



Challenges Facing the Provision of ICT Facilities in Technical Colleges in Enugu Education Zone

Ezeora, Boniface Ugochukwu Ph.D.¹ & Argungu, Sani Abdullah I. Ph.D.²

¹Department of Technology and Vocational Education (TVE)
Enugu State University of Science and Technology (ESUT), Enugu

²Dept. of Educational Foundations
Enugu State University of Science and Technology (ESUT)

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This study was on Challenges facing the provision of Information, and communication Technology (ICT) facilities for teaching and learning in technical colleges in Enugu Education zone. The challenges of providing adequately ICT facilities as instructional materials for teaching and learning was the crust of the study. Survey research design was adopted for the study. A 9-item research question was constructed to guide the study; with a corresponding null hypothesis tested at 0.05 level of significance was formulated. The null hypothesis was tested with t-test statistical tool. The population for the study was 36 technical teachers and 211 students of technical colleges in Enugu education zone. A structured questionnaire of 9-items was used for data collection. The instrument was subjected to face validation. The overall reliability coefficient using Spearman's rank order coefficient formula yielded 0.93. Mean responses and standard deviations were employed in the analysis. It was observed that the null hypothesis was rejected. Prominent among the findings were the lack of computer laboratory facilities and no e-library facilities for the colleges, coupled with poor power supply even for the few available ICT facilities. Gross absence of private sector participation except in one of the four technical colleges was a serious challenge. It was recommended that the authorities should improve on the provision of ICT facilities for teaching and learning; as well as the need to engender private sector participation in the TVET Programme. Other recommendations included the Provision of electronic library (e-library)) to engender critical thinking and self-learning by the students to ensure that the learners become ICT compliant in line with what obtains in the developed technologies and economies of the world. Therefore, there is the urgent need to declare a "state of emergency" on the Provision of ICT facilities for teaching and learning in technical colleges in Enugu Education Zone.

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ABSTRACT

Keywords: Provision of ICT Facilities; Technical Colleges; Instructional Materials; TVET Programme

1. Introduction

Teaching and learning have developed over the years, moving from the conventional method to the present electronic and digital era. Teaching and learning in technical education entail experimentation and practical works. Dewey, (1949) posited that teaching and learning would not be meaningful without employing instructional aides that would make for research, experiment and real-life experiences. Information, communication and Technology, (ICT) has revolutionized the entire facets of human endeavour.

In education, especially, teaching and learning, information, communication and Technology (ICT) have become veritable tools for instructional delivery. Information, communication, and Technology (ICT) generally entail the application of computers, internet services, fax machines, websites etc. (Bamidele, 2006) in Ayoola, Ikuenomore & Eyengho, (2010). Ofodu (2007) in Apagu & Wakili, (2015) defined ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. Apagu & Wakili, (2015), thus defined ICT as the processing and sharing of information using all kinds of technologies for the manipulation and communication of information. Olorunsola (2007) also posited that ICT facilities change the needs of education as well as the potential processes.

Technical education is the hub of national development and the disparity in levels of development between the developed and the under-developed world is principally due to the differential in technological attainments. This makes the teaching and learning of technical education a priority. It is not only a priority area but an imperative for economic and technological development. In line with the 'invasion' of virtually every sector by ICT, Apagu & Wakili, (2015) advocate the adoption of ICT by teachers of technical colleges to enhance effective teaching and learning. The adoption of the ICT facilities will make the teaching and learning participatory and will improve the creative thinking of the learners.

Some of these ICT facilities needed for the teaching and learning in technical colleges in line with the positions of Babajide & Bolaji, (2003); Bryers, (2004); Bamidele, (2006) and Ofodu (2007) in Apagu as Wakili, (2015) include; Radio, Television, computers, overhead projectors, optical fibers, fax machines, CD-Rom, internet, electronic notice boards, slides, digital multimedia, Video/VCD machine e-library, amongst others.

National Policy on Education defined technical and vocational education as a comprehensive term referring to those aspects of the educational process involving- the study of technologies and related sciences and acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. In the light of this, vocational and technical education is the preparation of individuals to acquire practical skills as well as basic scientific knowledge, it provides skilled manpower, for the world of work, that is increasing the workforce in the country; individuals with specialized skills as offshoots of efficient vocational and technical education as they are trained, equipped with workable practical skills, knowledge, aptitude and competencies required in specific occupations (FRN, 2013).

The National Policy on Education (2013) emphasized the need to integrate ICT into the education sector in Nigeria having recognized its prominent role in the modern world (FRN, 2013). The national policy on education went further to say that government should provide basic infrastructure and training materials for the schools. Technical and Vocational Education and Training (TVET) require the adequate provision of instructional facilities such as ICT for more effective teaching and learning. The effective use of ICT facilities will demystify the abstractions involved in teaching and learning technical education. Computer literacy for instance enhances one's employability in this technology-driven age. Basic to many disciplines taught in technical colleges is technical drawing. Presently several computer applications have eroded the traditional use of analog drawing instruments. Such applications include Computer-Aided Design (CAD), Corel draw as well as Computer-Aided Manufacture (CAM). If the students of technical colleges are not availed the opportunity of using these ICT facilities the tendency is that they may graduate as eccentric products of contemporary technical colleges. The ability to be an ICT complaint has become a major requirement in the labour market considerations and human capital development. Most of the hitherto devices and machines which used to be mechanical or electrical contrivances are fast been transformed into electronic and digital systems. This development generates more efficient devices and the products of the technical colleges in this part of the world cannot afford to be left behind.

The school net initiative of the Federal Ministry of Education (FRN, 2006) was intended to equip all schools in Nigeria with computers and communication technology facilities. To what extent this initiative flows down the ladder is one of the major concerns of this study. For instance, so many craft centers in Enugu like Coal Camp industrial Area, Aria

market wheelbarrow fabrication center, Obiagu foundry and smithy centers, to mention but a few, are all yawning for modern technological impart. The graduates of these technical colleges are the potential human capital resource to engender modern technological influence on these craft centers to enhance the economic and developmental stride of Enugu state in particular and Nigeria in general.

Enugu Education zone houses four technical colleges viz: Government Technical College, Enugu; Colliery Comprehensive Technical College, Ngwo; Technical College, Akpoga Nike and Technical College, Ikem Neke. If the ICT facilities are effectively used for teaching and learning in these institutions, their graduates will not only have positive/permanent changes in behavior in their various technical fields but will be able to transform the technological landscape of the craft centers in Enugu Education zone. Such technological transformation will be sustainable, subsequently if collaboration amongst the teachers, learners(students), administrators, and government are enhanced. In this era whereby some examination bodies like the Joint Admission and Matriculation Board (JAMB) employ the use of computers in writing her Universities/Tertiary institutions Matriculation Examinations (UTME); the need for the use of Computer-Aided Instructions (CAI) presently, cannot be overemphasized.

Lack of adequate provisions of ICT facilities has been hampering the development of technical education in Enugu Education zone. A swift action aimed at according the technical education the priority it deserves needs to be carried out urgently. Primus amongst these priorities, is the provision of information, communication and technology (ICT) facilities.

Statement of the Problem

Technical education is the hub of developmental activities in any society. The technical colleges in this part of the world are still grappling with the pre-world war II equipment for the training of the students. This trend inhibits the students from exploring their capabilities optimally. It equally renders the graduates of the technical colleges mismatch to the modern equipment presently in use in the industries e.g. Innoson automobile and polymer production outfit in Emene industrial area.

The poser therefore the challenges facing the provision of ICT facilities for teaching and learning in these technical colleges? There is therefore urgent need to provide the technical colleges with appropriate modern technology-based training equipment and machines (Ezeora, 2018). These modern facilities should include, information, communication and technology (ICT) facilities so that at the end of their training, graduates of the technical colleges in Enugu will be ICT compliant.

Purpose of the Study

The purpose of the study was to determine the challenges facing the provision of ICT facilities in the technical colleges in Enugu Education zone.

Research Question

What are the challenges facing the availability of ICT facilities in technical colleges in Enugu Education zone?

Null Hypothesis (H₀)

H₀: There is no significant difference in the mean scores of teachers and students on the challenges facing the provision of ICT facilities in technical colleges in Enugu Education zone.

2. Research Methodology

A descriptive survey research design was used for the study. Survey research according to Olaitan, Ali, Eyo & Sowande (2000) is a research design that employs the study of a sample of a large population to discover the relative incidence, distribution and interrelations of sociological and psychological variables through the use of interviews or questionnaires. Similarly, Ezeji, (2004) posited that survey research involves the assessment of public opinion using questionnaires and sample methods. The survey research design was considered most appropriate for the ease of gathering information from the respondents.

The researcher used a structured questionnaire to gather opinions and obtain data from 211 years two students from the four technical colleges in Enugu Education zone. Similarly, their respective technical teachers from the colleges totaling 36 were also studied.

The instrument used for data collection had earlier been validated by three experts. Their observations and suggestions were used to improve the instrument. The instrument was further subjected to a reliability test using 20 respondents from technical colleges in Nsukka education zone because it shares similar characteristics with Enugu Education zone. It yielded an overall reliability coefficient of 0.93, employing Spearman's rank-order correlation coefficient formula in the computation.

The data were collected using the validated instrument, by direct administration. Five of the questionnaires served on the students were double ticked and mutilated. Therefore, they were rejected; thus, making the return rate 98%.

3. Analysis and Result

The results are presented in the tables below, for the research question and hypothesis.

Table 3. 1 The mean and standard deviation of challenges facing the availability of ICT Facilities in technical colleges in Enugu Education Zone

| S/N | Item | Teachers | | | Students | | | Overall | | | | |
|-----|--|----------|-----------|--------|----------|-----|-----------|---------|------|-----------|--------|------|
| | | n | \bar{X} | SD | Dec. | N | \bar{X} | SD | Dec. | \bar{X} | SD | Dec. |
| 1. | The government and schools do not provide adequate instructional materials. | 36 | 2.8333 | .44721 | LE | 211 | 2.9716 | .46716 | LE | 2.9514 | 0.4643 | HE |
| 2. | Lack of computer laboratory facilities affect teaching and learning | 36 | 2.8611 | .42445 | LE | 211 | 2.0427 | .46093 | LE | 2.1620 | 0.4556 | LE |
| 3. | There were poor private, public partnerships in the provision of ICT facilities. | 36 | 2.8889 | .31873 | LE | 211 | 2.3318 | .88581 | LE | 2.4130 | 0.8032 | LE |
| 4. | There are no e-library for the colleges | 36 | 2.9444 | .23231 | LE | 211 | 1.7441 | .43742 | LE | 1.9190 | 0.4075 | LE |
| 5. | Epileptic power supply is a great challenge. | 36 | 3.3611 | .63932 | LE | 211 | 1.7014 | .43742 | LE | 1.8745 | 0.6694 | LE |
| 6. | Low computer literacy amongst the teachers | 36 | 2.8235 | .38695 | LE | 211 | 2.1422 | .77378 | LE | 2.3199 | 0.7542 | LE |
| 7. | No motivation for utilizing the available facilities | 36 | 2.7941 | .41043 | LE | 211 | 1.8436 | .55136 | LE | 1.9864 | 0.5201 | LE |
| 8. | Ignorance on the part of the students | 36 | 2.9118 | .28790 | LE | 211 | 1.8152 | .55115 | LE | 1.9578 | 0.5306 | LE |
| 9. | Lack of commitment on the part of the students | 36 | 2.8529 | .35949 | LE | 211 | 1.9526 | .55860 | LE | 2.0924 | 0.5191 | LE |

Grand mean = 2. 1863

Table 3.2 t-test of the difference between the mean scores of teachers and students, on the extent of challenges facing the availability of ICT facilities in technical colleges in Enugu Education Zone

| Respondents | Mean | SD | n | df | t cal. | t crit. | Dec. |
|-------------|--------|--------|-----|-----|--------|---------|------|
| Teachers | 2.9160 | 0.3971 | 36 | 245 | 13.99 | 1.64 | S |
| Students | 1.8545 | 0.5391 | 211 | | | | |

Decision

The t-cal. value of 13.99 is greater than the t-table value of 1.64 at a P < 0.05 level of significance. Therefore, we reject the null hypothesis. Hence, a significant difference exists in the mean scores of teachers and students on the extent of challenges facing the availability of ICT facilities in technical colleges in Enugu Education zone.

Table 3.1 showed that the challenges facing the availability of ICT facilities are to a high extent. Even the result of the mean indicated it was to a high extent. On the contrary, the result of the students' mean scores showed it was to a low extent. This result was made manifest in the significant difference emanating from the null hypothesis (H_0) testing.

Discussion of the Findings

These challenges of availability of ICT facilities for teaching and learning are enormous in the technical colleges in Enugu Education Zone. With a grand mean of 2.1863, it indicates a low extent of challenges of availability. The teachers' mean response score of 2.9160 showed a high extent of challenges militating against ICT provision in the technical colleges in Enugu Education zone. The students on the other hand indicated that the challenges were to a low extent with a mean score of 1.8545. This finding aligns with the Eze and Aja (2014)

The results of this conform with the findings of Apagu & Wakili (2015) in their study on the Availability and utilization of ICT facilities for teaching and learning of Vocational and Technical Education in Yobe State. The result indicated that ICT facilities were not adequately available in the schools in Yobe State.

Similarly, the result of this study also aligns with the finding from Eze and Aja (2014) who studied the availability and utilization of ICT in Ebonyi Local Government Area of Ebonyi State. Their study also showed that ICT devices were available but not adequate in most of the schools studied. The present study also reflected that, following the mean response score of low extent of provision of ICT facilities in the technical colleges in Enugu education zone.

Apart from inadequate availability of ICT facilities Apagu & Wakili (2015), Eze & Aja (2014) also found out that the available ICT facilities were poorly utilized due to teachers who are not computer literate as well as epileptic power supply. The present study also aligns with their findings following the means of 1.8545 and 2.9160 for teachers and students respectively on challenges of provision of ICT facilities.

The mean response score of teachers differed from that of the students. It was 2.9160 and 1.8545 for teachers and students respectively. For teachers, the challenges are to a high extent whereas for the students they are to a low extent. However, the grand mean for yielded 2.1863 indicating a low extent of challenges. This corroborates the provision/lamentation in the National Policy on Education (FRN, 2013) on the challenges of provision of state-of-the-art equipment for technical, vocational and education and training (TVET).

4. Conclusion

From the results of the findings emerging from the respondents vide the mean response scores, it is obvious that ICT facilities were not adequately available in the technical colleges in Enugu Education zone. This is due to several challenges facing the provision of ICT facilities.

The challenges militating against the provision of ICT facilities in the technical colleges in Enugu Education Zone are enormous. One of the technical colleges, which had a private partnership with a cybercafé operator, recorded low patronage and was on the verge of folding up the business. This is partly predicated on the teachers' poor computer literacy.

5. Recommendations

Following the findings of this study, the researcher recommends as follows.

1. Improved government provisions of ICT facilities to the technical colleges.
2. Encourage private, public partnership in the provision of ICT facilities for the technical colleges.
3. There is an urgent need to improve the power supply to vital institutions of the society especially when it borders on modern-day technological studies.
4. There is an urgent need also for the provision of an e-library to encourage life-long learning and critical thinking by the students/learners.

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