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Original Article

UTILIZATION OF ICT TO ENHANCE THE TEACHING OF VOCATIONAL SUBJECTS IN SCHOOLS IN ENUGU STATE

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Abstract This study investigated strategies of utilizing Information and Communication Technology (ICT) to improve the teaching of vocational subjects in secondary schools in Enugu State. Two research questions and four null hypotheses were formulated and tested at 0.05 level of significance. Descriptive survey research design was adopted for this study. The population for the study was made up of all the 194 SSS two and three vocational subject teachers currently serving in the Science, Technical and Vocational schools in Enugu State. Among them are 38 male and 76 female teachers. The total population of 194 was used for the study. No sampling was done, because of the design adopted and the population is manageable. A self-structured questionnaire instrument was used for data collection. Cronbach Alpha reliability estimate was used to obtain reliability indices of .68, and .75, for clusters 1 and 2, respectively. The overall reliability index stood at .86 indicating that the instrument is highly reliable and suitable for the study. Data collected were analyzed using mean with standard deviation in order to answer the research questions. The null hypotheses were tested using t-test statistics at.05 level of significance. Based on the result of this study, the researchers concluded that: demonstration strategy to a great extent assist to improve the teaching of vocational subjects in secondary schools Enugu State. This is also supported by the fact that there is no significant difference in the mean ratings of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State, but there is significant difference in the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. More so, discovery strategy to a great extent assists to improve the teaching of vocational subjects in secondary schools in Enugu State. This is also supported by the fact that there is no significant difference in the mean ratings of male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State, there is no significant difference in the mean ratings of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. The researcher recommended among others that; demonstration and discovery strategies should be highly emphasized and encouraged by the stake holders in education for schools in Enugu State.

Keywords: Strategy, Utilization, ICT, Teaching, Vocational Subjects.

Introduction

Information and Communication Technology (ICT) is a broad term for Information Technology (IT), which refers to all communication technologies including the internet, wireless network, cell phones, computers, software, middle ware, video conferencing, social networking and other media applications and services enabling users to access, retrieve, store, transmit and manipulate information in a digital form. Olusegun (2017), defined ICT as the integration of computing, networking and information processing technology and their application. In the opinion of Dinesh (2016), ICT is a common term referring to the technologies used for collecting, storing, editing and communicating information in various formats. Ezekoka (2018), asserted that ICT means the use of computer-based technology and the internet to make information and communication services available to a wide range of users. It is a term that includes any communication device or application encompassing radio, TV, or cellular phones, computers and network, hardware and software, satellite systems among others (Taskhile, 2019). Taskhile further noted that ICT plays vital roles in the current and future development of societies and nations. Kassane (2017), stated that ICT has affected all sphere of life especially the education system.

Information and Communication Technology (ICT) supports activities involving the creation, storage, manipulation and communication of information together with their related methods, management and applications (Oliver and Chapman, 2019). It has revolutionized every aspect of human endeavour particularly education which is the "blood" that sustains all forms of growth and development globally. The global trend of focus and emphasis on the use of ICT in all works of life has been widely acknowledged. The National Policy on Education (2013), stated that in recognition of the prominent role of Information and Communication Technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need for integration of Information and Communication Technology (ICT) into all levels of education in Nigeria. This is in line with Nwosu and Udofia (2017), who asserted that Information and Communication Technology is an imperative tool for quality education.

The integration of ICT in education has developed positive changes in educational institutions. These positive changes brought in by computer in education necessitated the provision of appropriate infrastructure and ICT facilities, encompassing electricity, telephone, educational software, internet facilities and hardware such as computer, scanners and multimedia projectors among others by the government (Satherasinghe, 2017). Baraket and Bataineh (2018), posited that in education, the use of ICT in the teaching process is seen as a positive change from the use of old-fashioned teaching process. It is important to note that the role of ICT as a change agent for quality education can never be over emphasized. Adeboye (2021), posited that ICT helps in shifting the role of the teacher from that of sole information provider to a facilitator of learning. Supporting Osuji's (2017), assertion that the infusion of ICT in education is seen as means to enhance and extend not only the instructional method but also the learning process. The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2017), stipulated that the benefits of applying ICT in education include, helping to improve quality of education, expanding access to educational opportunities, developing learner-centered teaching, improving learning outcomes and motivating

learners. Moreover, Tinio (2018), asserted that the use of different technologies in combination helps to meet individual differences. Application of ICT in teaching and learning can be influenced by many factors such as the availability of ICT resources in the schools, preparedness of teachers in ICT knowledge and skills, the attitude of school community towards ICT use in education, the way teachers teach in classrooms among others. In the opinion of Ugwu and Nnaekwe (2019), the role of ICT in education include;

- quick access to information
- easy availability of updated data
- collaborative learning
- increasing divergent thinking ability in student
- respect for varied nature of human life
- facilitation of learning processes
- wider learning opportunities for learners.

ICT provides powerful tools to support the shift from teacher-centered to learner-centered paradigm (Udoka, 2016). Son (2014), opined that ICT is a change agent for quality education that tend to improve learning, motivate and engage learners, promote collaboration, foster enquiry and exploration and create a new learner-centered culture. Mbah (2016)., stated that the role of ICT as a change agent for quality secondary education is centered on the teacher and efficient access to curriculum contents. It thus, becomes necessary to ascertain strategies of utilizing ICT to improve teaching especially the vocational subjects in secondary schools. This is what this study was set to do because it is a gap that is long overdue to be filled.

The secondary school is one aspect of educational institutions in Nigeria that is designed specifically to train and prepare students for middle-level services in both manufacturing and service industries. One of the objectives of secondary education according to Atuyi (2019) is the acquisition of both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society. It must be emphasized that secondary school education in Nigeria is for six years duration, junior secondary school (3 years) and senior secondary school (3 years). The two stages are both vocational and academic in nature. The broad goal of secondary education as stated in the National Policy on Education is to prepare the individual citizen for useful living within the society and preparation for higher education (FRN, 2013). Education all over the world is regarded as an indispensable tool for enhancing economic growth and national development. It is seen as the cornerstone of development because it forms the basis of literacy, skill acquisition, technological advancement, knowledge acquisition and ability to harness the natural resources of the environment (Okoro, 2014). Antai and Anam (2019), asserted that education nurtures better citizens and helps to upgrade the general standard of living in a society. The education sector in any country is very important because education supplies the skilled manpower needed for the achievement of national economic goals and objectives. In the opinion of Adeogun (2020), education is a major instrument for tackling unemployment, poverty and ignorance. It is on this basis that the Federal Republic of Nigeria (FRN, 2013) outlined in her National Policy on Education, the cardinal aims of education which include among others;

- the development of the intellectual capacity of individuals to understand and appreciate their environment; and

- the acquisition of both physical and intellectual skills which will enable individuals develop into useful members of the community. These skills are acquired in formal education settings from primary, secondary and tertiary institutions such as universities, polytechnics and colleges of education. For the purpose of this study, the focus will be on secondary education.

The role of ICT in skilled manpower development through vocational subjects in secondary schools cannot be overemphasized. In this technology-driven age, everyone requires ICT competence to survive. Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Adomi and Anie, 2016). This calls for early acquisition of ICT skills by students and teaching of vocational subjects in the secondary schools. According to Lemke and Coughlin (2019) ICTs have the potential to accelerate, enrich, and deepen vocational skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening vocational teaching in Nigerian secondary schools. The ability to use computers effectively has become an essential part of everyone's education. The demand for computer/ICT literacy is increasing in Nigeria, because employees realize that computers and other ICT facilities can enhance efficiency. On the other hand, employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literate. With the high demand for computer literacy, the teaching and learning of vocational subjects in secondary schools has become a major concern among researchers and stakeholders of education (Yusuf, 2015). Emuku and Emuku (2017) asserted that new instructional techniques that use ICTs provide a different modality of instruments. For students, according to the authors, ICT usage, allows for increased individualization of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in most secondary schools. In a related view, Goshit (2016), stated that ICT integration and application in schools' curriculum in Nigeria will prove beneficial in improving Nigeria's vocational education system and giving students a better education. In view of the above, Aleke (2016), posited that utilizing ICT to improve teaching vocational subjects in secondary schools, requires the adoption of some techniques and strategies. The ICT strategies, which secondary school teachers can employ in teaching of vocational subjects according to Odumosu (2014), include; demonstration strategy and discovery strategy.

Demonstration strategy involves the presentation of procedures and processes to be learned. Demonstration is a means of simplifying high standard for the process being presented (Udoka, 2016). Rex (2017), noted that it creates a high degree of attention, concentration and exploits the students' interest. The skills acquired through demonstration enables the learner to develop poise and the ability to talk and act at the same time (Petterson, 2021). Adeniyi (2021), asserted that demonstration provides a concrete and realistic visual picture of what is being presented to supplement word images and usually results in a more lasting impression. It conserves time and can be used with small or large groups of any age under controlled conditions. However, demonstration requires careful planning, detailed preparation, and consideration to make is

effective. Udoka (2016), posited that without proper direction and guidance, students may concentrate upon the teaching aids and ignore the lesson itself. Aleke (2016), stated that demonstration strategy makes for easy understanding of contents and instructions as well as discovery strategy with the use of ICT.

Discovery strategy is described as the keynotes of modern education. It involves the teacher making a list of activities in his note of lesson of what students should learn using ICT tool (Odumosu, 2014). Odumosu, added that students learn best by doing and find interest and enjoyment in participation. In the opinion of Wagner, Hassanein, and Head (2014), discovery strategy is quite logical in the teaching of vocational skills because it helps the students through instructional activity to discover and acquire the skill without much guidance. Although teaching by discovery is not an easy task. It requires longer time for the students to form a generalization of their own than it is for them to learn one that is presented to them prescriptively. This means that the teacher must work harder to teach a successful discovery lesson (Odumosu, 2014). A discovery activity is a lesson designed in such a way that a student, through his own mental processes discovers concepts and principles. For student to make discoveries he has to perform certain mental processes such as observing classifying, measuring, predicting, describing, informing, etc. for example a students may discover what a nutrient is from a concept of food group or later may discover a scientific principle that nutrients only come from food (Mbah, 2016).The most important factor in teaching vocational subjects is to ensure that the intended skills are learnt at the end of each instructional process.

Research reports by Aleke (2016), and Udoka (2017), noted that the persistent poor achievement of students in vocational subjects at Senior Schools Certificate Examination (SSCE) leaves one in doubt about the effectiveness of instructional ICT tools utilized by the teachers for the teaching these vocational subjects. Several reasons have been adduced for the problem. Akinolu (2016), hinged it on poor ICT skills. Neji (2021), blamed it on learners' personal characteristics. Several other researches attribute it to inadequate, inappropriate and perhaps non-utilization of appropriate teaching strategy. These authors lamented that teaching vocational subjects in secondary schools in conventional classrooms can be defective without ICT (Oludipe, 2021 & Olufunke, 2022). Following from the reactions of these authors and researchers, one may begin to question the effectiveness of the secondary school teachers with respect to teaching vocational subjects, without application of the requisite ICT tools. This is so because, effective teaching of vocational subjects requires availability of efficient teachers who will eventually, enhance improved performance of students in vocational subjects in both internal and external examinations irrespective of their gender.

Teacher's gender are important factors to consider in the use of ICT in teaching vocational subjects. Gender is a socially learned behavior and expectation associated with male and female (Asogwa, 2023). It is described as the biological sex of individuals in terms of being male or female. In Nigeria society, there are differences and inequalities between women and men in responsibilities assigned, activities taken, access to and control over resources as well as possession and application of skills. (Adigwu, 2014). Eunice, Selpher and David (2015), observed that there is a significant relationship between the secondary school teachers' gender and ICT usage in secondary school teaching.

Alhourani (2013) argues that gender does not impact on secondary school teachers ICT utilization. Aleke (2016), revealed that male secondary school teachers were effective in utilization of ICT more than their female counterparts. The issues of gender have gained much attention with little or no conclusion. This study therefore, intends to ascertain male and female teachers' utilization of ICT in improving the teaching of vocational subjects in Enugu State.

Another factor that may influence teachers' utilization of ICT in improving the teaching of vocational subjects in secondary schools in Enugu State is location. Location has to do with the area or place the school is situated. Location may be defined as a place of settlement, activity or residence. Ibe (2018), noted that schools located in the urban areas are better financed and funded than those in the rural areas. Wagner, Hassanein and Head (2014), pointed out that ICT facilities are in low supply in the rural schools, thus, the utilization of ICT in teaching in rural secondary schools might differ from that of the urban secondary schools. Study by Leem and Lim (2017), revealed that rural and urban schools' teachers differ in ICT utilization as a result of poor security situation in the rural schools.

The area of this study includes both urban and rural locations, hence the study determined if strategies of utilizing ICT tools to improve teaching of vocational subjects in secondary schools was influenced by the location of the schools. Considering the fact that ICT utilization in improving the teaching of vocational subjects in secondary schools in Enugu State will go a long way to improve students' abilities and performance both in school and out of school, therefore it is essential to determine possible strategies of utilizing ICT to improve the teaching of vocational subjects in secondary schools Enugu State. This is what this study sought to do because no study known to the researcher ever investigated it.

Statement of the Problem

Integration of ICT into education requires the teachers especially at the secondary school level to be at the fore front of ICT utilization. Efforts had been made by the government both at the state and national levels to equip schools with ICT tools and facilities with the expectation that teachers ought to be using them in performing many of their functions as teachers, However, there is an indication of poor utilization of ICTs tools to improve the teaching of vocational subjects in secondary schools which manifests as students' poor academic achievement in vocational subjects.

Secondary school students' academic achievement in vocational subjects especially in SSSCE conducted by WAEC and NECO has been below expectation. This has been persistently so for decades before the introduction of ICT into teaching in the schools. Interestingly, the persistent, under-average performance of students in WAEC/SSSCE has continued to generate several research concerns among stakeholders on the factors responsible for such poor performance as well as possible ways to combat this poor trend of performance. Therefore, the problem of this study stated in question form is: what are the strategies of utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State?

Purpose of the Study

The main purpose of the study was to determine strategies of utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State. Specifically, the study sought to ascertain the;

1. extent to which demonstration strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State.

2. extent to which discovery strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State

Research Questions

The following research questions guided the study;

1. To what extent does demonstration strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State?

2. To what extent does discovery strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State?

Hypotheses

The following null hypotheses were formulated and tested at .05 level of significance.

Ho_1: There is no significant difference in the mean response scores of male and female teachers on the extent demonstration strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State.

Ho_2: There is no significant difference in the mean response scores of male and female teachers on the extent discovery strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State.

Ho_3: There is no significant difference in the mean response scores of urban and rural teachers on the extent demonstration strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State.

Ho_4: There is no significant difference in the mean response scores of urban and rural teachers on the extent discovery strategy assist to improve the teaching of vocational subjects in secondary schools Enugu State.

Method

Descriptive survey research design was adopted for this study. According to Nworgu (2015), survey research is one in which a group or items considered to be representatives of the entire group. The information is usually collected by means of questionnaire or tests, although sometimes also by means of observation and interview schedules. The population for the study is made up of all the 194 SSS two and three vocational subject teachers currently serving in the Enugu State Science, Technical and Vocational schools in Enugu State. Among them are 38 male and 76 female teachers. This is based on the data obtained from the Enugu State Science, Technical and Vocational Schools Management Board (STVSMB, 2023/2024). The total population of 194 was used for the study. No sampling was done, because of the design adopted and the population is manageable. The researchers developed a self-structured instrument with the title "Strategies of Utilizing ICT in Teaching Vocational Subjects" (SUICTTVS). The instrument had two sections; A and B. Section A contains the respondents' personal information while section B is divided into two clusters with 30 items structured to assist the researchers in providing clues to the research questions that guided the study. Cluster 1 is on demonstration strategy with 15 items. Cluster 2 is on discovery strategy with 15 items. The response format for the instrument is a 4-point scale of Very Great Extent (VGE)=4 points: Great Extent (G E) =3 points: Little Extent (LE)=2points.VeryLittle Extent (VLE)=I point.

The instrument was validated by two experts, two from the Department of Technical and Vocation Education, and one from the Measurement and Evaluation unit, Mathematics and Computer Department, all from the Faculty of Education in Enugu State University of Science and Technology. To this end the researcher attached the purpose of the study, research questions and hypotheses that were formulated to guide the study. They used them to

assess the instrument in terms of clarity, relevance and suitability of the items within the instrument. The researcher conducted a trial test using 20 respondents from Secondary school teachers in Ebonyi State. The responses to the various items of the questionnaire were used in computing its reliability using Cronbach Alpha reliability estimate. Reliability indices of .68, and .75, where obtained for clusters 1 and 2, respectively. The overall reliability index stood at .86 indicating that the instrument is highly reliable and suitable for the study. The researcher administered the instrument directly to the 194 respondents using six research assistants. The research assistants were briefed by the researchers on the conduct of the exercise, during which they were acquainted with the purpose of the study and how the questionnaire should be administered and collected. Appointments were booked with the respondents for collection at a later day for those who were not able to fill their own copies of the instrument because of the nature of their job. The researcher and the research assistants were able to retrieve only 114 copies of the distributed questionnaire instrument, while 80 copies were not retrieved. The data collected were analyzed using mean with standard deviation in order to answer the research questions. The null hypotheses were tested using t-test statistics at.05 level of significance. For the decision rule, all the items with mean score of 2.50 and above were accepted while those with mean score below 2. 50 were rejected. For the hypotheses, if the t-calculated at .05 level of significance is less than t-value or critical value of the t-test, the null hypotheses were not rejected, but if otherwise the null hypotheses were rejected.

Results

Research Question 1:

To what extent does demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State?

Table 1: Mean Responses and Standard Deviation of the Respondents on the Extent Demonstration Strategy Assist in Improving the Teaching of Vocational Subjects in Secondary Schools Enugu State.

N=114

S/N	Extent demonstration strategy improve teaching of vocational subjects include;	VGE	GE	LE	VLE	$\bar{x}$	SD	DEC
1	arousing the spirit of discovery in students	42	34	38	0	3.04	0.84	GE
2	motivate students in teaching and learning process	41	32	39	2	2.98	0.88	GE
3	improving students' concentration	36	45	32	1	3.02	0.79	GE
4	keeping students active in the learning process	31	31	31	21	2.63	1.07	GE
5	using models in explanation to draw students' attention	22	32	28	32	2.39	1.09	LE
6	helping students to understand the topic easily	42	42	25	5	3.06	0.88	GE
7	improve students' concentration through questioning	32	24	35	23	2.57	1.10	GE
8	drawing students' interest in learning with the aid of blackboard during demonstration.	19	35	25	35	2.33	1.08	LE
9	imparting maximum knowledge to students	34	44	36	0	2.98	0.79	GE
10	improving students' psychomotor ability	31	30	31	22	2.61	1.08	GE
11	enhancing the cognitive domain of students	24	34	27	29	2.46	1.09	LE
12	easy evaluation of students	43	41	30	0	3.11	0.79	GE

13	attracting students interest using visual posters	47	34	33	0	3.12	0.83	GE
14	motivate students using power point	43	42	24	5	3.08	0.87	GE
15	using visual flip to help students understand easily	28	22	37	27	2.45	1.11	LE
	Grand Mean					**2.80**	**0.95**	

From Table 1 above, the results of data analysis for research question 1 indicated that items (1,2,3,4,6,7,9,10,12,13 and 14) had mean responses that were higher than the cut-off point of 2.50.Only items (5,8,11,and15) had mean responses that were below the cut- off point of 2.05. The value of the grand mean was also high. This implied that the respondents agreed that demonstration strategy to a great extent assist to improve the teaching of vocational subjects in secondary schools Enugu State.

Research Question 2

To what extent does discovery strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State?

Table 2: Mean Responses and Standard Deviation of the Respondents on the Extent Discovery Strategy Assist to Improve the Teaching of Vocational Subjects in Secondary Schools Enugu State.

N = 114

S/N	**Extent discovery strategy assist to improve the teaching of vocational subjects include;**	**VGE**	**GE**	**LE**	**VLE**	$\bar{x}$	**SD**	**DEC**
16	developing students' sense of independence	41	36	36	1	3.03	0.85	GE
17	foster curiosity in students	37	35	41	1	2.95	0.85	GE
18	Improve student's memorization	29	47	38	0	2.92	0.77	GE
19	improve students' collaboration with pears in problem solving	35	42	37	0	2.98	0.79	GE
20	helping students to explore objects	35	42	37	0	2.98	0.79	GE
21	ensures higher level of retention	56	58	0	0	3.50	0.50	GE
22	improving student's observation skills	29	47	38	0	2.92	0.77	GE
23	developing students' metacognitive skills	35	42	37	0	2.98	0.79	GE
24	help students to generate their own problem-solving strategy	56	58	0	0	3.49	0.50	GE
25	enhancing students' creative skills	29	47	38	0	2.92	0.77	GE
26	developing a sense of independence in students	29	47	38	0	2.92	0.77	GE
27	builds on students' prior knowledge and understanding	29	48	37	0	2.93	0.76	GE
28	support active engagement of the students in the learning process	29	48	37	0	2.93	0.76	GE
29	enables the development of life-long learning skills	27	37	24	26	2.57	1.08	GE

30	making students responsible for their own mistakes and results	27	3	24	26	2.57	1.08	GE
	Grand Mean					**2.97**	**0.78**	

From Table 2 above, the mean responses to the items (16-30) were higher than the cut-off point of 2.50, implying that the respondents agreed that discovery strategy to a great extent assist to improve the teaching of vocational subjects in secondary schools in Enugu State.

Hypotheses

Hypothesis 1:

There is no significant difference in the mean response scores of male and female vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools Enugu State.

Table 3: t-test on the mean ratings of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

GENDER	N	Mean	Std. Deviation	t	df	Sig.	Dec.
MALE	38	2.70	1.092	1.303	112	.193	NS
FEMALE	76	2.57	1.093				

Table 3 shows that the t value for the difference in mean rating of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State is 1.303, significant at .193 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State

Hypothesis 2:

There is no significant difference in the mean response scores of male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Table 4: t-test on the mean ratings of male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

GENDER	N	Mean	Std. Deviation	t	df	Sig.	Dec.
MALE	38	2.64	1.09	.676	112	.289	NS
FEMALE	76	2.56	1.123				

Table 4 shows that the t value for the difference in mean rating of male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State is .676, significant at .289 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of

male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Hypothesis 3:

There is no significant difference in the mean response scores of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Table 5: t-test on the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

LOCATION	N	Mean	Std. Deviation	t	df	Sig.	Dec.
URBAN	97	2.54	1.090	-4.573	112	.000	S
RURAL	17	3.00	.803				

Table 5 shows that the t value for the difference in mean rating of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State is -4.573, significant at .000 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore rejected. This means that there is significant difference in the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Hypothesis 4:

There is no significant difference in the mean response scores of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Table 6: t-test on the mean ratings of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

LOCATION	N	Mean	Std. Deviation	t	df	Sig.	Dec.
URBAN	97	2.99	.845	.523	112	.596	NS
RURAL	17	2.94	.814				

Table 6 shows that the t value for the difference in mean rating of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State is .523, significant at .596 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Discussion of Findings

Research question one, attempted to elicit the perception of the respondents on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. Out of fifteen items articulated to answer the research question posed only four items got a mean point that indicated little extent. This shows that Vocational subject teachers agreed that demonstration strategy to a great extent assist to improve the teaching of vocational subjects in secondary schools Enugu State. This finding agrees with Adeniyi (2021) which asserted that demonstration provides a concrete and realistic visual picture of what is being presented to supplement word images and usually results in a more lasting impression. It conserves time and can be used with small or large groups of any age under controlled conditions. Therefore, there is need for an increased emphasis on demonstration strategy in utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State.

Comparison between the mean response scores of male and female vocational teachers and their extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State, showed that there is no significant difference in the mean rating of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding is in line with Alhourani (2013) who argued that gender does not impact on secondary school teachers ICT utilization. Similarly, on the influence of location of schools, it was found in this study that there is significant difference in the mean rating of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding is in line with Leem and Lim (2017) which stated that rural and urban schools' teachers differ in ICT utilization as a result of poor security situation in the rural schools. Therefore, there is need to improve on demonstration strategies of utilizing ICT to improve the teaching of vocational subject in rural schools.

Research Question two which investigated the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State, showed that Vocational subject teachers agreed that discovery strategy to a great extent assist to improve the teaching of vocational subjects in secondary schools in Enugu State. This finding agrees with Wagner, Hassanein, and Head (2014) which posited that discovery strategy is quite logical in the teaching of vocational skills because it helps the students through instructional activity to discover and acquire the skill without much guidance.

Investigation for significant difference between the mean response scores of male and female vocational teachers on the extent to which discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State, showed that there is no significant, difference in the mean rate of male and female vocational teachers on the extent to which discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding is in consonance with Aleke (2016) which noted that male secondary school teachers were effective in utilization of ICT more than their female counterparts. Comparism between the mean rating of urban and rural vocational subjects' teachers on the extent to which discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State, indicated that there is no significant difference in the mean rating of

urban and rural vocational subjects' teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding disagreed with Lim (2017) which noted that rural and urban schools' teachers differ in ICT utilization as a result of poor security situation in the rural schools. Considering the fact that ICT utilization in improving the teaching of vocational subject schools in Enugu State will go a long way to improve students' abilities and performance, therefore it is important to ensure the utilization of discovery strategies of utilizing ICT to improve the teaching of vocational subjects in rural and urban secondary schools in Enugu State.

Conclusion

Based on the findings of this study and the discussions that followed, conclusions were drawn as follows:

1. Demonstration strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools Enugu State.
2. There is no significant difference in the mean ratings of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State
3. There is significant difference in the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.
4. Discovery strategy to a great extent assists to improve the teaching of vocational subjects in secondary schools in Enugu State.
5. There is no significant difference in the mean ratings of male and female vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.
6. There is no significant difference in the mean ratings of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.

Educational Implication of the Findings

The finding of this study holds implication for the teachers, students and the government as well.

The vocational subject teachers through the study are now equipped and encouraged in the use of demonstration and discovery strategies in utilizing ICT to improve the teaching of vocational subjects in schools in Enugu State, thereby improving teaching of vocational subjects in schools. The nature of vocational subjects demands that it should be taught practically, but since the practical vocational lessons are rarely done effectively. This holds a serious implication on the standard and status of vocational subjects being taught in schools, therefore, these strategies will promote quick understanding by assisting learner's attention and give first-hand experience which are not easily forgotten to students, stimulate creative expression in students and encourage active participative and practical knowledge of the vocational subjects.

The findings of this study hold a strong implication for students as they are provided with very rich visual experience through these strategies which will afford them the opportunity to manipulate materials for direct concrete experience which will definitely boast students' achievement in both internal and external examinations.

The findings of this study hold strong educational implication to the government which is saddled with the responsibility of ensuring quality education as a vital tool for human and economic development.

Efficient adoption of demonstration and discovery strategies help to accelerate, close up the gap and inability of government in giving expected attention to provision of educational facilities and instructional materials for teaching of vocational subjects in schools in Enugu State.

Recommendations

Based on the findings and implication of the results, the following recommendation was made:

1. Demonstration and discovery strategies should be highly emphasized and encouraged by the stake holders in education for schools in Enugu State.
2. Deliberate efforts should be made by education supervisors in ensuring that the vocational subject teachers utilize demonstration and discovery strategies in utilizing ICT to improve teaching of vocational subjects in secondary schools in Enugu State.

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