stating that internet by teachers enable them have access to e-journals and literature will enhance utilization of library information resources and enrich education. Besides, e-journals, online databases are vital in modern day research in the universities. Online databases are usually collections of e-journals and e-books provided by libraries in order to ensure cost effective access to these e-resources to the end-users. The most effective way to provide access to electronic books/journals in schools is through subscription to online databases which can be accessed through the internet. Online databases are a collection of electronic information sources by



publishers from various fields and disciplines (Brcuh, 2007). For students to utilize the growing range of electronic resources they must acquire and practice the skills necessary to exploit them (Okello-Obura 2010).

### **Communication Skills of Teachers and Teaching and Learning**

Findings of hypothesis two showed there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent communication skills are used for the enhancement of teaching and learning in public secondary schools in Rivers State. Nweke (2018) asserted that internet communication would mean the ability to communicate using the internet technology, the skill of using office application and the knowledge of activation of internet apps to pass meaningful message.

It is well documented that students have different learning styles. Access to assignments online after hours can give students the ability to complete assignments on their own timetable. Having a way for students to study or submit assignments from home can greatly help students who suffer from test anxiety or have difficulty concentrating in a busy classroom (Campbell, 2011).

The indispensability of communication in contemporary teaching and learning has created the imperativeness to have a clear understanding of what ICTs mean as a concept. Conrad (2002) defined internet communication as the marriage of the computer and telecommunications. It is an operation that is not possible without the combination of the computer and telecommunication.

### **E-Rate Assessment Skills of Teachers Enhances Teaching and Learning**

Tested hypothesis three showed that there is a significant difference between the mean rating of male teachers and female teachers opinions on the extent e-rate assessment skills are used for the enhancement of teaching and learning in public secondary Schools in Rivers State. Jegede, (2002) stated that information can be collected through internet; a lot of information of different types is sorted on the web server on the internet. This means that billions of websites contain different information in the form of text and pictures. Teachers can use any these apps in assessing or testing their students. Users can search for job online using the internet

facilities, most of the organizations or departments around the world advertise their vacancies on the Internet.

Also, internet facilities help to promote assignments online. Communication is easy through the help of internet facilities; one can communicate with the other through internet around the world. Different services are provided on the internet such as chatting, video conferencing, email, internet telephony and others. Internet serves as a market place where social needs and textbooks can be purchased. Along with getting information on the internet, one can also shop online. There are many online stores and sites that can be used to look for products as well as buying them using credit cards (Lakshminyanan, 2010).

### Conclusion

The study has reached that search skills would enhance teacher skill for effective teaching and learning. Teachers are expected to be drilled and knowledgeable in various internet search skills. Communication skill which include the ability of the teacher to apply accompanying devices or facilities to the internet will enhance teaching and learning effectiveness. Internet skill if imbibed can also be used in assessing students in assignment, tests, exams for effective teaching and learning.

### Recommendations

Based on the findings of the study, the following recommendations have been made:

1. Management of public secondary schools in Rivers state should embark on training and retraining of teachers in communication skills of the internet.
2. Public school administrators should provide internet facilities in classrooms to enhance teaching and learning effectiveness
3. Teachers should embark on personal development in order to fit into the contemporary classroom that is technology driven.

### References

- Adeyemi, R. I. (2008). *Improving teaching and learning: An introduction to instructional technology*. Joe Seg Assoc.
- Aduwa-Ogiebean, Y. U. (2005). Determinants of administrative effectiveness in higher education: A study of occupational efficacy, administrative behaviour and job

- satisfaction of educational administrators working in Indian universities. *International Journal of Education*, 5(3/4), 1-16.
- Bayair, S., & Kathwalai, D. (2011). The role of ICGTs in higher education in South Africa: One strategy for addressing teaching and learning challenges. *International Journal of Education and Development using ICT*, 3(4), 131-142.
- Berline, D. (2019). *Educational technology in curriculum development*. Harper & Row Publishers.
- Blackmore, J. (2009). Academic pedagogies, quality logics and performative universities: evaluating teaching and what student wants'. *Studies in Higher Education*, 34(8), 857-872.
- Bruce, J. N. (2005). *Educational technology with practical*. Totan.
- Burger, S. E., Idu, I. J., & Memzieobi, I. (2010). *Technology and education: an introduction*. Cape Publishers.
- Campbell, D. (2006). *Educational technology in curriculum development*. Harper & Row Publishers.
- Conrad, J. (2011). *A survey of student perception and utilization of the web as a learning resource. A case study of department of extra mural studies*. An Unpublished Master Dissertation. University Press. <http://www.interaction.nu.ac.za>.
- Cook, M. (2011). *A study of the administrative behaviour of secondary school principals in relation to selected school variables*. Unpublished Ph. D. Thesis (Education), MSU University Press.
- Das, A. (2014). Challenges and effect of technology in the development of architecture and engineering in Nigeria's private universities institution. *Architectural Engineering and Design Management*, 4(23).
- Dewi, N. (2013). *Distributed leadership: A review of literature distributed leadership*. National College for School Leadership.
- Duffy, I. N. (2010). *Job satisfaction and occupational stress in Catholic primary school*. Annual Conference of Australian Association for Research in Education, Sydney, 27th November-1st December, 2005.
- Ekaette, D. (2004). *The new meaning of development*. International development review.
- Everett, R. (2019). *Introduction to educational technology*. Johns-lad Publishers.
- Eyila, R. (2008). *Principles and practice of educational technology*. International Publishers.
- Ezoem, O. (2005). Job satisfaction and self-efficacy as correlates of job commitment of special education teachers in Oyo State. *Journal of Education and Information Technology*, 3(9), 95-104.
- Federal Republic of Nigeria (2014). *National Policy on Education*. NEDRC.
- Fox, B. (2009). New technology definitions. <http://www.brandonhall.com/public/glossary/index.htn>.
- Godwin, J. D. (2006). The effect of student involvement on the development of academic self-concept. *The Journal of Social Psychology*, 140(2), 261-263.
- Gramson, R., & Anderson J. (2008). *Fundamentals of educational technology*. Y-books.
- Green, N. (2015). *China carmakers narrow quality gap on global rivals: Report*. Reuters.

- Hurbean, K., & Fortache R. (2003). Too much face and not enough books. The relationship between multiple indices of Facebook uses and academic performance. *Computers in Human Behaviour*, 28(1), 187-198.
- Ighofivwioni, S. C. (2014). *Instructional media and the new technologies of instruction*. John Wiley and Sons.
- Jegede, S. J. (2002). *Computer for education*. Gulli Press.
- Jimoh, A. (2007). *Problems and prospects of educational technology in Nigeria*. Heinemann.
- Kayode, T. (2002). *Introduction digital class*. Johns-Lad Publishers.
- Ken-Maduako, E., & Nkechor, C. I. (2020). Training teachers for digital competency for the 21<sup>st</sup> century. *Journal of Reading Association of Nigeria*, (21), 34-44.
- Lakshminayanan, F. (2010). A new generation of learners: The next generation and digital natives. *Learning, media and Technology*, 35(4), 365-385.
- Menjo, R., & Boit, T. (2012). Principals' leadership skills and school effectiveness: The case of South Western Nigeria. *World Journal of Education*, 3(5), 26-33.
- Nweke, E. O. (2018). *The digital office*. Minson Press.
- Ofodu, N. (2007). *Educational technology 1 and 2 in NTI*. Nigeria Certificate in Education by Distance Learning Book on Education Cycle 1 Module 11 and 12 NTI.
- Okonkwo, J. (2019). Virtual reality for Education in Nigeria. [www.medim.com/imis3d/virtual-reality-for-education-in-nigeria](http://www.medim.com/imis3d/virtual-reality-for-education-in-nigeria)
- Owen, O. I. (2013). Alternative modes of financing higher education in Nigeria and implications for university governance. In J. B. Babalola and B. O. Emunemu (eds), *Issues in Higher Education: Research Evidence from Sub-Saharan Africa*. Bolabay Publications.
- Paduraru, R. O. S. (2010). Investment in education and economic growth in Nigeria: Empirical evidence. *International Research Journal of Finance and Economics*, 55, 158-169.
- Postholm, O. B. (2005). Principals' leadership skills and school effectiveness: The case of South Western Nigeria. *World Journal of Education*, 3(5), 26-33.
- Sander, I. R. (2010). Declining quality of Nigerian university graduates: Revitalizing quality assurance through foreign agencies' support US-China Education Review Department of Educational Administration, Faculty of Education, University of Lagos, 7(6), 45-53.
- Toe, R. I. (2013). Challenges of quality in higher education in Nigeria in the 21<sup>st</sup> century. *Int'l J. Educ. Plan. Admin*, 3(2), 159-172.
- Ukonu, I. & Imogie I. (2012). *Fundamentals of educational technology*. Y-Books.
- Virkus, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *Leadership Quarterly*. <http://doi.org/10.1016/j.leaqua.2005.03.001>.
- Yeroku, N. J. (2015). *Distributed leadership: A review of literature distributed leadership*. National College for School Leadership.
- Zaeren, N., & Mannonem T. (2012). Upon learning management system. *Revista Informatica Economica*, 4(48), 91-94.