AN ASSESSMENT OF VOCATIONAL TEACHERS' USES OF INFORMATION AND COMMUNICATION TECHNOLOGY'S (ICT'S) IN TECHNICAL COLLEGES IN RIVERS STATE

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Abstract

The study south to assess vocational teachers' uses of information and communication Technology's in technical colleges in Rivers State. Four research questions guided the study. The study adopted descriptive survey design. The study was carried out in Rivers State. The population of the study was one hundred and fourty eight (148) comprising 110 male teachers' and 38 female teachers. A sample size of 120 respondents was used for the study. A modified instrument tagged Teachers' ICT's use survey adapted from ICT survey indicator for teachers' and staff by UNESCO (2004) and ICT teachers survey by Bwala, Hajja and Ibrahim (2018) were used for the collection of data. The results of the study showed that vocational teachers' in the four technical colleges owned by Rivers State government generally have access to ICT's in their various schools except e-mail and internet the reason been that their schools are not connected, government and school anchorites do not organize workshop/seminar for vocational teachers on the use of ICT's and teachers' lack of expertise in using ICT's was indicated as being the prominent factors hindering teachers' readiness and confidence in using ICT's during teaching and learning period. Furthermore, the results showed that teachers' perceived ICT's as being easier and very useful in teaching and learning. It was recommended among others that technical colleges in Rivers State should be connected with e-mail and internet service for easy access for teachers'.

Keywords: Assessment, Vocational Education, Teachers, ICT, Technical Colleges.

Introduction

The emergence of ICT's is rapidly revolutionizing the social, economic and even the educational aspects of the first and second world countries. Third world countries (Developing countries) like Nigeria, is not an exception. The trend is moving round, focusing and emphasizing on the use of ICT in all spheres of life education inclusive. The change from teacher-centered education system to learner centered education all over the world in the past few years has contributed to the use of ICT in education. In order to achieved a "knowledge driven world" as conceived by Hawkins and Inwent in Bawala, Hajja and Ibrahim (2018), it means that education reform practices should focus on equal access and quality of education which should highlight the importance of change in the education sector through the use of ICT's and equipping new generations with enhanced skills to operate in the 21st century.

According to Sanga cited in Ndaguba and Umezuoke (2021) the use of ICT in Nigeria and other African countries generally is increasing and dramatically growing. However, while there is a great deal of knowledge about how ICT are been used in developed counties, there is no much information on how ICT is being introduced into schools in developing countries. UNESCO in Ikenga and Adagwe (2022) defines ICT as those aspects of scientific, technological and engineering knowledge, and administrative methods that are used to access and process information the interaction between computer and tools with human beings and their social, economic and cultural matters. In the same Vein, Uke and Odiga (2019) defined ICT as a term used to access, retrieve, store, organize, manipulate, produce electronic and other automated means. Kashim and Maruwa (2022) noted that the availability of ICT vis-à-vis access

in terms of ratio of teachers; and students differs significantly. Despite this, Park (2023) maintains that the new and emerging technologies changes the traditional process of teaching and learning and the way education is managed. While Information and Communication Technology is an important area of study in its own, it is having a major impact across all curriculum areas.

In terms of communication at present, easy worldwide communication provides instant access to vast array of data, challenging assimilation and assessment skills (Franklin and Jentez, 2022). Rapid communication plus increases access to ICT in home, at work, and in educational establishment, could mean that learning forces constant evaluation of teaching process, it does not end there. The current issue of the use of ICT in the classroom by the teacher. This includes specially the use of computer, internet, telephone, digital camera, data projector, and other related materials. As the world continues to revolve around technology, teachers' need to continue to incorporate these new technologies into their teaching tasks in line with global trends in education.

Several studies such as (Buba, 2019, Mashall, 2021, Ugwu and Ibe, 2020) revealed that some teachers in most Nigerian secondary schools have computer/laptops and that these teachers that has laptops/computers are not connected to internet while some others cannot access internet using personnel mobile devices. According to Olukoya and Abiola (2022), in a study that investigated biology teacher's knowledge and use of ICTs in Ondo State, reported that the availability of computers and internet was non-existent in virtually all the schools studied. Zamani and Onoja (2018) in a study on teachers' use of ICT in Benue State concluded that most secondary schools investigated have either insufficient or no ICT's tools to cater for the increasing population of students in the schools and where they are available, they are by implication a matter of out-of-bound to the students. Information and Communication Technology (ICT) are information handling tools that are used to produce, store, and process, distribute and exchange information. These different tools are now able to work together, and combine to form net worked world which reaches into every corner of the globe. Apart from this, the use of ICT in education has the following functions such as' promoting students' intellectual qualities through higher order thinking problem solving, improved communication skills and deep understanding of the learning tools and concepts to be taught, promoting supportive teaching and learning environment, improving school attendance level and enabling the creation of a new and more effective curriculum. According to Ibrahim and Orji (2017) students who uses ICT's gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problem outside the classroom. In addition, through ICT, students extend and deeper their understanding, investigation and inquiry according to their needs and interest when access to information is available on multiple levels.

Technologies available in classroom today ranges from simple tool-based applications (such as word processors) to online repositories of scientific primary data. Other are primary historical documents, hand held computers, close-circuit television channels, and two-way distance learning classroom. Chang and Swtz (2017) assert that even the cell phones that many people now carry with them can be used to learn. According to Steven and Clark (2021), each of the technologies is likely to play a different role in students' learning. Students' can learn from computers where technology are used essentially as tutors and serve to increase students' basic skills and knowledge. Teachers in schools that use technologies in teaching and learning process are likely to encourage collaborating learning and improve the quality of instructions.

Despite the importance of ICT in teaching and learning process, Kelly and Crown (2019) state that there are a number of factors which have been identified as hindrance to teachers' readiness and confidence

in using ICT in teaching and learning process, these factor according to the authors include; teacher expertise, irregular power supply, weak infrastructure, lack of skill to evaluate the use and role of ICT in teaching. Similarly, Davis and Clifford (2021) in a study on developing maturity in learning with technologies revealed that the most significant barriers identified as hindrance to teachers' readiness and confidence in using ICT are linked to staff attitude and training of staff in the use of ICT access to ICT materials and ICT skill. On perceived ease of using ICT. Jeremiah (2021) in a study carried out in some selected secondary schools in Delta State revealed a number of factors which have been identified as factors that relate to the perceived ease of use of ICT and a wide range of skills and competences which teachers felt they needed in to find ICT easy to use. Some of these factors are regular use and experience of ICT outside the classroom, ownership of a computer, and confidence in using ICT. According to Cambell (2017) other perceived ease factors of using ICT by teachers are; making the lesson more interesting, ease, more fun for them and their students' and more enjoyable. If teachers; see no need to question or change their professional practice according to Jeremiah (2021) they are unlikely to adopt the use of ICT. However, if they perceived ICT to be useful to them, for effective teaching that will improve their students learning, then according to empirical evidence of previous studies by Davis and Clifford (2021), they are more likely to have positive altitude to the use of ICT in the classroom. A number of factors contributed to teachers' perceived usefulness of ICT. Some of these factors include that ICT makes their lesson more interesting, it makes their lesson more diverse, it gives them more confidence.

Meanwhile, it is observed that some studies have been conducted on the uses of ICT by teachers in various schools particularly on the issue of their professional development. Most of these studies were carried out in developed countries where the use of ICT has come of age, and where there are resources and materials to maintain them (Charles, 2019). However, in Nigeria, the use of ICT by teachers at all level of our educational system is beginning to gain popularity and researchers in the area have just started to emerge. The use of ICT by teachers to teach the students is highly advantageous. The use of ICT enables the teachers to demonstrate understanding of the opportunities and implications of the uses for teaching and learning. In the light of these therefore, more research is needed to showcase further development of ICT use by teachers in Nigeria. Hence, there is the need to assess vocational teachers; uses of ICT in technical colleges in Rivers State.

Statement of the Problem

Students in secondary schools are supposed to perform very well in their academic programme due to the rapid spread of technology around the world in recent times, but in Nigeria there is a decline in the academic performance of students in secondary school. This poor performance has been recorded for some years by the examining bodies of Junior Secondary School Certificate Examination (JSSCE), Senior Secondary School Examination Conducted by WASSCE and National Board for Technical Education (NBTE). This poor performance has been attributed to teachers' lack of the necessary digital competence to utilize ICT in instruction delivery and non-availability of ICT resources (Onisoya and Dumezia, 2021). It has also been recorded in the past, according to Echikwa, Uzor and Uwem (2022), that students acquire relevant skills during teaching and learning in secondary schools which makes them fit into the society properly after their schooling period but the reverse is now the case. Several complains has been attributed to this among which is failure of government to organize regular training for teachers on the use of ICT in teaching and learning, lack of ICT materials in schools. Hence, the essence of the study was to assess vocational teachers' uses of ICT for teaching in technical colleges in Rivers State.

Aim and Objectives of the Study

The aim of this study is to assess vocational teachers' uses of ICT in technical colleges in Rivers State. Specifically, the objectives seek to:

i. determine which ICT do vocational teachers' have access to in their schools and what is the frequency of their access per week?
ii. determine the factors hindering vocational teachers' readiness and confidence in using ICT.
iii. determine the teachers' perception about the perceived ease of using ICT.
iv. determine the teachers' perception about the perceived usefulness of ICT.

Research Questions

The following research questions were posed to guide the study:

i. What ICT's do vocational teachers have access to in their schools and what is the frequency of heir access per week?
ii. What are the factors hindering vocational teachers' readiness and confidence in using ICT?
iii. What is the teachers' perception about the perceived ease of using ICT?
iv. What is the teachers' perception about the perceived usefulness of ICT?

Methodology

The study adopted descriptive survey research design. According to Bolagi and Raji in Wordi (2021), descriptive survey design is aimed at collecting data or describing in a systematic manner the characteristic feature or fact about a given population. The population of the study was one hundred and forty-eight (148) comprising 110 male vocational teachers' and 35 female vocational teachers of the four-government owned technical colleges in Rivers State as at 2024/2025 academic session obtained from the office of Vice Principals (Academics) of various technical colleges. A total of 120 vocational teachers were sampled through random sampling technique.

A modified instrument tagged "Teachers ICT's Use Survey, adapted from ICT Survey Indicator for Teachers' and Staff" by UNESCO in 2004 and ICT Teachers' Survey by Bwale, Hajja and Ibrahim (2018) were used to collect data for the study. The instrument consists of two sections. The first section addressed the respondents' demographic information like age, sex, name of school, the class taught and others. The second section contains the questionnaire items that addressed the research questions. There are 19 in number. Respondents were required to respond to items 1-19 by talking as applicable while items 20 to 32 are 4 points rating scale in which the respondents were to choose from Strongly Agree (SA), Agree (A), Disagree (DA) and Strongly Disagree (SD). To ascertain the reliability of the instrument after modification, it was administered on 25 respondents who were not part of the sample using Cronbach Alpha reliability method. The reliability coefficient obtained was 0.86. A total of 120 copies of the instrument were administered to the respondents directly by the researchers with the help of five research assistants.

The total number of the instrument retrieved after two weeks was 116 and was used for data analysis, the data collected from the respondents were analyzed using frequency count and percentage for research questions 1 and 2 while mean and standard deviation were used to analyze research question 3 and 4. Any item whose weighted mean is 2.50 and above were regarded as "Agree" while any item whose weighted mean is below 2.50 was regarded as "Disagree".

Results

The results of the study are presented in Tables 1-5 in line with the research questions.

Research Questions One: What ICT's do vocational teachers' have access to in their school and what is the frequency of their access per work?

Table 1a: Teachers' Responses on types of ICT's that they have access in their schools N = 116

S/N	*ICT's*	*No of Responses*	*% of ICT's Access Per Week*
1.	Digital camera	10	8.62
2.	Internet	-	-
3.	Computer	54	46.55
4.	E-mail	-	-
5.	Interactive response system	-	-
6.	Video equipment	19	16.38
7.	Scanner	20	17-24
8.	Data projector	13	11.21
	Total	**116**	**100**

Source: Field survey, 2025.

The result in Table 1a reveals that 10 (8.62%) of the teachers' who took part in the study indicated that digital camera is the type of ICT that they have access to in their schools, 54 (46.55%) teachers indicated that they have access to computer, 19 (16.38%) teachers; indicated that they have access to video equipment, 20 (17.24%) teachers indicated that they have access to scanner in their school and 13 (11.21%) indicated that they have access to data projector. No teachers indicated that they have access to the e-mail, internet and interactive response system. The result of the study indicates that respondents have access to ICT, except that they do not have access to e-mail, interactive response system and the internet. This may be due to the fact that their schools are not connected to have access to internet, e-mail and interactive response system.

Table 1b: Teachers' Responses on the Frequency of Access to ICT in their Schools. N=116

S/N	*Hour of Access Per Week*	*No. of Responses*	*% Frequency of ICT access for Teaching*
9.	0-5 hours	25	21.55
10.	6-10 hours	20	17.24
11.	11-15 hours	35	30.17
12.	16-20 hours	15	12.93
13.	21 hours and above	21	18.10
	Total	**116**	**100**

Source: Field survey, 2025

The result in Table 1b reveals that the majority of the teachers 35 (30.17%) access ICT in their schools between 11-15 hours per week. The table also revealed that 25 teachers (21.55%) access ICT between 0-5 hours per week. Only 18% of the teachers access ICT 21 hours and above per week in their schools. This indicate that vocational teachers access ICT in technical colleges in Rivers State only that variation exist in the frequency to which they access them in their various schools.

Research Question Two: What are the factors hindering vocational teachers' readiness and confidence in using ICT?

Table 2: Teachers' Responses on Factor Hindering their Readiness and Confidence in using ICT's N = 116

S/N	*Factors*	*No of Responses*	*%*
14.	Lack of motivation on teachers in using ICT	22	18.06
15.	Lack of knowledge of how to evaluate the sue of ICT	27	23.28
16.	Teachers lack of expertise with ICT's	35	30.17
17.	Insufficient knowledge of how to use ICT equipment	15	12.93
18.	Lack of confidence in using ICT	7	6.03
19.	Insufficient knowledge of appropriate soft-ware	10	6.03
	Total	**116**	**100**

Source: Field survey, 2025

The result in Table 2 revealed that the prominent factor among other factors hindering vocational teachers' readiness and confidence in using ICT in technical colleges in Rivers State is teachers' lack of expertise with ICT's (35, 30.17%). Furthermore, lack of knowledge of how to evaluate the use of ICT in teaching and learning in technical colleges was identify as another factor 27 vocational teachers' (23.28%). The result also revealed that 15 vocational teachers (12.93%) indicated insufficient knowledge of how to use ICT equipment as factor hindering their readiness of using ICT in their schools in Rivers State.

Research Question Three: what is the teachers' perception about the perceived ease of using ICT?

Table 3: Teachers' Researches on Perceived Ease of Using ICT in their schools N = 116

S/N	*Perceived ease of using ICT*	$\overline{x}$	*SD*	*Remark*
20.	Using ICT motivates students to learn	2.61	0.70	Agree
21.	ICT makes preparing the lesson easier	2.72	0.75	Agree
22.	ICT makes the lesson delivery ore easier	2.69	0.73	Agree
23.	Using ICT improves the quality of instruction	3.01	0.81	Agree
24.	Using ICT ion teaching is expensive	2.34	0.57	Disagree
25.	Hardware and software problems often disrupt the lesson	2.41	0.61	Disagree
	Average Grand Mean/SD	**2.83**	**0.60**	

Source: Field survey, 2025

The result in Table 3 revealed that teachers agree with items 20, 21, 22, and 23 based on the means which ranged from 2.61 to 3.01 and disagree with items 24 and 25 based on the means which ranged from 2.41 to 2.34. The standard deviation (SD) which ranged from 0.57-0.81 indicated that the respondents were close to one another in their opinion and were also not too far away from the mean. However, the grand mean stood at indicating that the teachers' perceived ICT as very easier to use in teaching their lesson in technical colleges in Rivers State.

Research Question Four: What is the Teachers' Perception about the Usefulness of ICT?

Table 4: Teachers Perceived Usefulness of ICT in their Schools N= 116

S/N	*Perceived usefulness items*	$\overline{x}$	*SD*	*Remark*
26.	Using ICT enhance students' learning	3.21	0.85	Agree
27.	Using ICT motivate students to learn	2.85	0.71	Agree
28.	Using ICT makes lesson easier	3.15	0.80	Agree
29.	Using ICT makes lesson more interesting	2.78	0.69	Agree
30.	Using ICT in teaching is enjoyable	2.63	0.63	Agree
31.	Using ICT makes lesson more fun	2.57	0.62	Agree
32.	Using ICT makes lesson diverse	3.01	0.79	Agree
	Average grand mean/SD	**3.94**	**0.72**	

Source: Field survey, 2025

The result in Table 4 revealed that the teachers agree to all the 8 items as benefit of using ICT in teaching in technical colleges in Rivers State. Mean scores for each of the 8 items exceeded 2.50 which is the cut-off point. The teachers had their standard derivation ranged from 0.63-0.85. This indicated that the respondents were close to one another in their opinion and were not too far away from the mean. The grand mean stood at indicating that vocational teachers' perceived ICT as being useful in their lesson delivery in technical college in Rivers State.

Summary of Findings of the Study

The following are the findings of the study:

i. Vocational teachers of technical colleges in Rivers State do not have access to e-mail, internet and interactive response system because they are not connected.
ii. Teachers' have access to ICT's materials such as computer, video equipment and data projector at their various schools only that variation exist on the frequently to which they access ICT's materials.
iii. Teachers' lack of expertise with ICT and lack of knowledge of how to evaluate the use of ICT are the two major factors that hinders teachers' readiness and confidence of using ICT in technical colleges in Rivers State.
iv. Teachers' perceived ICT as very easier to use in teaching their lesson in technical colleges in Rivers State.
v. Teachers' perceived ICT as being useful in their lesson delivery in technical college in Rivers State.

Discussion of Findings

Discussion of the findings of the study were made according to the research questions posed in the study.

ICT that Vocational Teachers' Have Access to in Technical Colleges in Rivers State.

The findings from Table 1a revealed that vocational teachers in all the technical colleges in Rivers State has access to ICT's accept e-mail, internet and interactive response system. This is in agreement with the findings of Olukoya and Abiola (2022) that the availability of computers and internet was non-existent in virtually all the schools that they investigated in Ondo State. The finding from Table 1a were also in agreement with Zamani and Onoja (2018) that most secondary schools in Nigeria have either insufficient or no ICT tools to cater for the increasing population of students in their schools and where they are available, they are by implication a matter of out-of-bound to the students'. This result may be due to the fact that these facilities are not available for access or that the teachers' lack the skills to access them. Moreover, government at all levels usually considers providing internet connectivity in schools as being too expensive and difficult to maintain and therefore do not see reasons of connecting these facilities in schools in Nigeria.

On frequency of access, the result revealed that a considerable number of vocational teachers in technical colleges in Rivers State access ICT between 1-15 hours per week. This is an indication that using ICT by teachers' is relatively high. This corroborates the report by Ibrahim and Orji (2017) that availability usually determines access. If ICT is available, this will motivate the teachers to access them than when they are not available or available but not in sufficient quantity and quality.

Factors Hindering Vocational Teachers' Readiness and Confidence in using ICT in Technical Colleges in Rivers State

The finding from Table 2 revealed that the major factor hindering teachers' readiness and confidence in using ICT are teachers' lack of expertise with ICT and lack of knowledge of how to evaluate the use of ICT. Similarly, Davis and Clifford (2021) in their study on developing maturity in learning with technology revealed that the most significant barriers identified as hindrance to teachers' readiness and confidence in using ICT are linked to staff attitude and training of staff in the use of ICT, access to ICT materials and ICT skill. Moreover, Jeremiah (2021) reported that staff continues to identify a lack of time as a barrier to the use of technology in teaching and learning process. Previous survey of academic staff attitudes to the use of technology have also repeatedly identified time and an absence of skills and knowledge as significant barriers to technology adoption in schools (Olukya, 2022).

Vocational Teachers' Perception about the Perceived ease of using ICT

The finding from Table 3 revealed that teachers perceived ICT as very easier to use in teaching their lesson in technical colleges in Rivers State. This finding is in agreement with Steven and Clark (2021) that the use of technology is likely to play a different role on students' learning when teachers adopt the use of technologies in teaching and learning. Other factors that teachers considered about ease of using ICT are that ICT contribute in making the lesson more interesting to the students' easier to teach, more fun for them and their students, more diverse, more motivating for the students and more enjoyable. Additionally, it should be noted that in technology acceptance model by (Davis and Clifford, 2019) one of the basic themes examined was perceived ease of use. This according to Davis and Clifford (2019) usually influences people acceptance, to use a particular technology which is in agreement with the result of the study Olukoya and Abiola in 2022.

Vocational Teachers Perception about the Usefulness of ICT in Technical Colleges in Rivers State

The findings from Table 4 revealed that vocational teachers in technical colleges in Rivers State perceived ICT as being very useful in the study. This is in agreement with Ibrahim and Orji (2017) that teachers who train their students with ICT's materials are likely to assist their students to gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom. In addition, through ICT, students extend and deeper their knowledge, investigation and inquiry according to their needs and interest when access to information is available in multiple level. This may be connected to the fact that it is perceived as improving learners' performance; and more so that teachers are affected by knowledge about their own subject.

Conclusion

The study has shown generally that Information and Communication Technology (ICT) now has far reaching implications in teaching and learning at the secondary school level in Nigeria. This is because teachers in secondary schools have now perceived ICT's usefulness. However, not every teacher in secondary schools in Nigeria have access to all ICT's materials in their schools due to the fact that ICT's materials are not connected. The need to connect ICT's materials such as e-mail and internet at this period of technological advancement all over the globe is highly necessary in all our schools in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are made:

i. Government at all levels should provide internet, computers and other ICT infrastructure in all the government own school in order to encourage teachers to use them in teaching and learning process.
ii. Regular training and re-training of teachers; on how to use ICT's materials should always be organized for teachers by the government at all levels of our education.
iii. Government should ensure that they provide soft loan for teachers as to enable them acquire their own ICT's materials like laptops/computers for their own private use both at home and school
iv. Teachers' training and professional development-oriented policies should support ICT-related teaching models that will encourage both students and teachers to play an active role in teaching and learning activities in secondary schools in Nigeria.

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