



# **New Technology Application In Teaching Of Economics In Senior Secondary Schools In Port Harcourt Metropolis**

**Professor Maureen Koko & \*Amadi Amos Elekwachi**

**Department of Business Education  
Rivers State University, Port Harcourt, Nigeria  
\*Email: amadiame2000@gmail.com**

## **ABSTRACT**

The study adopted a descriptive survey design. The study was carried out in Rivers State. Two research questions and two null hypotheses guided the study. The population of the study consists of 68 economics teachers in 24 senior secondary schools in the Port Harcourt metropolis. The entire population was used for the study because of its sizeable population. A structured questionnaire titled New Technology Application in Teaching of Economics Questionnaire (NTATEQ) was developed on a 4 point rating scale by the researcher and was validated by experts and used as instrument for data collection. The questionnaire was administered to the respondent from the targeted population. The research questions were analyze with mean and standard deviation, while the hypotheses were tested with the use of z-test statistics. The result reviewed that New Technological tools for teaching of economics in Port Harcourt Metropolis are relevant to a high extent. The study concluded that, new technologies are seen to be relevant in teaching economics but that the technologies are scarcely availability for teachers to use in senior secondary schools in Port Harcourt metropolis. Base on the findings of the study it was recommended that new technology should be made available for teaching economics in secondary school in Port Harcourt metropolis.

**Keywords:** New Technology, Application, Teaching, Economics

## **INTRODUCTION**

The world today is taken over by emerging technological tools that have great impact in teaching and learning. Shittu (2013) explains new technological tools as all forms of evolving technology that help in facilitating information collection, processing, usage, transfer, storage, retrieval, sharing and interpreting information. The new era of technology explosion has changed the traditional way of teaching in the classroom to a more interesting and fascinating one, which is characterized with active, integrative and evaluative learning (Tinio, 2002). New technologies which bring about structural changes in the classroom today has a significant impact on education, the society and our life in general by influencing the way we teach, transact and learn. Hence, Aja (2013) in his view stated that new Technology can provide a high degree of user interaction, the lesson is self-pacing, provides reliable instructions and give immediate feedback to the students to enable them monitor and regulate their progress. New technology is a millennium development phenomenon-driven device every teacher is required to use for efficiency and high productivity in teaching process. Esgaronana and Kpangban, (2010), assert that for Nigeria to have a functional and effective economy, new technology compliance should be available in classrooms. There is no doubt that the availability and relevancy of new technology by teacher in teaching economics can enhance teaching of economics in senior secondary schools.

Teaching which involves purposeful and meaningful transfer of knowledge, skills, competencies and attitude formation in human beings either in the formal or informal educational set-up need the use of these technologies. Teacher in the 21<sup>st</sup> century have become more or less instructors and more orchestrators of information, giving students the opportunity and ability to turn knowledge to wisdom. The era in which teachers become monotonous in classroom teaching is far out of phrase. The Nigeria

Educational Research Development Council (2008) emphasized that teachers should implore the use of collaborative, interactive and learner oriented instructional strategist. New technology is a millennium development phenomenon-driven device every teacher is required to use for efficiency and high productivity in teaching process. Esgaronana and Kpangban, (2010), assert that for Nigeria to have a functional and effective economy, new technology compliance should be available in classrooms. There is no doubt that the availability and relevancy of new technology by teacher in teaching economics can enhance teaching of economics in senior secondary schools.

Economics as a subject in secondary school requires that at the end of the program the students become relevant in everyday life and could prepare to have meaningful future career. Economics as a field of study involves teaching that are directed toward deductive and inductive reasoning. Deductive reasoning involves teaching from the more general ideas to the more ideas, while inductive reasoning involve teaching from specific observation to broad or generalization and theories (Trochim, 2006). Deductive and inductive analyses are essential in course development of economics (Ping, 2003) therefore teaching of economics entails the use of new technology to expand on both deductive and inductive reasoning where knowledge on economic behavior and phenomena are critically studied. This implies that new technology addresses teaching phenomena in economics to enhance judicious use of both human and non-human resources for national development. The availability of new technology fosters national development, in which the proper teaching of economics is improved.

The world is tending towards becoming a global village through the use of new technologies and Economics as the Study that prepare individuals for business and also to be an intelligent consumer of economic goods and services have to be properly positioned in this global village where new technology is predominant. The vastness of economics content has been a source of fear to educators and of serious concern for teachers (Utoware & Kren-Ikidi 2014). The competence of the teacher can increase with the availability of new technology for preparation of lesson plan and notes for effective teaching. Rampersad (2012) reported that teachers were mandated to include technology in their lesson plan to enhance their instructional strategies in the classroom. This is only achievable when the technologies are made available. Hence, the availability of new technologies for teaching economics will give the students the opportunities to access information of their interest and interact with experts in other parts of the world. This will help to further develop their understanding, knowledge as well as make them gain new information. Teaching of economics at the senior secondary school is very important in the use of the new technologies to meet with global demands. This can only take place where the learning environment is supportive through the relevant technologies. The integration of relevant technologies as an instructional material, have the potentials to transform and enrich the classroom environment to achieve qualitative education, meaningful and lifelong learning at all levels of education especially secondary school which is a base and criterion for higher level education.

### **Statement of the Problem**

For teachers of economics to be competent in secondary schools and to produce future economic teachers and managers in all sectors of the economy, new technologies becomes necessary in teaching of economics. The emerging issue of teachers not being able to replace traditional pedagogies practice to innovative pedagogies in the education system of Nigeria despite the well plan curriculum may be traced to not attainment of the curriculum objective. The need for effective application of new technology in teaching to attain curriculum objectives in economics is very important. Education for new emerging society require new technology to facilitate more meaningful teaching process. Innovative approach and scientific knowledge are not simply means of improving society only, but main products of improving efficiency in the education sector. According to Nwanewezi (2005) the application of new technology in teaching has generated serious concern. New technology, despite its numerous uses in the teaching process could be lagging in several secondary schools in the teaching of economics. This is because there might still be a large number of teachers who still have to fully appreciate the importance of new technology in realizing their teaching objectives, while many may find themselves incompetent to handle new technologies as instructional delivery tools.

The researcher wonders whether if Senior Secondary Schools in Port Harcourt metropolis could influence the condition of the application of new technology in teaching of economics. Therefore, this study is aimed at finding out the application of new technology in the teaching of economics in Senior Secondary Schools in Port Harcourt metropolis.

### **Purpose of the Study**

The purpose of the study is to investigate new technology application in the teaching of economics in Senior Secondary Schools in Port Harcourt metropolis. Specifically, the study seeks to determine the following:

1. The availability of new technology in the teaching of economics in senior secondary schools in Port Harcourt metropolis.
2. The adequacy of new technology in the teaching of economics in senior secondary schools in Port Harcourt metropolis

### **Research Questions**

The following research questions guided the study:

1. How available are the new technological tools for the teaching of economics in senior secondary schools in Port Harcourt metropolis?
2. How adequate are the new technological tools in teaching economics in senior secondary schools in Port Harcourt metropolis?

### **Research hypotheses**

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significance difference in the mean rating of male and female economics teachers on the availability of new technological tools in teaching economics in Senior Secondary Schools in Port Harcourt metropolis.
2. There is no significant difference in the mean rating of male and female economics teachers on the adequacy of new technological tools in teaching economics in senior secondary schools in Port Harcourt metropolis

### **Availability of New Technological tools in Teaching Economics**

Looking at the role of education in nation building and population explosion in secondary schools these days, the availability and application of new technological tools for economics instructional delivery process becomes imperatives. This is true because its adoption by the teachers will enhance effective teaching. Such issues like good course organization, effective class management, content creation, self assessment, self study, collaborative learning, task oriental activities and effective communication between the actors teaching and learning process and research activities will be enhanced by the availability of new technology tools.

It is important to note that teaching has gone beyond the teacher standing in front of a group of students and disseminate information to them without the students adequate participation (Ajayi 2011). This implies that with the availability of new technological tools, teachers can take students beyond traditional limits, ensure their adequate participation in the delivery process and create vital environment to experiment and explore. This new development is a strong indication that the era of teacher without technological skill is gone. Any classroom teacher with adequate and professional competency skills in new technology tools will definitely have his students perform better in classroom learning.

Stressing the importance of the availability and use of ICT facilities as an instructional material for Business Studies in secondary schools, Olurunsola (2008) asserted that through technology, educational needs have been met; it changes the needs of education as well as the potential processes. Message can be communicated through the e-mail, telex or telephones particularly the mobile ones. Hence, pervasiveness of technology has brought about rapid technological, social, political and economic transformation, which has eventuated in a network society organized around new technology (Yusuf, 2005). The author posited that new technology is an indispensable part of educational administration as its application makes institutions more efficient and productive, thereby engendering a variety of tools to enhance and facilitate teachers' pedagogical activities. For instance, internet is becoming one of the most common means of using technology to provide teaching both on and off campus by means of teaching online offered via web-based systems.

Looking at the role of teaching profession in nation building and the population explosion in the secondary schools these days, the availability and use of new technology facilities for teaching economics becomes imperative. This is true because its adoption by the teachers will enhance effective teaching. Such issues like good course organization, effective class management, content creation, self-assessment, self-study collaborative learning, task oriented activities, and effective

communication between the actors of teaching and learning process, and research activities will be enhanced by the availability of new technology. Any classroom teacher with adequate and professional skills in technology utilization will definitely have his students perform better in classroom learning.

A cursory look at the secondary schools in Rivers State has shown that many teachers in the system still rely much on conventional or traditional “chalk and talk” method of teaching economics rather than embracing the use of new technological tool. This was as a result of new technology facilities not made available in most secondary schools in the area. According to Okebukola (2008), computer is not part of classroom technology in over 90% of public schools in Nigeria, thus the chalkboard and textbooks continue to dominate classroom activities. This is an indication that the students are still lagging behind in the trend of changes in the world. This presupposes that there is the tendency for the teachers to be denied the opportunities which technology offers in the teaching activities. Therefore, the researcher call for the need to replace the traditional pedagogical practices that still underpin the educational system in the country, hence the need to explore the various new technologies available and relevant to use for economics in teaching process in Nigerian Secondary Schools particularly in Rivers State.

Various technology facilities available and ready to use for instructional delivery process in schools according to Ofodu (2011) include; radio, television, computers, overhead projectors, optical fibres, fax machines, CD-Rom, Internet, electronic notice board, slides, digital multimedia, video/ VCD machine and so on. It appears some of the facilities are not sufficiently provided for, if not available for the instructional delivery process in secondary schools in Rivers State. This might account for why teachers are not making use of them in their instructional process. According to Ajayi (2011), the use of these tools, involves various method which include systematized feedback system computer-based operation/network, video conferencing and audio conferencing, internet/ worldwide websites and computer assisted instruction.

It must however be stressed that the effective use of the various method of the technology by economics teachers depends on the availability of these facilities and teachers’ competence in using them. Observation has shown that there are no functional internet facilities in most public secondary schools in Rivers State. This appears to hinder the extent of students and teachers’ exposure to the use of the new technologies in teaching economics. Economics teachers appear not to be knowledgeable in the use of modern technologies, because there appears not to be available technologies and official training for both the teachers and the students in the schools. Hence, the need for the availability of new technology in Junior secondary schools in Rivers State cannot be over emphasized.

### **Adequacy of New Technological tools in Teaching Economics.**

Many African countries have witnessed the development of new technologies in various sectors over the last decade including education. The change from teacher-centered education system to learner-centered education system in the past years contributes to the use of new technology in education. Hawkins in Inwent (2012) conceived knowledge-driven world to mean education reform practices that should focus on equal access and quality of education which should highlight the importance of change in the education sector through the use of new technology in new generations with enhanced skills to operate in the 21<sup>st</sup> century.

The use of new technology in teaching economics in Nigeria and African countries generally is increasing and dramatically growing. However, while there is a great deal of knowledge about how new technology are being used in developed countries, there is not much information on how new technology are being introduced into secondary schools in developing countries (Ugwu and Obegbulem, 2011). The new and emerging technologies challenges the traditional process of instructional delivery, and the way education is managed, while ICT is an important area of study in its own right and it is having a major impact across all curriculum areas. Easy worldwide communication provides instant access to vast array of data, challenging assimilation and assessment of skills (Murphy, 2011). Rapid communication plus increased access to ICTs in the home, at work and in educational establishment could mean that leaning becomes a truly lifelong activity-an activity in which the pace of technological change forces constant evaluation of teaching process itself.

According to Ikelegbe in Umoru (2012), new technology consist of all the modern systems for processing information and communication in data, text, image and voice. He emphasized that

technology embraces all the technologies that support activities involving the creation of data, storage, manipulation and communication of information, including other methods, procedures, management and application. Ogunsola (2006) also described new technology as an electronic based system of information transmission, reception, processing and retrieval which has drastically changed the way we think, the way we live and the environment in which we live. It can be used to access global knowledge and communication with other people. Students who use technology gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom (Apple Computer, 2009). In addition, new technology is adequate because students use it to extend and deepen their knowledge, investigation and inquiry according to their needs and interest when access to information is available at multiple levels.

United Nations Report in Syen-Noor (2010) affirmed that new technology cover internet service provision, telecommunication equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centers, commercial information providers, network-based information services and other related information and communication activities. There are other various kinds of new technological products that are relevant and adequate to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audio cassettes and CD ROMs etc which have been used in education for different purposes. Different types of technology can be used to support and enhance teaching. Everything from video content and digital moviemaking to laptop computing and handheld technologies has been used in classrooms. Similarly, new uses of teaching such as POD casting are constantly emerging and that various technologies deliver different kinds of content and serve different purposes in the classroom (Marshall, 2012). Word processing and e-mail promote communication skills, database and spreadsheet programme promote organizational skills and modeling software.

It is important to consider how these electronic technologies differ and what characteristics made them important as vehicles for education (Berker, 2010). Technologies available in classrooms today ranges from simple tool-based applications (such as word processors), to online repositories of scientific data. Others are handheld computers, closed-circuit television channels and two-way distance learning classrooms. Prensky (2013) asserts that even the cell phones that many now carry with them can be used to learn and that each technology is likely to play a different role in students learning. Therefore, there is need to think about what kind of technologies are being used by the teachers and students in the classroom and for what purposes. Students can learn from computers where technology are used essentially as tutors and serve to increase student's basic skills and knowledge. They can also learn with computers where technology is used as tool that cannot be applied to a variety of goals in the learning process and that can serve as a resource to help develop higher order of thinking, creativity and research skills (Ringstaff & Kelley, 2012).

## **METHODOLOGY**

The study adopted a descriptive survey design. The population of the study consisted of 68 economics teachers in 24 selected senior secondary schools in Port Harcourt metropolis. The entire population was used for the study because it is manageable. Therefore, there was no sample. The instrument used for data collection was a structured questionnaire titled "New Technology Application in Teaching of Economics Questionnaire" (NTATEQ). The instrument was designed in a four-point rating scale of agreement used to elicit responses from the respondents. In order to determine the validity of the instrument, the questionnaire was face and content validated by experts in the Faculty of Education, Rivers State University. To ensure the consistency of the instrument, the Cronbach Alpha reliability method was adopted and a reliability coefficient of 0.87 was established. 45 copies of the instruments administered were retrieved and used for the study. The research questions were answered using mean and standard deviation while z-test was used to test the hypotheses at 0.05 level of significance. The criterion mean score of 2.50 and above was agreed, while the mean score below 2.50 was disagreed. Similarly, the decision rule for the hypotheses was that any hypotheses below 2.50 was disagreed. Similarly, the decision rule for the hypotheses was that any hypotheses with z-calculated value less than the z-critical table value of 1.96 was agreed otherwise rejected.

**RESULTS**

The results for this study were presented according to each research question posed in the study as thus:

**Research Question 1:** *How available are the new technological tools in the teaching of economics in senior secondary schools in Port Harcourt metropolis?*

**Table 1: Respondents Mean Scores of Teachers on the Availability of New Technological Tools for Teaching Economics in Senior Secondary School in Port Harcourt Metropolis.**

S/N	Item Statement	Male Teachers (38)		Decision	Female Teachers (30)		Decision
		X <sub>1</sub>	SD <sub>1</sub>		X <sub>2</sub>	SD <sub>2</sub>	
1.	Computer	3.13	0.90	A	2.50	1.12	A
2.	Flash drive	1.62	1.45	NA	1.05	1.75	NA
3.	Smart interactive whiteboard	2.75	1.72	A	2.67	1.50	A
4.	E-learning centre	1.50	1.46	NA	2.12	1.06	NA
5.	E-library facilities	2.47	1.06	NA	2.02	1.04	NA
6.	Internet service	1.05	1.40	NA	1.89	2.01	NA
7.	Electronic typewriter	2.15	1.50	NA	2.05	1.03	NA
8.	Photocopier	2.76	1.20	A	1.67	1.60	A
9.	Video conferencing	3.00	0.81	NA	2.22	1.45	A
10.	Tele-conferencing	1.95	1.57	NA	1.79	0.72	NA
11.	Overhead projector	2.83	1.30	A	2.12	0.67	NA
12.	Tele-collaboration	2.03	1.10	NA	1.50	1.05	NA
13.	Monitor technology	1.27	0.12	A	2.21	1.06	NA
14.	Scanner	2.12	1.04	NA	1.72	0.57	NA
15.	Dictating machine	2.36	1.62	NA	1.52	1.28	NA
<b>Grand Mean/SD</b>		<b>2.17</b>	<b>0.71</b>	<b>NA</b>	<b>2.10</b>	<b>1.19</b>	<b>NA</b>

**Source:** Field Survey, 2023.

Table 1 showed respondents' view on the availability of new technologies for teaching economics in Port Harcourt Metropolis. In male, Items 1 and 8 were revealed to be available at high extent. These were confirmed with mean values of 3.13 and 2.76 respectively. Conversely, all the remaining 13 items were indicated to be available at low extent in the teaching of economics in senior secondary schools in Port Harcourt. In female teachers, Item 1, and 7 were also available at high extent in the teaching economics in Port Harcourt. The mean values of 2.50, and 2.86 confirmed the acceptance respectively. On the contrary, the rest items were revealed to be available at low extent in the teaching economics.

**Research Question 2:** *How adequate are the new technological tools in teaching economics in senior secondary schools in Port Harcourt metropolis?*

**Table 2: Respondents mean scores of Teachers on the Adequacy of New Technological Tools for Teaching Economics in Senior Secondary Schools in Port Harcourt Metropolis**

S/N	Item Statement	Male Teachers (38)		Decision	Female Teachers (30)		Decision
		X <sub>1</sub>	SD <sub>1</sub>		X <sub>2</sub>	SD <sub>2</sub>	
1.	Computer	3.03	0.94	A	2.76	0.77	A
2.	Flash drive	1.92	0.82	NA	1.71	0.75	NA
3.	Smart interactive whiteboard	1.75	0.80	NA	1.67	0.71	NA
4.	E-learning centre	1.74	0.78	NA	2.06	1.09	NA
5.	E-library facilities	2.41	0.96	NA	2.30	1.08	NA
6.	Internet service	1.67	0.71	NA	2.09	0.93	NA
7.	Electronic typewriter	2.20	1.08	NA	2.29	0.80	NA
8.	Photocopier	2.67	1.21	NA	1.87	0.88	A
9.	Video conferencing	3.26	0.84	NA	2.86	0.79	A
10.	Tele-conferencing	2.04	1.02	NA	1.99	0.96	NA
11.	Overhead projector	2.33	0.92	NA	2.25	0.80	NA
12.	Tele-collaboration	2.23	0.19	NA	1.78	0.82	NA
13.	Monitor technology	1.87	0.16	NA	2.34	0.89	NA
14.	Scanner	2.12	0.17	NA	1.95	0.18	NA
15.	Dictating machine	2.36	0.18	NA	1.67	0.71	NA
<b>Grand Mean/SD</b>		<b>2.17</b>	<b>0.71</b>	<b>NA</b>	<b>2.10</b>	<b>0.81</b>	<b>NA</b>

**Source:** Field Survey, 2023

Table 2 showed respondents' view on the adequacy of new technological tools for teaching economics in Port Harcourt metropolis. In the male teacher, Item 2, 5, 7 and 15 were indicated to be relevance at low response, this is affirmed by mean values of 1.92, 2.45, 2.20 and 2.12 respectively, whereas the rest items were revealed to be relevant at high response in teaching economics in Port Harcourt metropolis. In female, item 2, 4, 7 and 14 were indicated to be used at low response; this is confirmed by the response mean values of 1.71, 2.06, 2.29 and 1.67 respectively, while the rest 4 items were affirmed to be adequate in teaching economics in Port Harcourt metropolis.

**Hypotheses 1**

**H<sub>01</sub>:** There is no significance difference in the mean rating of male and female economics teachers on the relevance of new technologies in the teaching of economics in Senior Secondary School in Port Harcourt metropolis.

**Table 4: Z-test Analysis of Male and Female Economics Teachers on the Availability of New Technological Tools in Teaching of Economics**

Groups	N	Mean	SD	DF	P	Z <sub>cal</sub>	Z <sub>crit</sub>	Decision
Male Teachers	38	2.17	0.71	66	0.05	-12.1	1.96	Accepted
Female Teachers	30	2.10	1.19					

**Source:** Field survey, 2023.

Table 4 showed that the calculated z-value was -12.1 which is less than the critical or table t-value of 1.96 at 0.05 level of significance and at 66 degree of freedom (df). Therefore, the null hypothesis of no significant difference between the mean response of male and female economics teachers on the availability of new technological tools in teaching economics in senior secondary schools in Port Harcourt metropolis was not accepted. As such from the analysis, it can be concluded that the views

of male and female economics teachers are the same on the availability of new technologies in teaching economics.

**Hypothesis 2**

**Ho<sub>2</sub>:** There is no significance difference in the mean rating of male and female economics teachers on the adequacy of new technological tools in the teaching of economics in Senior Secondary Schools in Port Harcourt metropolis

**Table 5: Z-test Analysis of Male and Female Economics Teachers on the Adequacy of New Technological Tools in Teaching Economics.**

Groups	N	Mean	SD	DF	P	Z-Cal	Z-Crit	Decision
Male	38	2.43	0.71					
				66	0.05	-4.75	1.96	Accepted
Female	30	2.10	0.81					

**Source: Field survey, 2023.**

Table 5 showed that the calculated z-value was -4.75 which is less than the critical value of 1.96 at 0.05 level of significance and at 66 degree of freedom (df). Therefore, the null hypothesis of no significant difference between the mean response of male and female economics teachers on the extent of adequacy of new technological tools for teaching economics in senior secondary schools in Port Harcourt was accepted. As such from the analysis, it can be concluded that the views of male and female economics teachers are the same.

**DISCUSSION OF FINDINGS**

Discussion of the study were made according to each research question posed in the study. Findings in research question one showed that new technology was relevant for teaching of economics in senior secondary schools in Port Harcourt Metropolis. Also, the hypothesis testing indicated no significant difference in the opinion of respondents in senior secondary schools in Port Harcourt metropolis on the relevance of economics. The findings are in agreement with the views of Brunges (2012) who noted that new technologies are needed for effective teaching in secondary schools.

Findings in research question two showed that new technologies for the teaching of economics in senior secondary schools are to a great extent not available. Similarly, the hypothesis testing indicated no significant difference in the opinion of respondents on the availability of new technologies in teaching economics. The findings corroborates that of Ajayi (2011) who asserted that the unavailability of new technologies in secondary schools bedevilled teaching and learning of economics in secondary schools.

**CONCLUSION**

Decisively, new technology is a key instrument that could upgrade compelling teaching of economics secondary schools in Port Harcourt Metropolis. In this manner, it is critical that all teachers ought to be familiar with applicable aptitudes and skills that new technology gives to the beneficiary. Based on the findings from the study, it was concluded that the availability and adequacy of new technologies is essential for effective teaching of economics in senior secondary schools in Port Harcourt metropolis.

**RECOMMENDATIONS**

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

1. Government should endeavour to make adequate provision of new technologies to the secondary schools to enable effective teaching and learning economics
2. Teachers should also adjust to apply the available new technologies in teaching and learning in secondary school.



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