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# **Extent of Utilization Modern Technology for Teaching Economics in Senior Secondary Schools in Port Harcourt Metropolis**

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## **ABSTRACT**

This study investigated the extent of utilization of modern technologies for teaching economics in secondary schools in Port Harcourt Metropolis. Three purpose of the study, three research questions and three hypotheses guided the study. A descriptive survey design was adopted in the study. The population of the study comprises of 68 teachers. The entire population was used for the study. The instrument for data collection was a self-structured questionnaire titled “Questionnaire on Utilization of Modern technology for teaching economics in secondary schools in port-Harcourt metropolis the research question were analyzed with mean and standard deviation while the t-test was used to test the hypotheses formulated in the study at 0.05 level of significance. Findings in the revealed that; visual aids and audio aids are utilized by economic teaching at moderate extent while interactive whiteboard was recommended that; more visual aids and audio aids should be provided by government and interactive whiteboard should be provided to enhance the teaching of economics.

**Keywords:** Technology, Modern technology, Economics, Interactive white board, Digital visual aids.

## **INTRODUCTION**

Teaching and learning involves purposeful and meaningful transfer of knowledge, skills, competences and attitudes formation to learners in a formal or informal set up. The era of information and communication technology (ICT) known as information age has changed the traditional ways of learning in the classroom to a more interesting and fascinating one characterized with active and evaluative learning. This technological revolution has not only changed the way teaching and learning is done but also the way the world communicates conducts businesses and every carryout day-to-day activity.

Technology is the systematic application of scientific or other organized knowledge to practical tasks (Harmony, 2017). Teachers use technologies to enhance teaching and learning through active participation of the students. Teachers do this by allowing students to source for information online and discuss with them in the classroom. The teachers also post basic information for students to access and learn from.

Modern technologies are the new tools (Electronic tools) that are used to enhance teaching and learning. Modern technologies are made up information and communication technologies are represented by several digital tools like computers, internet and intranet, general system of communication (GSM), world wide web (www), teleconferencing and video-conferencing devices and mobile technologies. Others are smart/interactive whiter board, dedicated e-learning centres, search engines and machines such as google, e-library and projectors, multimedia devices that combine sound images, graphics, video and text in a single

presentation (Ebisine, 2017). There are other modern technologies for data capturing, multimedia software for simulations, publishing and presentation, digital recording, computer and computer projection technology that enhances teaching and learning (Amiaya, 2016). Modern technologies have been found to possess the capacity to improve instructions in the classroom. It has the great potential to support education across curriculum, thus, providing opportunities for an effective communication between teachers and students in ways that have not been possible before (Lefebure, Deaudelin & Loiselle, 2016).

Economics is an important subject that is taught at senior secondary school level of education. It is of great importance to the extent that it is a requirement for students to gain admission at the tertiary level of education to study the following courses; accountancy, business administration, business education, insurance, banking and finance, econometrics and economics. The method adopted by teachers in teaching this subject is also of great importance, so that the student can understand the concepts taught in the subject so as to fit into the next stage of their life and career.

Economics as a subject in Senior Secondary School requires that at the end of the programme, students should be knowledgeable on the various concepts in the subject. Economics as a subject requires teaching method that is directed towards deductive and inductive reasoning. Deductive reasoning in the context involves teaching from the more general ideas to the more specific ideas while inductive reasoning involves teaching from specific observation to broad or generalization and theories (Trochim, 2016). The teachers of economics ought to possess and utilize modern technology competence so as to enable them teach in line with global best practices as obtainable all over the world. Some of the modern technologies that are used to enhance teaching and learning in the educational sector are; interactive white board/smart board, digital visual aids and audio aids.

An interactive white board (IWB) is an interactive display system that is commonly used in educational application. Interactive white board forms a link between a teaching surface and a digital projector and a computer. It is a large wall-mounted panel that uses a teaching surface that allows the user to operate the computer through interaction with projected images (Tufan, 2018). Interactive white board is generally perceived by students and teachers as a positive asset for classroom learning environment. Researches have indicated that interactive teachers' teaching efficiently (Tufan, 2018) classes supported by interactive white board has faster pace and less time would be spent in group work (Glover, 2016).

The use of interactive white board in instruction helps in improving learners with learning difficulties or disabilities to improve in their study. The use of interactive white board in teaching economics improves learning within a group of students that requires special techniques to be taught a particular subject (Oliver & Roschly, 2017). The use of interactive white board helps in harnessing literacy problems in subjects by offering repetition, recall prompt and other stimuli (Glover, 2016). It can help to reduce distraction which is common among students with special need and in turn affect their academic achievement (Oliver & Reschly, 2017). Distracted children pay attention for longer periods when interactive white board is used for instruction in the classroom. Interactive white board may be able to keep students on task for a longer period of time by decreasing their distraction time. Perhaps, students are less distracted and there is an increase in their motivation as were as understanding of concepts being taught in a particular subject (Blanton & Helms-Brezale, 2016).

An interesting presentation in the classroom with the use of interactive white board has a strong motivational effect and thus decreases distraction and increases students' motivation in a particular subject (Glover, 2016).

Interactive white board are visual learning tools that provides retention and recall of information and sequential explanation backed by movement such as "drag and drop" because of the visual orientation, the visual display of interactive white board results in a high level of student motivation (Glover, 2016).

It has also been observed that despite the benefits of interactive white board to the teaching and learning of interactive of various subjects (including economics) its usage largely depends on a lot factors such as; availability, ability to operate this facility and availability of manpower (Okonkwo, 2017).

Digital visual aids as part of modern technologies that are used in teaching economics in secondary schools are material or equipment which were employed while teaching to aid learning by stimulating the senses particularly that of sight (Okeke, 2018). Visual aids are any visible materials which the teachers use to make his or her lesson clearer interesting and understandable. Visual aids are representation of materials such as photographs, diagrams and charts. Visual aids are materials which are employed while teaching to aid learning

by stimulating the senses (Imogie and Agun, 2018). Visual aids arouse the interest of learners and helps the teacher to explain various concepts in a subject easily. They are those instructional aids which are used in the classroom to encourage students' learning process. (Imogie and Agun, 2018).

The use of visual aids for teaching has immense benefits to the learners and teachers. It is helpful in teaching and learning process because it creates a better of subject contents and meanings. It helps students' to recall what have been taught easily (Abdullahi, 2016). According to Yunus, Salehi and John (2018), the use of visual aids such as pictures, videos and projectors helps the learners to understand the abstract ideas that are presented in the subject. Moreover, visual aids creates authentic communication between the learners, teachers and the course content that is being delivered to learners. It makes the learning process be active and engages the learners through the display of materials to the learners' views (Yunus, *et al*, 2018). The use of visual of visual aids in education draws the attention of the learners easily and learn with ease and creates comfort and enhances learners attention in the classroom. When learners sees images, objects or visuals in front of them which matches their interest and choices, they becomes enthusiastic to express their opinion about the content being taught or delivered to them in the classroom (Abdullahi, 2017). When learners get some background information from the visual aids, it becomes easier to talk or contribute in the class as the subject is being taught (Abdullahi, 2017).

Audio as part of modern technologies as materials that are commonly referred to as those without complete dependence on verbal symbols or languages (Anzaku, 2016). Audio when used in teaching specific subjects encourages students' active participation. Audio are rich opportunities for students to develop communication skills while actively engaged in solving meaningful in specific contents in a particular subject (Natoli, 2017). It helps in stimulating the interest of students' in the teaching and learning process. Learning takes place effectively when the teacher sets out to provide learning situations in which a child will learn because of his natural reactions of the provided materials. During the process of learning, the teacher has to provide the learning situation to satisfy the natural reactions of the learner and this through the use of audio aids (Katherine, 2019) the attention of the learners is caught and his interest is also won and he/she is ready to learn (Katherine, 2019). The use of audio resources for teaching in secondary schools makes learning interesting and permanent. Audio methods of instructions facilitates in acquisition, retention and recall of lessons learnt because they seem to evoke the maximum response of the whole organism to the situation in which learning is done (Gopal, 2017)

### **Statement of the problem**

The popularity in the digital and advanced ways of carrying out various activities at different spheres of life has introduced innovations. The educational sector is not left out in the development where modern methods of instructions are adopted to enhance students' comprehension of the concepts in various subjects against the old methods that were used before now to drive home the concepts in a subject.

The issue of teachers not being able to replace traditional mode of instruction with modern and advanced mode of instruction is of great concern looking at the importance of economics as a subject in senior secondary school. Hence, the need for teachers to adopt modern/digitalized mode of instruction becomes paramount so that objective of economics can be adequately achieved. However, it has been observed that most teachers do instructional delivery this therefore, becomes a serious concern (Nwanewezi, 2015).it is on this ground this ground that this study seeks to ascertain the extent of utilization of modern technologies for teaching economics in public secondary schools in Port Harcourt Metropolis.

### **Purpose of the Study**

The main purpose of the study was to determine the extent of utilization of modern technologies for teaching for teaching economics in public secondary schools in Port Harcourt Metropolis. Specifically, the study sought to;

1. Determine the extent of utilization of interactive white board for teaching economic in secondary schools in Port Harcourt Metropolis.
2. Determine the extent of utilization of visual aids for teaching economic in secondary schools in Port Harcourt Metropolis.
3. Determine the extent of utilization of audio aids for teaching economic in secondary schools in Port Harcourt Metropolis.

### Research Questions

The followings research questions guided the study;

1. To what extent is interactive white board utilized for teaching economics in secondary schools in Port Harcourt Metropolis?
2. To what extent are visual aids utilized for teaching economics in secondary schools in Port Harcourt Metropolis?
3. To what extent are audio aids utilized for teaching economics in secondary schools in Port Harcourt Metropolis?

### Hypotheses

The following hypotheses were formulated in the study;

1. There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize interactive white board for teaching economics in secondary schools in Port-Harcourt metropolis.
2. There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize visual aids for teaching economics in secondary schools in Port-Harcourt metropolis.
3. There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize audio aids for teaching economics in secondary schools in Port-Harcourt metropolis.

### METHODOLOGY

The study was on the extent of utilization of modern technologies for teaching economic in secondary schools in Port Harcourt Metropolis. The study adopted a descriptive survey research design. The population of the study consist of 68 economics teachers in 24 selected senior secondary school in Port Harcourt metropolis. The entire population was used for the study. Three purposes, three research questions and three hypotheses guided the study. The instrument for data collection was a self-structured questionnaire titled "Questionnaire on utilization of modern technology for teaching economics in secondary schools in Port Harcourt Metropolis. (QUMTTESS) the instrument was structured on a four point rating skills of High Extent (HE) = 4, Moderate Extent (ME) = 3, Low Extent (LE) = 2, Very Low Extent (VLE) = 1. The instrument was subjected to face and content by three experts (two in Business Education and one in measurement and education department). Test-retest method was used to establish the reliability coefficient of the instrument used to gather data for this study. Twenty (20) copies of the research instrument were administered to Senior Secondary School. Economics Teachers in Modern Boys High School Omoku. After 2 week interval the same instrument was re-administered to the same set of students. Thereafter, Pearson's products Moment Correlation Coefficient was used to computed the data gathered and hereby arrive at reliability coefficient score of 0.86. This shows that the research instrument is reliable. The copies of the research instrument were administered to the respondent used in this study with the assistance of the Economics teachers in the schools investigated, Mean and Standard Deviation were used in analyzing the research questions while t-test was used in testing the hypotheses formulated in the study at 0.05 level of significance. A mean score of 2.50 was the acceptance region.

The boundary limit was thus;

High Extent (HE) = 4 = 3.50 – 4.00

Moderate Extent (ME) = 3 = 2.50 – 3.49

Low Extent (LE) = 2 = 1.50 – 2.49

Very Low Extent (VLE) = 1 = 1.00 – 1.49

**RESULTS**

**Research Question 1:** *To what extent is interactive Whiteboard utilized for Teaching Economics in Secondary Schools in Port Harcourt Metropolis?*

**Table 1:** Mean and Standard Deviation on the Extent Interactive whiteboard are Utilized for Teaching Economics in Secondary Schools.

S/N	ITEMS	OBALGA (28)			PHALGA (34)		
		$\bar{X}$	SD	RMK	$\bar{X}$	SD	RMK
1.	To display information about subject matter so as to motivate students	1.61	0.32	LE	1.42	0.28	VLE
2.	To recall previous lessons that will enhance students' understanding	1.58	0.32	LE	1.29	0.26	VLE
3.	To repeat previous information that can help students to overcome literacy problems	1.45	0.29	VLE	1.26	0.25	VLE
4.	To display images that will help to reduce distraction among students with special needs	1.58	0.32	LE	1.27	0.25	VLE
5.	To display sharp and captivating information that will increase students' interest in the teaching and learning process	1.11	0.22	VLE	1.29	0.20	VLE
<b>Total Mean/SD</b>		<b>1.47</b>	<b>1.47</b>		<b>6.53</b>	<b>1.30</b>	
<b>Grand Mean/SD</b>		<b>1.47</b>	<b>0.29</b>		<b>1.30</b>	<b>0.26</b>	

Source: Field Survey, 2024

The analysis in table 1 shows that all the mean responses are below the 2.50 acceptance region. Thus, interactive whiteboard is not utilized by economics teachers to display information about subject matters display images and display sharp and captivating information.

**Research Question 2:** *To what extent are visual-aids utilized for Teaching Economics in Secondary Schools in Port Harcourt Metropolis?*

**Table 2:** Mean and Standard Deviation on the Extent Visual-Aids are Utilized for Teaching Economics in Secondary Schools in Port Harcourt Metropolis.

S/N	ITEMS	OBALGA (28)			PHALGA (34)		
		$\bar{X}$	SD	RMK	$\bar{X}$	SD	RMK
6.	To facilitate the acquisition of knowledge through auditory and visual stimuli	3.36	0.67	ME	3.00	0.60	ME
7.	To enhance the recall of lessons through auditory and visual stimuli	3.36	0.67	ME	2.97	0.59	ME
8.	To increase the interest of students in a topic through auditory and visual stimuli	3.25	0.65	ME	2.79	0.56	ME
9.	To promote teaching and learning process through auditory and visual stimuli	3.14	0.63	ME	2.94	0.59	ME
10.	To promote the retention of knowledge, through auditory and visual stimuli	3.36	0.67	ME	2.79	0.56	ME
<b>Total Mean/SD</b>		<b>16.47</b>	<b>3.29</b>		<b>14.49</b>	<b>2.90</b>	
<b>Grand Mean/SD</b>		<b>3.29</b>	<b>0.66</b>		<b>2.89</b>	<b>0.58</b>	

Source: Field Survey, 2024

The analysis in table 2 shows that all the mean responses are above 2.50 acceptance region. This, indicates that economics teachers use Visual-aids to enhance lesson plan through pictures and models, concretize learning through visual stimuli simplify learning through pictures and real objects and as well create interest among learners.

**Research Question 3:** *To what extent are audio-aids utilized for Teaching Economics in Secondary Schools in Port Harcourt Metropolis?*

**Table 3: Mean and Standard Deviation on the Extent Audio-Aids are Utilized for Teaching Economics in Secondary Schools in Port Harcourt Metropolis.**

S/N	ITEMS	OBALGA (28)			PHALGA (34)		
		$\bar{X}$	SD	RMK	$\bar{X}$	SD	RMK
11.	To enhance lesson plan through the use of pictures and models	3.21	0.64	ME	3.15	0.63	ME
12.	To concretize learning process through visual stimuli	3.10	0.62	ME	3.18	0.64	ME
13.	To make teaching and learning process real	3.25	0.65	ME	2.97	0.59	ME
14.	To simplify learning in the classroom through pictures and real objectives	3.21	0.64	ME	2.97	0.59	ME
15.	To create interest among learners through slides, pictures and real objects	3.18	0.64	ME	3.26	0.65	ME
<b>Total Mean/SD</b>		<b>15.95</b>	<b>3.19</b>		<b>15.53</b>	<b>3.10</b>	
<b>Grand Mean/SD</b>		<b>3.19</b>	<b>0.64</b>		<b>3.11</b>	<b>0.62</b>	

**Source: Field Survey, 2024**

The analysis in table 3 shows that all the mean responses are above 2.50 acceptance region. This, indicates that economics teachers utilize audio-aids to facilitate acquisition of knowledge enhance recall of lesson through auditory stimuli and promote retention of knowledge through auditory stimuli.

**Hypotheses**

**Hypothesis 1:** There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize interactive Whiteboard for teaching economics in Secondary Schools in Port Harcourt Metropolis.

**Table 4: T-test of Difference between the Mean Ratings of Respondents in OBALGA and PHALGA on the Extent they Utilize Interactive Whiteboard for Teaching Economics**

Groups	N	$\bar{X}$	SD	Df	t-cal	t-crit	Level of Sign	Decision
OBALGA	28	1.47	0.29	60	2.4	2.000	0.05	Rejected
PHALGA	34	1.30	0.26					

**Source: Field Survey, 2024**

The analysis in table 3 shows that the t-calculated is higher than the t-critical (t-cal > t-crit). Therefore, the hypotheses was rejected. Thus, there is significant difference in the mean ratings of respondents in OBALGA and PHALGA on the extent they utilize interactive whiteboard for teaching economics.

**Hypotheses 2:** There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize visual aids for teaching economics in Secondary Schools in Port Harcourt Metropolis.

**Table 5: T-test of Difference between the Mean Ratings of Respondents in OBALGA and PHALGA on the Extent they Utilize Visual-Aids for Teaching Economics**

Groups	N	$\bar{X}$	SD	Df	t-cal	t-crit	Level of Sign	Decision
OBALGA	28	3.29	0.66	60	2.4	2.000	0.05	Rejected
PHALGA	34	2.89	0.58					

**Source: Field Survey, 2024**

From the analysis in table 5 shows that the t-calculated is higher than the t-critical ( $t\text{-cal} > t\text{-crit}$ ). Therefore, the hypotheses was rejected. Thus, there is significant difference in the mean ratings of respondents in OBALGA and PHALGA on the extent they utilize visual aids for teaching economics in secondary school in Port Harcourt metropolis.

**Hypotheses 3:** There is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize audio-aids for teaching economics in Secondary Schools in Port Harcourt Metropolis.

**Table 6: T-test of Difference between the Mean Ratings of Respondents in OBALGA and PHALGA on the Extent they Utilize Audio-Aids for Teaching Economics**

Groups	$\bar{X}$	SD	Df	t-cal	t-crit	Level of Sign	Decision
OBALGA	28	0.64	60	0.57	2.000	0.05	Accepted
PHALGA	34	0.62					

**Source: Field Survey, 2024**

The analysis in table 6 shows that the t-calculated is less than the t-critical ( $t\text{-cal} < t\text{-crit}$ ). Therefore, the hypotheses was accepted. Thus, there is no significant difference in the mean rating of respondents in OBALGA and PHALGA on the extent they utilize audio aids for teaching economics in secondary schools in Port Harcourt metropolis.

## DISCUSSION OF FINDINGS

The analysis in table 1 shows that interactive whiteboard is not utilized by economics teachers in Port Harcourt metropolis to, display information about a subject matter, enhance recall of previous lessons, display images and display shapes capturing information that will increase students' interest in teaching and learning process. This is finding is an agreement with the view of Okonkwo (2017) who opined that despite the benefits of interactive whiteboard in enhancing instructions. Its usage depends on a lot of factors such as; availability, skill and availability of trained manpower to manage it.

The analyzes in table 2 shows that visual aids enhances teachers in the following ways; it enhances lesson plan through use of pictures and models, concretizes learning and simplifies learning in the classroom through pictures and real objectives.

This finding is in agreement with the view of Yunus, Salehi and John (2018) that the use of visual of aids such as pictures, videos and projectors helps the learners to understand abstract ideas that are presented in the subject.

The analysis in table 3 shows that audio aid are utilized by economics teachers to; facilitate the acquisition of knowledge enhances recall of lessons though auditory, stimuli; to increase students' interest in a topic through auditory stimuli and promote the retention of knowledge through auditory stimuli.

This findings is an agreement with the view of Glopal (2017) who opined that the use of audio resources for teaching in Secondary Schools makes learning interesting, permanent, facilitates acquisition, retention and

recall of lessons learnt because they evoke the maximum responses of the whole organization to the situation in which learning is done.

## CONCLUSION

This study investigated the extent of utilization of modern technologies for teaching economics in secondary schools in Port Harcourt Metropolis. The technologies considered were; interactive whiteboard, Digital visual aids and audio aids. The findings revealed that economics teachers utilize visual aids and audio aids at a moderate extent while interactive whiteboard is not utilized by economics teachers,

## RECOMMENDATIONS

Based on the findings in the study, the researcher made the following recommendations;

- a. Interactive whiteboard should be provided by government so that it can be utilized by economics teachers in secondary schools.
- b. More visual aids / facilities should be provided to enhance the teaching of economics.
- c. More audio aids / facilities should be provided to enhance the teaching of economics.

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