

## Assessment of Teachers' Literacy of Instructional Value and Use of ICT in Secondary Schools in Nnewi Education Zone

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### Abstract

The study was aimed at assessing teachers' literacy of instructional value and the use of Information and Communication Technology (ICT) in secondary schools in Nnewi Education Zone of Anambra State. The purpose of this study is to determine literacy/instructional values of ICT facilities and how the teachers used these facilities in teaching various subjects and to find out if teachers knowledge of the instructional values of ICT differ and vary based on their qualifications. The study will be of significant because ICT facilities have been acclaimed to have permeated all facets of human life including the education sector. The design of the study was descriptive survey. Four research questions guided the study. The population of the study comprised all the 996 computer teachers in secondary schools in Nnewi Education Zone. Simple random sampling technique of balloting without replacement was used to select 150 teachers out of 996 teachers as the sample for the study. The instrument for data collection was researchers-made 28 item questionnaire titled "Assessment of Teachers' Literacy of Instructional Value and Use of ICT Questionnaire" (ATLIVUICTQ) that was structured on a 5 point rating scale. The instrument was duly validated by three experts in Educational Foundations. Cronbach alpha was used to ascertain the reliability of the instrument and the coefficient of 0.93 was obtained. The data collected was analyzed using mean and standard deviation. The findings of the study revealed that teachers have low level of awareness of instructional values of ICT facilities and that teachers do not extensively use the ICT facilities in teaching. The researchers recommended that government at all levels should organize conferences, seminars, workshops and symposia for computer teachers. The implication of the findings was also highlighted.

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**Keywords:** assessment, teachers, literacy, instructional, value, ICT

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### INTRODUCTION

For any nation to be of relevance in this 21<sup>st</sup> century, the development of such nation should depend very much on the advancement and application of Science and Technology. There is no doubt that ICT has found its niche in every sphere of Nigerian Polity. The relevance of ICT in day-to-day activities of human life, particularly its integration into education, cannot be ignored. The National Policy on Education (FRN, 2014) gave recognition to the prominent role information and communication technology play in the advancement of knowledge and the skills necessary for effective functioning in the modern world, particularly its integration in education.

ICT has become an integral and accepted part of everyday life for many people. It is increasingly important in people's life and it is expected that this trend will continue to the extent that ICT literacy would become a functional requirement in the world of work.

In 1988, the Nigerian Government enacted a policy on computer education. The plan was to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools. In all educational efforts, teachers are seen as indispensable and crucial elements in all curriculum planning and instruction. Thus, teachers exert some significant influence on the educational system. Teachers are said to be experts who are trained to master their subject matter and know how best to teach it in their various disciplines/areas of specialization. These teachers are found at all levels of educational systems; primary, secondary and tertiary levels. They are involved in the art of teaching and educational advancement of the society.

Teaching can be perceived as the various activities undertaken by the teachers to guide the young ones in their pursuit of knowledge, skills, competencies and so on. The teachers' tasks is that of a systematic

presentation of facts, ideas, skills, and techniques to pupil/students (Igbineweka, 2012) and they lay the foundation upon which growth and development in the society lies. It can also be said that no meaningful formal education can take place without due emphasis on the teachers.

Teaching is a profession as well as an art of directing and sharing experiences with learners. Ochonogor and Ajaja (2005) see teaching as a series of activities designed and performed to produce desirable change in learners' behaviour. Edozie (2003) viewed teaching as a set of events which affect learners in such a way that learning is facilitated. These events may be generated by a page of print, a picture, a television programme, a radio programme, a computer or by any combination of physical objects under the directive of a teacher who has pre-planned the events. Teaching takes place when information or some skills is communicated from the teacher to the learners. If there is no communication, there is no teaching and if what is taught is not communicated, the attempt at teaching is unsuccessful.

Aguola (2010) defined ICT as the application of computers and other technologies to the acquisition, organization, storage, retrieval, and dissemination of information. He further described it as a complex varied set of goods, applications and services used for producing, distributing, processing and transforming information including telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. Nworgu (2015) sees ICT as a set of tools that helps you to work with information and perform tasks related to information processing. Obviously, ICT is the new wave of technology driving virtually every activity in the world today (Esomonu, Ikemelu & Nwafor, 2011).

ICT includes hardware and software devices such as personal computers, assistive technology, scanners, digital cameras, multi-media programmes, image editing software database and spread sheet programmes. It also includes the communication equipment through which people seek and access information including the internet, e-mail, and video conferencing (NCCE, 2008). The use of ICT in appropriate context in education can add value to teaching and learning by enhancing effectiveness that was not previously available to the learners. Since ICT improves the quality of education of a nation, then national development depends on the extent to which a nation uses ICT facilities in education.

The use of ICT by the teachers in teaching the students is highly advantageous. This is because it enables the teacher to demonstrate understanding of the opportunities and implications of the uses for teaching and learning in curriculum context; plan,

implement and manage teaching and learning in open flexible learning environment (UNESCO, 2004).

The ability to use ICT effectively and appropriately (ICT literacy) is now seen as essential to allow learners to acquire expert information within every sphere of human activity. It can be assumed that specific forms of ICT will change with time. However, the need to be able to access and use ICT purposefully will remain the key to full participation in an information society. The curriculum already reflects the perceived value and importance of developing ICT literacy, and indeed, information literacy in all students. In the context of this research, ICT literacy involves; extent of teachers' knowledge of instructional value of ICT to the extent of their use in teaching their subjects.

The 21<sup>st</sup> century has brought with it many challenges which are marked by rapid technological advancement, it therefore makes it imperative for the teacher to be equipped with ICT skills and knowledge that will prepare the students to compete favourably with learners in other parts of the globe and in the world of work. Teachers, as the chief curriculum implementers should occupy the centre stage of the curriculum implementation and they can only do so if they are aware of the vital roles and benefits these facilities have in teaching and learning process. They equally need to know how to use the various ICT facilities and integrate them into the curriculum especially secondary school teachers.

### **Statement of the Problem**

Experiences has shown that teachers that teach in secondary school are consider to be professional teachers, who are exposed to various methods and instructional materials for teaching during their training both the pre-service and the in-service. But most of the teachers are not well exposed to the use of ICT, making it difficult for them to use during lessons in order to facilitate learning in school. Tinio (2002) has researched on the assessment of other instructional materials used by secondary school teachers but less attention has been focused on gathering empirical data on ICT competences of teachers in secondary schools in Nnewi Education zone. Therefore, the problem of this study posed as a question is; what are the assessment of teacher's literacy of instructional value and use of information and communication technology (ICT) in Nnewi Education zone of Anambra State.

### **Research Questions**

1. What are the levels of teachers' literacy of the instructional value of ICT in teaching?
2. To what extent do teachers' make use of ICT facilities in teaching their various subjects?

3. To what extent does teachers' knowledge on the instructional value of ICT vary based on qualifications?
4. To what extent do teachers' use of ICT facilities vary based on their qualifications?

**METHOD**

The design of the study was descriptive survey. The area of study was Nnewi Education Zone of Anambra State. All the 996 computer teachers in the Education Zone constituted the population of the study. Simple random sampling technique (balloting without replacement) was used to select 150 teachers out of 996 as the sample for the study. The instrument titled "Assessment of Teachers' Literacy of Instructional Value and Use of ICT Questionnaire" (ATLIVUICTQ) was developed by the researchers and structured on a 5 point rating scale of Very Much Aware (VMA- 5 points), Much Aware (MA- 4 points), Fairly Aware (FA-3 points), Aware (A-2 points), Not Aware (NA-1 point). The instrument was duly validated by 3 experts in Educational Foundations. Reliability of the instrument was established by the use of Cronbach alpha and coefficient of 0.86 was obtained. The researchers considered the value high enough and used it for the study. Mean and standard deviation were used to answer the research questions. Mean scores from 4.20-5.00 was regarded as high level, while 2.60-4.10 was seen as medium level, whereas 1.10-2.50 is low level.

**RESULTS**

Table 1: Teachers' Mean Responses on Level of Literacy on the Instructional Value of ICT Facilities

Item	$\bar{x}$	Sd	Decision
Internet	3.00	1.20	Medium level
Computer	2.60	1.10	Medium level
E-mail	2.50	1.20	Low level
Video	2.80	0.89	Medium level
Television	2.80	0.93	Medium level
Radio Player	2.80	0.93	Medium level
Play Card	2.40	1.20	Low level

Table 1 shows that Internet, computer, video, television and radio player with mean ratings of 3.00, 2.60, 2.80, 2.80, and 2.80 respectively indicate that teachers' instructional knowledge is on the average, while their knowledge for e-mail and play card is low with mean scores of 2.50 and 2.40 respectively.

Table 2: Teachers Mean Responses on the Use of ICT in Teaching Various Subjects

Item	$\bar{x}$	Sd	Decision
Internet	2.50	1.10	Low level
Computer	2.30	1.10	Low level
E-mail	2.30	1.10	Low level
Video	2.60	0.78	Medium level
Television	2.60	0.84	Medium level
Radio Player	2.80	0.84	Medium level
Play Card	2.20	1.10	Low level

Table 2 shows that video, television and radio player with the mean ratings of 2.60, 2.60, and 2.80 are used by the teachers on the average, while the use of internet, computer, e-mail, and play card is low with the mean scores of 2.50, 2.30, and 2.20 respectively.

Table 3: Teachers' Mean Responses on Knowledge of ICT Based on Qualification

Item	First Degree	Sd	Decision
Internet	2.50	1.20	Low level
Computer	2.50	1.10	Low level
E-mail	2.40	1.10	Low level
Video	2.80	0.84	Medium level
Television	2.80	0.84	Medium level
Radio Player	2.80	0.81	Medium level
Play Card	2.20	1.10	Low level

  

Item	NCE	Sd	Remarks
Internet	2.80	1.30	Medium level
Computer	2.70	1.20	Medium level
E-mail	2.60	1.20	Medium level
Video	2.80	0.95	Medium level
Television	2.90	1.00	Medium level
Radio Player	3.00	1.00	Medium level
Play Card	2.60	1.30	Medium level

From Table 3, it was revealed that first degree teachers have average knowledge of ICT such as video, television, and radio player with mean scores of 2.80, 2.80, and 2.80, while in the use of internet, computer, e-mail and play card, their knowledge is relatively low with the mean scores of 2.50, 2.50, 2.40, and 2.20.

For the teachers with NCE, the use of internet, computer, e-mail, video, radio player, and play card have the mean scores of 2.80, 2.70, 2.60, 2.80, 2.90, 3.00, and 2.60 respectively. This indicates that teachers with NCE have average knowledge of ICT equipments.

Table 4: Teachers' Mean Responses on the Use of ICT Based on Qualification

Item	First Degree	Sd	Remarks
Internet	2.20	1.10	Low level
Computer	2.40	1.10	Low level
E-mail	2.20	1.10	Low level
Video	2.50	0.78	Low level
Television	2.60	0.78	Medium level
Radio Player	2.50	0.82	Low level
Play Card	2.10	1.10	Low level

  

Item	NCE	Sd	Remarks
Internet	2.50	1.20	Low level
Computer	2.60	1.20	Medium level
E-mail	2.40	1.10	Low level
Video	2.60	0.78	Medium level
Television	2.60	0.89	Medium level
Radio Player	2.60	0.86	Medium level
Play Card	2.40	0.21	Low level

Table 4 shows that teachers with first degree use television with mean score of 2.60 which is on the average. Other items like internet, computer, e-mail, video, radio player and play card scored 2.20, 2.40, 2.20, 2.50, 2.50, and 2.10 respectively. This indicates

that first degree teachers' use of ICT is low. It further indicates that NCE teachers use computer, video, television and radio player with mean scores of 2.60, 2.60, 2.60, and 2.60 on the average, while they do not often use e-mail, internet, and play card with mean scores of 2.50, 2.40, and 2.40 respectively.

## DISCUSSION

The results of research questions 1 revealed that teachers literacy on instructional value and use of ICT in secondary schools in Nnewi Education Zone of Anambra State is on the average and low level. It is obvious that secondary school teachers are not aware of the vital roles and benefits of these ICT facilities in improving the teaching and learning in classroom situation. This is in line with Ofoefuna (2005) who assert that in Nigeria most teachers are still using old method of talk and chalk, even in the teaching of sciences especially Mathematics. This method cannot prepare the youths for the emergent of technological growth, which is dominated by ICT in all spheres of living as individuals and as a group. The benefits of ICT in education are well documented by many researchers such as Clarke (2006), Duffy (2006), and Akudolu (2007) among others, it has been observed that when used appropriately, ICT devices help to expand access to education, strengthen the relevance of education to the increasingly digital work place, raise educational quality by helping to make teaching and learning active process connected to real life situations. Students throughout the world interact through internet; this could be done through e-mail, online calls or chat rooms. It gives the students the opportunity to write for others to see, rather than their teachers alone and more especially, the students with disabilities can achieve greatly through ICT.

Results of research question 2 show that secondary school teachers do not extensively use the available ICT facilities for effective teaching and learning. This finding disagrees with Nwosu (2008) and Ikwuka (2013) when they opined that ICT facilities in instruction would enhance learning and ensure transfer of knowledge. They further assert that ICT usage should be viewed seriously because e-learning advocates the use of ICT as converging of learning processes and the internet whereby network technologies are used in the delivery of individualized, comprehensive and dynamic learning at anytime and anywhere. Therefore, ICT facilities are important for the proper development of the child at all levels of education.

Results of research question 3 show that teachers knowledge of ICT do not vary based on their qualification. However, teachers' knowledge of ICT varies on individual/personal characteristics. Based on this finding, Arasonwa, Omeiza and Omenke (2007) are of the opinion that many secondary school

teachers are not computer literate, hence, cannot operate the computer. They therefore feel reluctant to embrace computer education and often try to shy away from students questions in classroom. Therefore, absence of proficiency and competency skills on the part of teachers poses great danger to the smooth transition of ICT teaching-learning environment. With the low proficiency skills of the teachers, the learners may not achieve maximally. The finding of this study corroborates with the work of Cyped (2014) in which he opined that teacher efficiency is a major factor in the use of ICT instruction.

Results of research question 4 reveal that teachers use of ICT do not vary based on their qualifications. First degree teachers and NCE teachers do not use ICT facilities based on their qualifications. Onegegbe (2003) agrees that the use of ICT facilities in teaching and learning in our secondary schools classroom will enhance presentation of new ideas, stimulation of discoveries and challenging if appropriately and extensively used. In agreement with this, Obumneke-Okeke, Anyachebelu and Uba (2013) opined that the implication is that when these challenges are not properly tackled, the vision of using ICT in learning at the secondary level of education will remain a mirage but if properly harnessed, it will help in repositioning of the Nigerian educational system to meet up with foreign standards.

## CONCLUSION

Based on the findings of the study, it was found that teachers have low level awareness of the instructional values of ICT, and as such do not make judicious use of the available ones in the teaching of their various school subjects. Their inability and lack of proficiency in usage is not dependent on their educational qualification. Therefore, it becomes necessary that the teacher competency should be looked into at all cost and soonest. This will go a long way in imbuing the teacher and the student with the desire for technological knowledge required for their development and effective functioning in the modern world.

## IMPLICATIONS OF THE FINDINGS

The findings of this study imply that teachers rely more on the talk and chalk method of teaching and they have low level of awareness of instructional values of ICT. Also, they are not adequately trained for the use of ICT in classroom instruction.

## RECOMMENDATIONS

1. The state government at all levels should organize conferences, seminars, workshop and symposia for computer teachers.
2. The workshops should be held regularly and government should sponsor the teachers.

### LIMITATIONS OF THE STUDY

The findings of the study cannot be generalized to education zone outside Anambra State. The researchers therefore suggest a repeat of the study other states in Nigeria.

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