A Survey of Information and Communication Technology Usage by Basic Technology Teachers in Selected Schools in Ilorin Metropolis

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Abstract

In this paper, effort is made to determine the competency of teachers in the use of information and communication technology for teaching basic technology in questionnaire while selected secondary schools in Ilorin Metropolis. Sample of 60 respondents were randomly selected from the identified schools. The instrument used is a questionnaire while simple frequency counts and percentages were used to analyze and interpret the data. The analysis of the data revealed that information and communication technology facilities have not being often used, efficiently and effectively in most of the schools. The major recommendation is that Kwara State Government through the assistance of ministry of education should ensure proper training of basic technology teachers for effective utilization of information and communication technology facilities in the training of students in secondary schools

Introduction

The term "information technology" means the study or use of materials and electronic equipment, especially computers for storing analyzing and distributing information of all kinds including words, numbers and pictures. This (information technology) can be effective in teaching, which is an act of communicating to one who is learning and involves a lot of activities of which the interaction between the teacher and learner in the classroom setting has to be carried out.

Many philosophers and educators such as Aristotle, Comenius and Jean Jeacques Rousseau have expressed their view about the role of the interaction between the teacher and the learners as an effective means of learning (Akinpelu 1982). The quality of interaction between the teacher and the learners plays an important role in determining the learning achievement of the students. What has been bothering the teachers since the inception of education is how to communicate the accumulated experience of human race to each new generation.

Conversely, this research work highlights certain steps to be followed by basic technology teachers in making requisite professional decision in utilizing information and communication technologies to attain maximum learning on the part of their students.

Since the teaching of science subjects, technical subject inclusive is learner-centered, it therefore shows that the method of teaching the subject must be activity-oriented through learning by doing and classroom interaction. If one looks at all these methods, one would conclude that they are activity based learning, which calls for extensive use of information and communication technologies and participation of learners actively in learning experiences. This would promote permanent learning, capture and utilize the interest of learners to the maximum.

With emphasis on activity-based and learner-centered learning, information and communication technology will bring competency and effective teaching-learning of basic technology subjects.

Over a quarter century ago, scholar Ben Russark (1975) noted that traditional models of scholarly communication would be undermined by the photocopy machine and the computer. His prediction has held: the advent of new information technologies that have "completely and irrevocably transformed the ways in which materials are created, structured, stored, transmitted, distributed, communicated and accessed have similarly transformed the means and modes of scientific communication.

The relevance of basic technology to education cannot be over emphasized. According to Roruntree (1982), while discussing learning and teaching, he defines educational technology as an area of education which is concerned with the design and evaluation of the curricular and renovating them. Essentially, it is a rational problem solving approach to education, it is a way of thinking systematically about learning and teachings as well as its evaluation so as to better achieve the purpose. Harry (1979) considers educational technology as a systematic approach to the application of research data and variety of methods, modes and media to improve learning.

It has been highlighted accordingly, that educational technology relates to finding solutions to educational problems through adequate planning, designing, constructing and evaluating of the educational system. It is also a system of instructional communication material analysis production and utilization as well as stimulus control in the learner so that knowledge can be made available. It is therefore, the organization and management of the educational system to make it result oriented.

Research Questions

1. Is there any available information and communication technologies for teaching purpose in your school?
2. If information and communication technologies are available in your school to what extent are these facilities available for instruction?
3. Are these information and communication facilities suitable for instructional purposes?

4. How are students lessons taught with information and communication technology?

5. Do you think the teaching of basic technology is successful when information and communication technology facilities are incorporated?

Research Type

This research is a survey type and it deals with the survey of information and communication technology usage by basic technology teachers in some selected schools in Ilorin metropolis. The role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy (Rosen and Well, 1995, and Thierer, 2000). Most experts in the field of education had agreed that when properly used information and communication technology holds great promise to improve teaching and learning in addition to shaping workforce opportunities. There is no doubt that information and communication technology can aid the instructional process and facilitate the students learning of the subject.

Sample and Sampling Technique

The population used for this study was 10 secondary schools in Ilorin metropolis. The information was obtained from the teachers and information and communication technology specialists in the choosen schools. Moreso, 60 respondents were randomly selected and administered with questionnaire for the study.

Research Instrument

The main instrument used in the collection of data for the study was questionnaire.

The questionnaire was framed to cover various aspects of the research questions. This was constructed in such a way to elicit direct answer from the respondent. The instrument has two sections. Section A: this deals with respondent's personal data Section B; this deals with degree of availability and utilization and communication technology facilities in the selected secondary schools in Ilorin metropolis.

Validation of the Instrument

Validation of instrument refers to the extent to which an instrument measures what it is intended to measure.

The 20 items in the questionnaire were developed by the researchers and given to specialists in Educational Technology Unit of Science Education Department in the University of Ilorin. It was distributed to the teachers in the selected secondary schools in Ilorin metropolis so as to appraise that the instrument is adequate. At the end of the appraisal the following steps were taken;

i. unclear items were restated;

ii. items which were repetitions of others were dropped; and

iii too lengthy items were dropped.

Procedure for Data Collection

The total number of 100 copies of the questionnaire were printed and administered to the respondents in various selected secondary schools. These were directly given to the respondents. At the end of the administration of the instrument only 60 copies of the questionnaire were properly filled and returned.

Data Analysis Technique and Results

Since the study is a descriptive research type, a survey method was used for the report. The data obtained were analyzed by using frequency counts and percentages. organized in tables and bar-charts.

After the data analysis, the researchers were able to find out some of the problems facing the teaching of basic technology in most of the secondary schools in Ilorin metropolis.

Research Question 1 (Rq1):

Are there any available information and communication technology facilities **for teaching purpose in your school?**

The results are presented in Table

Items	Description	Yes N(%)	No N(%)	No of respondents	%
1.	Are there any available information and communication technology facilities for teaching purpose in your school?	52 (87)	8 (13)	60	100
2.	Are these information and communication technology facilities suitable for instructional purpose?	56 (93)	4 (7)	60	100
3.	Are the available information and communication technology facilities regularly used	40 (70)	18 (30)	60	100

Table 1 above indicates that the percentage of (Yes) for availability of information and communication technology in the school of research is (84%) while percentage of (No) is (13%), and that the information and communication technology facilities are very suitable for instructional purpose, but they are not regularly used.

Research Question 2 (RQ2):

If information and communication technology facilities are available in your school, to what extent are these facilities available for instruction?

Table 2: Extent of Availability of ICT Facilities for Instructor in the School.

Items	Description	Yes N(%)	No N(%)	No of respondents	%
1.	Do you think the teaching of basic technology would be successful when information and technology facilities are used?	42 (70)	18 (30)	60	100
2.	Can these facilities be improvised where they are not available?	36 (58)	25 (42)	60	100
3.	Does non-utilization of these facilities contribute to failure of the teaching of basic technology?	38 (63)	22 (37)	60	100

Table 2 shows that 70% of the respondents claimed that teaching of basic technology would be successful when the information and communication technology facilities are used, while 58% of the respondents agreed that these facilities can be improvised. However, 63% of them were of the opinion that non utilization of information and communication technology facilities contributes to failure in the teaching of basic technology.

Research Question 3 (RQ3)

Are the information and communication technology facilities in your school suitable for instructional purposes? :

Items	Description	Yes N(%)	No N(%)	No of respondents	%
1.	The information and communication technology facilities are suitable for instruction.	25 (42)	35 (58)	60	100
2.	The available facilities are not very suitable for instruction	42 (70)	18 (30)	60	100
3.	The facilities are not commonly used	52 (87)	8 (13)	60	100

Table 3 indicates that only 42% of the total respondents agreed that the available information and communication technology facilities in their schools were suitable for instructional purpose, while 58% of the respondents stressed that the available information and communication technology facilities in their respective schools were not suitable for instruction. This implies that most of the available information and communication technology facilities in the sample schools were not commonly used.

Research Question 4 (Rq4):

How do students find lesson taught with the use of information and communication technology facilities?

Table 4: How students find the lesson taught using ICT facilities

Items	Description	Yes N(%)	No N(%)	No of respondents	%
1.	Interesting	42 (70)	18 (30)	60	100
2.	Boring	4 (7)	56 (93)	60	100
3.	Enthusiastic	52 (87)	8 (13)	60	100

Table 4 depicts that 70% of the respondents agreed that lessons taught with the use of information and communication technology facilities were interesting, while 7% of the respondents accepted that it was boring . 52% of them were of the opinion that it was not only interesting but also enthusiastic and even very stimulating

Research Question 5 (RQ 5):

Do you think the teaching of basic technology would be successful when information and communication technology facilities are incorporated?

Table 5: Respondents opinions on the success of teaching Basic Technology using ICT facilities.

Items	Description	Yes N(%)	No N(%)	No of respondents
1.	The teaching of basic technology would be successful when information and communication technology facilities are incorporated	35 (58)	25 (42)	60
2.	The teaching is boring when these facilities are not incorporated	4 (7)	56 (93)	60
3.	Information and communication technology facilities have no meaningful impact on the teaching and learning of basic technology	8 (13)	52 (87)	60

Results in Table 5 show that the percentage of "Yes" for the successful utilization of information and communication technology facilities is greater than the percentage of "No" and that the information and communication technology facilities have a meaningful impact on the teaching and learning of basic technology; because it does not make the entire (i.e. teaching and learning) to be boring.

Summary of the Major Findings

The major findings of the research revealed that:

1. Some schools are equipped with information and communication technology facilities but these facilities are not efficiently and effectively used.
2. Where the information and communication technology facilities are not available, improvisation is difficult thereby resulting to poor performances of the students in basic technology and related subjects.
3. The available facilities in some schools are out-dated.
4. Large percentage of the respondents agreed that lessons taught with the use of information and communication facilities are not only interesting but also enthusiastic and stimulating
5. Information and communication technology facilities have meaningful impact on the teaching and learning of basic technology because it does not make the entire teaching and learning to be boring.

Discussion

Basic technology is a subject in the junior secondary school education system in Nigeria. The subject is taught at the junior secondary school level to groom and prepare

the young ones for meaningful and useful contribution to the technological advancement of our nation in the work of world.

As previously described, the data gathered in this research are analyzed using the survey method of data analysis to find the competence of the basic technology teachers in some selected schools in llorin metropolis.

The methodology of teaching basic technology subject is a problem to some of the teachers in the field and this is due to lack of practical training of some of the teachers. The lecture method is often used in the teaching of basic technology subject more than activity based on instruction or demonstration method

From the data analyzed, the respondents agreed that instructional materials or model are not frequently used. The oral interviews conducted revealed that visit and field studies are not encouraged due to lack of funds.

Students' attitude is another factor militating against the effectiveness of the basic technology subject. The lukewarm attitude showed by the students towards the subject contributed to the teachers' problem in teaching the subject.

Conclusions

In conclusion, the study has shown that the information and communication technology facilities are inadequate in all the selected secondary schools in llorin metropolis. In addition, the majority of the basic technology teachers in the selected schools are not particularly qualified and the qualified ones are OND graduates, but their number was too few to cope with the increasing number of students.

The Ministry of Education's performance in the management of provision of adequate equipment and/or materials to be used in effective teaching of the subject in various schools of the State was very poor and below expectation.

Furthermore, most of the selected basic technology teachers did not improvise materials to supplement the few available ones. The teachers only made use of few available materials within their reach.

In the same vain, the teachers did not usually attend workshops, seminars, conferences all of which are important to keep teachers abreast with the new knowledge and teaching techniques of the subject.

However, from the findings of this research work, it is believed that the result will be useful to the educational planners and educational policy maker at large. Finally, the significant effect of teachers' competence in effective utilization of information and communication technology has been earlier shown in the study.

Recommendations

Following the foregoing conclusions that emerge from the study, the following recommendations are made:

The Kwara State Government should ensure proper training of Basic Technology Teachers in the effective utilization of information and communication technology

facilities to meet the challenge posed by the explosion in the number of secondary schools and students pupils environment which conventional method of teaching may not meet.

2. Seminars and workshops should be organized by the practicing basic technology teachers at Local government area and State levels as these will promote greater interaction and exchange of ideas and how to improvise and use available local materials for teaching and learning basic technology.

3. Teachers should always lay emphasis on the importance of the subject i e the professional guidance counsellors should sensitize the students to have interest on the subject.

4. The curriculum for training of basic technology should be reviewed and/or changed both in content and methodology to meet the current changes in education.

5. Basic technology textbooks, journals and magazines should be made available in the school libraries.

6. The condition of service for the teachers and their welfare should be improved upon a special salary structure should be created for technical teachers.

7. The Junior Secondary School WAEC syllabus should be reviewed at least once in every four years.

8. There should be more emphasis on continuous assessment for the evaluation of student's progress.

9. The type of training to be given to teachers should be such that new innovation in technology would be the core or focus of the training

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