

# ASSESSMENT OF INSTRUCTIONAL DELIVERY USING INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) TOOLS IN SECONDARY SCHOOLS IN UYO EDUCATION ZONE IN AKWA IBOM STATE, NIGERIA

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## **ABSTRACT**

*Information and communications technology (ICT) is becoming indispensable in instructional delivery in schools. This study assessed the instructional delivery in public secondary schools in Uyo Education Zone in Akwa Ibom State of Nigeria using information and communications technology (ICT) tools. Four objectives, four research questions and three hypotheses were framed. The descriptive survey design was adopted. The population of the study comprised 3,178 teachers in the 86 public secondary schools spread across the nine Local Education Committees (LEC) that made up Uyo Education Zone. A sample of 636 teachers representing 20 percent of the population were randomly selected using multi-stage random sampling. Instructional Delivery Using ICT Tool Questionnaire (IDUITQ) was administered to the respondents. Cronbach Alpha Statistic was used to establish the reliability coefficient of 0.82. Descriptive Statistic,*

*Pearson Moment Correlation and independent t-test at 0.05 level of significance were used to analyze data. Findings of the study showed low level of utilization of ICT tools in instructional delivery in secondary schools in the study area. Inadequate ICT tools, epileptic power supply, lack of adequate training and support services were found as some of challenges confronting effective utilization of ICT tools in instructional delivery in the study area. Amongst the recommendations made was that the government should adequately provide ICT tools in public secondary schools as well as in-service training and ICT support services for teachers in Akwa Ibom State, Nigeria.*

***Keywords:*** *Instructional delivery, ICT tools and utilization.*

## **Introduction**

The world is gradually becoming the global village, due to the development in the Information and Communication Technology. Virtually all aspect of man has been affected by the recent development in ICT, and the field of education is not an exception as teaching is gradually shifting from teachers' to students-centered. Teaching has gone beyond the classroom walls. ICT has made it compulsory for teachers to meet up with the global trend through the use of various technological tools. ICT tools in the word of Nwosu and Ogbomo (2012) include all communication devices or applications, encompassing: radio, television, cellular phones, networks, software, and satellite systems, as well as the various services and applications associated with video conferencing and distance learning. Tinio (2002), on the other hand, views ICT tools as powerful enabling tools for educational change and reform. The use of ICT tools has various merits. The use of ICTs tools has helped to expand access to education, strengthen the relevance of education to the workplace, and raise educational quality by creating an active process connected to real life.

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ICT has to do with the use of technological tools to increase productivity and enhance creativity. ICT include computer hardware and software, operating systems, web-based information and applications, radio, television, cellular phones, network, satellite system, distance learning, telephones and other telecommunications products, video equipment and multimedia products, information kiosks, and office products such as photocopiers and fax machines. One area where ICT tools has played significant role is in instructional delivery. The use of ICT tools in instructional delivery especially at secondary school level is imperative to meet the needs of individual students effectively and efficiently. The interactivity between the students and the teachers and the learning environment accelerate mastery of the subjects, individual study, effective communication, receiving and sending feedbacks, relaxed time of and pace of learning accessibility to global information, increase in knowledge and much more. In as much as the traditional classroom teaching methods are still in practice, the new technologies in place for a blended- learning is necessary to meet up the needs required by the global technological advancement in education. This paper therefore assesses the extent of availability and use of ICT tools in public secondary schools in Uyo Education zone.

**Statement of the Problem**

Instructional delivery as secondary school level has gone beyond the teacher using the traditional method. This is because of the revolutionary change in teaching and learning as a result of ICT. Many secondary school students tends to be more motivated to learning when ICT tools are used and for secondary school leavers to compete actively with their fellow in the advanced countries of the world, instructional delivery must be efficient and effective. This development has also compelled secondary school teachers to embrace this innovation. Also, the attention of many students at secondary schools has also been aroused by ICT. The National Policy on Education has also recognized the relevance of ICT tools in all level of education. Many secondary schools in Nigeria has actually embraced the use of

ICT tools in instruction delivery, but the case in secondary schools in Uyo Education zone is not known as there is no empirical evidence on the use of ICT tools in secondary schools in Uyo Education zone.

### **Objectives of the Study**

The objective of this study is to assess the use of ICT tools in public secondary schools in Uyo Education Zone. The specific objectives of the study include to:

1. Examine the relationship between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.
2. Determine the relationship between adequacy of ICT tools and utilization of ICT tools at secondary school level in Uyo Education Zone of Akwa Ibom State.
3. Examine the relationship between teachers' age and the use of ICT tools in instructional delivery at secondary schools level in in Uyo Education Zone of Akwa Ibom State.
4. Establish the difference in the use of ICT tools for instructional delivery at secondary school level based on school location in Uyo Education Zone of Akwa Ibom State.

### **Research Questions**

The following research questions guided this study:

1. What relationship exists between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State?
2. What relationship exists between adequacy of ICT tools and utilization of ICT tools at secondary school level in Uyo Education Zone of Akwa Ibom State?

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3. How does teachers' age relates to their use of ICT tools in instructional delivery at secondary schools level in Uyo Education Zone of Akwa Ibom State?
4. What difference exists in the use of ICT tools for instructional delivery at secondary school level based on school location in Uyo Education Zone of Akwa Ibom State.

**Research Hypotheses**

The following null hypotheses guided this study:

1. There is no significant relationship between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.
2. There is no significant relationship between adequacy of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.
3. There is no significant relationship between teachers' age and their use of ICT tools in instructional delivery at secondary schools level in Uyo Education Zone of Akwa Ibom. State.
4. There is no significant difference in the use of ICT tools for instructional delivery at secondary school level based on school location in Uyo Education Zone of Akwa Ibom State.

**Review of relevant literature**

In the word of Blair (1997), ICT was viewed as an umbrella term that encompasses all advanced technologies used in manipulating and communicating information. These ICT tools can be categorized into two broad categories namely hardware such as computer system, servers LCD projectors, printers, mouse, keyboard, CD/DVD, memory card, flash drive among others and softwares which are application software packages which include the internet, operating system among others.

The use of ICT tools have been observed to promote effective instructional delivery instructional delivery (Abolade and Yusuf, 2005; Buabeng-Andoh, 2012). Buabeng-Andoh (2012) observed that ICT tools enhances effective instructional delivery by spreading

knowledge, making education efficient and real. Olorundare (2006) opined that ICT tools gives the teachers the opportunity to have access to unrestricted information in their different subjects and hence gives the teacher the opportunity to meet students' individual differences. This means that ICT tools are very paramount in effective instructional delivery.

According to Onwuagboke and Singh (2015), effective instructional delivery embraces all human interactive skills which the teacher is required to adopt so as to enhance learning in the classroom. The following are some of the ICT tools that can be used in instructional delivery:

**Power Point:** With the production of slides via the computer using power points, instructions are presented, in a way that is visible, clear, effective and efficient to students.

**Course Web Site:** A course web site can be used to advertise your course, communicate and share materials with students, even to assign and grade students' completed work. Comments are posted to the the students on the website and responses are delivered through same.

**Internet:** The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide.

**Electronic mail:** Electronic mail, commonly called e-mail, is a method of exchanging digital messages across the internet or other computer networks.

**Talking book:** These are electronic books that give one audio options (it can be listened to instead of reading) on learning and teaching instructions. Other ICT tools include smart board, radio, television among others.

## **Methodology**

This study adopted the survey design to assess ICT tools for instructional delivery at secondary schools level. The descriptive

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survey design was adopted because the researcher did not intend to manipulate the research variables, but rather the variables were measured through the use of questionnaire. The population of the study comprised 3,178 teachers in the 86 public secondary schools spread across the nine Local Education Committees (LEC) that made up Uyo Education zone. A sample of 636 teachers representing 20 percent of the population was randomly selected using multi-stage random sampling. The researcher-made instrument, titled ICT Tool and Instructional Delivery Questionnaire (ICTTIDQ), was used for data collection. The instrument was validated by three experts in the University of Uyo and the reliability of the instrument was established using Cronbach Alpha Statistic which yielded reliability coefficient of 0.82. Pearson Product Moment Correlation (PPMC) and independent t-test were used to test the null hypotheses at 0.05 level of significance. Out of the 636 copies of the questionnaire administered, 628 copies representing 98.7% of the administered questionnaire were retrieved, while 8 copies were found unuseable.

**Data analysis and results**

**Hypothesis 1**

There is no significant relationship between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.

***Table 9.1.1: Relationship between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State***

Variables	$\Sigma X$	$\Sigma X^2$	$\Sigma XY$	r-cal.	r-crit.	Decision at p<.05
	$\Sigma Y$	$\Sigma Y^2$				
Availability of ICT tools (X)	11101	201979	146330	.537*	.087	H <sub>0</sub> 1: is rejected
Utilization of ICT tools in instructional delivery (Y)	8155	108751				

*n=632, df = 631. \* = significant at p<.05.*

Result in Table 9.1.1 shows correlation coefficient of .537 which means that there is a positive relationship between availability of ICT tools and their utilization of ICT tools for instructional delivery at secondary school level in secondary schools in Uyo Education zone. The r-calculated of .537 is greater than the r-critical of .087 at 0.05 level of significance which implies that the null hypothesis is rejected. Hence, there is significant relationship between availability of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.

**Hypothesis 2**

There is no significant relationship between adequacy of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.

**Table 9.1.2: Relationship between adequacy of ICT tools and their utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State**

Variables	$\Sigma X$	$\Sigma X^2$	$\Sigma XY$	r-cal.	r-crit.	Decision at $p < .05$
Adequacy of ICT tools (X)	9319	144559	123225	.523*	.087	Ho2: is rejected
Utilization of ICT tools in instructional delivery (Y)	8155	108751				

$n=632, df = 631. * = significant at p < .05.$

Result presented in Table 9.1.2 reveals correlation coefficient of .523 which signifies that there is a positive relationship between adequacy of ICT tools and their utilization of ICT tools for instructional delivery at secondary school level in secondary schools in Uyo Education zone. The r-calculated (.523) is greater than the r-critical of (.087) at 0.05 level of significance. The null hypothesis 2 is rejected. Therefore, there is significant relationship between adequacy of ICT tools and their



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utilization in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.

**Hypothesis 3**

There is no significant relationship between teachers’ age and their use of ICT tools in instructional delivery at secondary schools level in Uyo Education Zone of Akwa Ibom State.

**Table 9.1.3: Relationship between teachers’ age and their utilization of ICT tools in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State**

Variables	$\Sigma X$	$\Sigma X^2$	$\Sigma XY$	r-cal.	r-crit.	Decision at p<.05
Teachers’ age (X)	17484	487912	226793	-.138*	.087	Ho3: is rejected
Utilization of ICT tools in instructional delivery (Y)	8155	108751				

*n=632, df = 631. \* = significant at p<.05.*

Result summarized in Table 9.1.3 shows negative relationship between teachers’ age and the utilization of ICT tools in instructional delivery at secondary school level in secondary schools in Uyo Education zone( r =-.138). The r-calculated (.138) is greater than the r-critical of (.087) at 0.05 level of significance. The null hypothesis 3 is rejected. Therefore, there is significant relationship between teachers’ age and their utilization of ICT tools in instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State.

**Hypothesis 4**

There is no significant difference in the use of ICT tools for instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State based on school location.

Table 9.1.4: Independent t–test showing differences in teachers’ use of ICT tools in instructional delivery based on school location.

**Table 9.1.4: Independent t–test showing differences in teachers’ use of ICT tools in instructional delivery by school location**

School location	n	Mean	SD	t-calc.	t-crit.	Decision at p<.05
Urban	341	3.28	0.52	3.53*	1.96	Ho4: is rejected
Rural	287	3.11	0.68			

*n=632, df = 632. \* = significant at p<.05.*

Result in Table 9.1.4 reveals that the t-calculated of 3.53 is greater than the t-critical of 1.96 at 0.05 level of significance. The null hypothesis is rejected. Hence, there is There is no significant difference in the use of ICT tools for instructional delivery at secondary school level in Uyo Education Zone of Akwa Ibom State based on school location. Result shows that teachers in secondary schools in the urban made use of ICT tools in instructional delivery than their counterparts in secondary schools in the rural area.

### **Discussion of findings**

This study has shown significant relationship between availability, adequacy of ICT tools and utilization of ICT tools in instructional delivery in secondary schools in Uyo Education Zone. The result implies that the more ICT tools are made available in secondary schools, the more teachers will be willing and likely to utilize these tools in instructional delivery. This result means that availability and adequacy of ICT tools enhances its usage in instructional delivery in public secondary schools in Uyo Education zone. This finding agrees with that of the finding by Nwosu and Ogbomo (2012) that the use of ICT tools enhances the instructional delivery. Nwosu and Ogbomo (2012) also established that availability and adequacy of ICT tools has a relationship with the utilization of ICT tools. Also, this finding is in line with that of the finding by Tinio (2002) that for teachers to make

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use of ICT tools for instructional delivery, there must be adequate provision of these tools.

## **Conclusion**

This study has established significant relationship between availability of ICT tools and the utilization of such tools in instructional delivery in public secondary schools in Uyo Education zone. The adequacy of ICT tools was also found to be significantly related to the utilization of ICT tools in instructional delivery. This study also found that secondary schools in the urban make use of ICT tools than those in the rural areas. Based on the finding, the following were recommended.

## **Recommendations**

1. The government of Akwa Ibom State should provide ICT tools such as computers, ICT, CD-ROMS, video disc, among others, so as to enhance teachers' utilization of these tools in instructional delivery.
2. The government should ensure that all secondary school teachers in the study area are well equipped with relevant skills on how to utilize ICT tools in instructional delivery.
3. Adequate funds should be made available to all secondary schools in the study area so as to enable them purchase standby generator.
4. Training and retraining of all secondary school teachers is also important to enable teachers effectively use ICT tools in instructional delivery.
5. Adequate support services should also be provided to all secondary schools in the study area. This support services will provide teachers with necessary guidance and support as far as the use of ICT tools are concerned.

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