

Improving Maintenance of Instructional Facilities for Achieving Quality Assurance in Technical Colleges in South-South of Nigeria

Iloma, Ukelabuchi (Ph.D)

Department of Electrical Electronic Technology,
Federal College of Education (Technical),
Omoku, Rivers State
ilomaukelabuchi@yahoo.com

Ogbowu Caroline. N.

Department of Electrical Electronic Technology,
Federal College of Education (Technical),
Omoku, Rivers State

Dimkpa, Igwebuike E.

Department of Electrical Electronic Technology,
Federal College of Education (Technical),
Omoku, Rivers State

Abstract

The survey study was designed to determine strategies for improving maintenance of instructional facilities for quality assurance in technical colleges in South-South of Nigeria. Two research questions guided the study. Sample size of 54 respondents consisting of 6 administrators and 4 teachers were purposively selected from six technical colleges in three States of the zone. The instrument used for data collection was 19- item questionnaire. The instrument was validated by three research experts. The research instrument was pre-tested once and a reliability index of 0.87 was obtained using Cronbach Alpha Reliability for estimates of internal consistency. Mean statistic was used to answer the research questions. The result of the data analysis showed among others that planning, routine inspection, partnering with host communities and Parents Teachers Association on maintenance of school plants are some of the strategies for improving maintenance of instructional facilities for quality assurance in technical colleges. Funding, training and retraining of staff on maintenance were among the recommendations made. Further study was also suggested.

Introduction

The provision for education is to ensure that learners acquire necessary knowledge and skills that will result to relatively permanent change in their behaviour. Education is thus an important instrument for national development. Ogakwu and Isife (2012) describe education as an instrument that transforms the totality of the individual into a functional citizen. According to the National Policy on Education of the Federal Republic of Nigeria (NPE, FRN) (2004), education is an instrument “par-excellence” for effecting national development. In line with this, the National Policy on Education of the Federal Republic of Nigeria (FRN, NPE) (2013) describes education as an instrument for national development and social change. The contribution of Technical Education (TE) in this direction has not been controversial.

Technical education is a comprehensive term that refers to those aspects of educational processes which in addition to general education, involves the study of technologies and related sciences as well as the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of the economy and social life (FRN, 2013). The goals of technical education are:

- provision of trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels;
- provision of technical knowledge and vocational skills necessary for agricultural, commercial and economic development;
- giving training and imparting the necessary skills to individual who shall be self-reliant economically (FRN, 2013)

Technical education programmes are offered in Nigerian universities, polytechnics, monotronics, college of health technology, innovation enterprise institutions, vocational enterprise institutions and technical colleges (NBTE, 2012).

A technical college is an educational institution (school) that prepares students for a career in specific fields (Johnson, 2012). It is a college that provides courses in a range of practical subjects such as engineering, information technology, applied sciences, agriculture, and secretarial skills (Collins, 2015). Okoro (2006) define technical college as an institution that provides full vocational training which is intended to prepare students for entry into various occupations as artisans, craftsmen and technicians

Technical colleges are thus designed to prepare individuals to acquire practical skills, basic scientific knowledge and behavioural attitude that will conform to the standard expected of craftsmen and technicians at sub-professional level (Akpan 2010) technical colleges in Nigeria have been training people to become craftsmen and technicians. Training qualifies graduates of technical colleges for jobs in public and private sectors of the economy (Alio & Iloma, 2014). Public and private sectors, according to Ndomi (2005) require well-trained and competent craftsmen and technicians who can operate and maintain the available technical equipment. According to National Board for Technical Education (NBTE) (2012), the 6 States of the South-South of Nigeria has a total of 26 Government Technical Colleges (GTC). The States and the GTCs are Akwa Ibom 5, Bayelsa 1, Cross River, 4 Delta 6, Edo 5 and Rivers 5 technical colleges.

It is imperative to note that acquisition of skill and scientific knowledge is emphasized in the goals of technical education as enshrined in the National Policy of Education of the Federal Republic of Nigeria (FRN, NPE (2013)). Skills enable individuals to create more wealth, facilitate increased productivity and sustainability for the employed and those seeking self-employment (Aniedi & Namkere, 2012). Technical college programmes are thus intended to increase educational opportunities which facilitate illiteracy-reduction and promote skill acquisition that will equip citizens with satisfactory employable and entrepreneurship competencies.

The range of courses offered in technical colleges suggests that active participation of the students in the learning process is pertinent. Hence, improving the maintenance of instructional facilities could be imperative in the college.

According to Tanner (2006) instructional facilities affect health, behavior, engagement, learning, and growth in achievement of students; it help the students to be more competitive in achieving their goals through higher level of education and thinking order, it gives students greater opportunities for learning. Garrison (2000) also opine that various instructional facilities enhances teaching and arouses the interest and achievement of students

and consequently, the realization of the goals of technical education. Instructional facilities could therefore enhance the achievement of quality assurance in technical colleges.

Quality assurance is a systematic activity which ensures that products (learning outcome) meets the expectation of the user (society) including maintaining a feedback system for timely corrective measure (Nkemakolam, 2007). It is all planned and systematic actions deemed necessary to provide adequate confidence that a product will satisfy a given condition for quality (Borahan & Ziarati, 2002). According to Maduewusi and Onyeachu (2010), quality assurance is the process of ensuring that a standard is maintained. It is a continuous process of improvement in the quality of teaching and learning activities achievable by employing mechanisms that are capable of satisfying the educational objective (Okebukola, 2004). Ikorok, Akgobio and Ogunjimio (2012) opined that quality assurance has to do with quality planning, quality control, quality improvement and quality output. Quality planning ensures that school activities are properly planned in order to facilitate teaching and learning activities. Quality control ensures that through appropriate administrative activities such as supervision, teaching and learning activities conform to the standard that will result to the achievement of the stated objective. Quality improvement has to do with the process of advancing through research and creativity the frontier of quality in the school system while quality output is concerned with the processes that ensure that school leavers have the required attributes that satisfy the societal manpower needs.

Angya (2012) defines quality assurance as all attitudes, objectives, actions and procedures that through their existence and use, and together with quality control activities, ensure that appropriate academic standards are being maintained and enhanced in and by each programme. Therefore quality assurance in technical colleges is the process which ensures that products of technical colleges meet the expected standard of the society by ensuring excellence, effectiveness and efficiency through the use of educational processes and mechanisms. This of course improves employability especially entrepreneurial skills among graduates of technical colleges. Functional instructional facilities are essential in achieving this which makes maintenance of available facilities imperative.

Maintenance is the combination of actions carried out to service, repair or replace a device or system so that it will continue to operate satisfactorily for a specified period (Iloma, 2013). It is what is done to ensure satisfactory operation of a system so as to optimize the longevity and the functioning of the equipment. The systematic approach to improve the maintenance of instructional facilities in technical colleges is to ensure that the facilities functions optimally to satisfy instructional processes as well as to elongate their lifespan.

Consequently, teaching and learning process could be facilitated; students' academic interest and achievement could be positively enhanced and this could impart qualitatively on their attitude, results and certificate. Upon graduation, skills acquired could increase their chances of self-reliance, employment opportunities by those seeking middle manpower and could as well qualify them for admission into higher institutions. This could assure quality in technical colleges and hence the achievement of the goals of establishing technical colleges. The roll of the college administrator could be strategic in this perspective.

School administrator coordinates all resources of the school through the process of planning, organizing, directing, controlling and evaluating in order to achieve educational goal (Nwachukwu, 1988). Angya (2012) identified monitoring, evaluation, supervision,

inspection and quality control as strategic role of school managers (administrators) in establishing quality assurance.

Technical College Administrator is therefore one who coordinates all resources of the institution through the process of planning, organizing, directing, controlling and evaluating in order to achieve the goal of technical education. Such administrator could be Principals of technical colleges. The principal as the custodian of the school plant ensures that it is kept in functioning conditions by protection it against damage conditions by ensuring its proper utilization and improving its maintenance.

Yusuf (2008) opines that school administrators are to mobilize and motivate their staff and students to imbibe and internalize the maintenance culture, carry out periodic inspection, financing maintenance cost internally and classification of damaged infrastructure and ensure community participation approach with a view of returning them to their normal operation capacity. This could be strategic in improving the maintenance of instructional facilities for quality assurance in technical colleges.

The role of the teacher in ensuring quality assurance in the school system have not been controversial. A teacher is a person whose job is teaching (Hornby, 2004). The teacher is one who engages students in learning experiences with the intentions of imparting knowledge, skills and moral values that will result to changes in the behaviour of the student (Iloma, 2013). Since teachers are the major determinants of quality in education, a competent teacher should be able to impart knowledge effectively to learners (NPE, 2013). For a technical teacher to achieve this, instructional facilities such as functional laboratories equipment are essential.

Nkemakolam (2007) Ikpeba (2012), Ovute and Ede (2012) identified the teacher as important personnel for achieving quality assurance in Nigerian schools. Thus, Ozioko (2011) observed that a productive teacher is one who is conversant with the use of various modern teaching strategies for optimal goal achievement. The teacher is therefore one around whom the fulcrum of curriculum lever revolves (Iloma & Amadike, 2013)

Since the teacher uses these facilities in instruction, it is expected that the teacher should be able to detect whether there is fault in the instructional facilities frequently used by him and such could be promptly reported to the school authority for necessary action. Amanchukwu and Obijuru (2013) also opine that the school teacher should be able to keep maintenance records, interpret manuals, add lubricants, detect faults, keep laboratories and workshop clean as well as control students using instructional facilities. These could be among the strategies for improving maintenance of instructional facilities for quality assurance in technical colleges.

In realization of the need to ensure quality assurance in technical colleges, government at different levels, non-governmental organizations as well as spirited individuals and host communities at different point in time deliberately invested in the area of providing quality instructional facilities in technical colleges. All these among others have been to ensure quality and thereby improve teaching and learning processes in technical institutions.

However, depreciation of instructional facilities is a common feature in most technical colleges and this could be attributed to poor maintenance culture. According to Alio and Uzor (2010) a number of vital instructional facilities in technical education institutions are not

functioning optimally. Denga (2001) attributes poor maintenance of instructional facilities to poor funding, lack of deliberate maintenance plan and poor management of human and material resources by school heads (administrators) and teachers. Poor maintenance of instructional facilities could lead to permanent damages to the facilities and therefore retard instructional processes. This could lead to poor performance of the students.

Mbaba, (2006) opine that development of poorly skilled manpower in technical college, inability of technical college students to become self-reliant on graduation and students' poor performance in both teachers' made and standardized examination has linkage to poor instructional processes of which non-functional instructional facilities such as workshops, equipment and classrooms has been a prominent factor.

Consequently, unemployment among graduates of technical colleges becomes manifest as they will lack prerequisite skill for employment and those seeking further education becomes unqualified for admission. Further, the acquisition of quality knowledge and skill that guarantees self-reliance and employable tendencies might not be achieved with poorly maintained instructional facilities. This study is therefore on strategies for improving maintenance of instructional facilities for quality assurance in technical colleges in South-South of Nigeria.

Purpose of the Study

The main purpose of this study was to determine strategies for improving maintenance of instructional facilities for quality assurance in technical colleges. Specifically, this study

1. determines the administrators' strategies for improving maintenance of instructional facilities for quality assurance in technical colleges
2. determines the teachers' strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges

Research Questions

The following research questions guided the study

1. What are the administrators' strategies for improving maintenance of instructional facilities for quality assurance in technical colleges?
2. What are the teachers' strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges?

Method

A descriptive survey research design was adopted for this study. The population for this study consists of all the administrators and teachers of technical colleges in the South-South of Nigeria. Random sampling technique was used to select 48 teachers and 6 administrators from the study area. The sample size for the study was 54.

A structured questionnaire consisting of 19 items in a four point rating scale of Strongly Disagree (1 point), Disagree (2points), Agree (3points), and Strongly agree (4 points) was used to elicit information from the respondents. The instrument was validated by three experts from the faculty of education, Rivers State University of Science and Technology, Port Harcourt. Cronbach Alpha reliability was used to determine the reliability coefficient of the instrument which yields 0.87 indicating that the instrument was reliable for this study. Respondents were asked to indicate their opinion on the item of the instrument. The instrument was distributed and retrieved by the researcher on the spot after completion.

Mean statistic and standard deviation were used to answer the research questions. Items with mean value of 2.50 and above were regarded as Agree (A) while those items with mean value below 2.50 were regarded as Disagree (D).

Results

Research Question 1 What are the teachers' strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges?

Table 1: Mean ratings and Standard Deviation of respondents' opinion on administrators' strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges

SN	Statement	\bar{X}	SD	Decision
1.	Coordinating all resources under his control in ensuring maintenance of instructional facilities	3.00	0.89	A
2.	Regular inspection of instructional facilities	3.20	0.88	A
3.	Delegating staff on prompt report and repair of faulty instructional facilities	3.30	0.85	A
4.	Partnering with PTA on maintenance of instructional facilities	3.90	0.89	A
5	Partnering with stake holders and host community on maintenance of instructional facilities	3.10	0.88	A
6	Carry out seminars on maintenance	2.70	0.91	A
7	Encourage in-service training	3.20	0.84	A
8	Engage students in workshop on maintenance	2.80	0.90	A

Table 1 shows that respondents agree to each of the eight items. The overall mean scores of the respondents show that they agree to each of the eight items on technical college administrators' strategies for improving the maintenance of instructional facilities for quality assurance in technical college

Research Question 2.

What are the teachers' strategies for improving instructional facilities for quality assurance in technical colleges?

Table 2: Mean ratings and standard deviation of respondents' opinion on teachers' strategies for improving maintenance of instructional facilities for quality assurance in technical colleges

		X₁	Sd₁	Dec
9.	Keeping of maintenance records	2.70	0.38	A
10.	Keeping the equipment clean after use	3.00	0.32	A
11.	Promptly reporting issues on maintenance to the school authority	3.10	0.40	A
12.	Ensuring that moving parts of the equipment are regularly lubricated	2.50	0.91	A
13.	Controlling the students to ensure that instructional facilities are not misused	3.00	0.89	A
14.	Enrolling in maintenance programme	3.10	0.82	A
15.	Ensuring regular inspection of facilities	2.50	0.91	A
16.	Prompt action on malfunctioning facilities	3.00	0.89	A
17.	Good observation abilities	2.90	0.87	A
18.	Reporting perceived malfunctioning appropriately	2.70	0.90	A
19.	Engaging qualified personnel in maintenance	2.90	0.89	A

Table 2 shows that respondents agree to each of the eleven items on teachers' strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges in South-South geo-political zone of Nigeria.

Discussion of Findings

The result showed that the college administrators' strategy for improving maintenance of instructional facilities for quality assurance is very important. The administrator thus coordinates all resources under his control in ensuring improved maintenance of instructional facilities such as workshop equipment. The administrator also carries out regular inspection of facilities, delegate staff on prompt report and repair of faulty laboratories and equipment requiring maintenance, partner with PTA and stake holders in host community on maintenance of instructional facilities.

This finding is in line with the findings of Yusuf (2008) that school administrators are to mobilize and motivate their staff and students to imbibe and internalize the maintenance culture, carry out periodic inspection and ensure community participation approach in maintaining school facilities.

Further, the result indicates that the teachers' strategy is indispensable in improving the maintenance of instructional facilities for quality assurance in technical colleges. In line with this, the result showed that the teachers' strategy include keeping of maintenance records, keeping the facilities clean after use, tightening loosed parts of the equipment, ensuring that moving parts of the equipment are regularly lubricated, controlling the students to ensure that instructional facilities are not misused and promptly reporting issues on maintenance of equipment to the school authority. This finding agrees with that of Amanchukwu and Obijuru (2013) that the school teacher should be able to keep maintenance

records, interpret manuals, add lubricants, detect faults, keep laboratories and workshop clean as well as control students using instructional facilities.

Conclusion

Based on the findings of the study, it was concluded that the administrators' (Head Teacher) strategies for improving the maintenance of instructional facilities for quality assurance in technical colleges in South-South geo-political zone of Nigeria includes coordinating all resources under his control in ensuring the prompt and effective maintenance of facilities, carry out regular inspections, delegate staff on prompt report and repair of faulty equipment, partner with Parents Teachers Association and stake holders in host community on maintenance of instructional facilities for quality assurance in technical colleges.

It was also concluded that as strategies for improving maintenance of instructional facilities for quality assurance in technical colleges in South-South geo-political zone of Nigeria, the teacher keeps maintenance records, ensures that facilities are clean after use, tighten loosed parts of the equipment, ensures that moving parts of the equipment are regularly lubricated, control the students and other users to ensure that laboratories equipment are not misused and promptly reporting issues on maintenance of college facilities to the school authority.

5.3 Recommendations

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

- 1) Provision of logistics and fund to college administrator by government and non-governmental organizations to enhance implementation of maintenance strategies
- 2) Teachers and students should be trained and encouraged to imbibe the spirit of maintenance
- 3) Host community should assist the college with material and human resources to implement quick response to maintenance of school learning facilities
- 4) PTA should partner with the school on funding of maintenance of instructional facilities such as laboratories equipment

References

- Akpan, G. A., Usoro, H. S. & Ekpo, A. B. (2010). Effects of team teaching on students performance in introductory technology in secondary schools in Akwa Ibom State, Nigeria. *An International Multi-Disciplinary Journal, Ethiopia* 3(4) 41-54. Retrieved from www.afrev.com.
- Alio, A. N & Iloma, U. (2014). Strategies for improving quality assurance in technical colleges in Rivers State. *LIT Academic Journal* 2 (1) 208 -221
- Alio, A. N. & Uzor, O. O. (2010). Enhancing management competencies of electronic craftsmen in the informal sector of the economy of Enugu State Nigeria. *International Technology Research Journal (INTERJ)*, 1(1),39-51.
- Amanchukwu, R.N. & Obijuru, J.U.N. (2013). Dilemma in the classroom: A Hindrance to Academic Success. *International Journal of Educational Foundations & Management*, 1(1), 1-11
- Aniedi, U. & Namkere, J. U. (2012). Technical and Vocational Education and Training (TVET) and Sustainable National Development in the New Global Economy: The Case Study of Akwa Ibom State of Nigeria. *Nigerian Vocational Association Journal*, 1(17),171-183.
- Angya, C. A. (2012). Quality assurance in Nigerian educational system and national economic growth: A gender perspective. *LIT Academic Journal*, 1(2), 1-1.

- Borahan, N. G. & Ziarati, R. (2002). Developing quality criteria for quality application in higher education sector in Turkey. *Total Quality Management*. 13(7), 913-920.
- Collins, H. (2015). Definition of technical college. Retrieved from <http://www.collinsdictionary.com/dictionary/English/technical-college>.
- Denga, N.B. (2001). *Introduction to teacher education*. Kano: Jafe Associates Ltd.
- Federal Republic of Nigeria (2004). *National Policy on Education*. 4th Edition. Lagos: NERDC Press.
- Federal Republic of Nigeria (2013). *National Policy on Education*. 6th Edition. Lagos: NERDC Press.
- Federal Republic of Nigeria (2014). Nigerian Educational Research and Development Council (NERDC)
- Garrison, D. R., & Archer, W. (2000). A transactional perspective on teaching-learning: A framework for adult and higher education. Oxford, UK: Pergamon. 6.
- Hornby, A. S. (2004). *Oxford advanced learners dictionary of current English*. Oxford: University Press.
- Ikorok, M. M., Akgobio, I. I. & Ogunjimo, L. O. (2012). Quality assurance package for health care in Nigeria. The case of Akwa Ibom State. *International Journal of Nursing and Midwifery*. 4,(3),25-32
- Ikpeba, V. A. (2012). Qualitative teacher education for service delivery in Nigeria. *Lit Academic Journal*. 1(2), 187- 192
- Iloa, U. (2013). Effects of digital technology in the teaching and learning of basic technology in Junior Secondary Schools in Rivers State. *Journal of Studies in Education* vii (1), 59-66
- Iloa, U. & Amadike, O. (2013). Gender disparity in electrical electronics technology in River State of Nigeria: Influence of culture in the 21st century. *Nigerian Journal of Education, Science and Technology*. 2(1), 174-182.
- Johnson, R. (2012). Definition of technical college Retrieved from http://johnsonsr.spps.org/what_is_a_technical_college.
- Maduewusi, B. U. & Onyechu, J. A. E. (2010). Quality assurance in primary education in Nigeria. *International Journal of Research Development*. Retrieved November, 22, 2014, from www.wesoedu.com/assequen/approaches in international journal pdf.
- Mbaba, U. G. (2006). *Teaching strategies, students' characteristics and academic performance in Introductory Technology in Akwa Ibom State*. (Unpublished Ph.D. Thesis) University of Uyo, Uyo.
- National Board for Technical Education (2012). National Board for Technical Education (NBTE). C:\Users\Hp\Downloads\National Board for Technical Education (NBTE) list of programmes.htm.
- Ndomi, B. M. (2005). Revisiting the learning experience of technical college farm machinery curriculum for empowerment of recipients in Nigeria. *Journal of Nigerian Association of Teachers of Technology (JONATT)*. 5 (1) 88 - 94.
- Nkemakolam, E. O. (2007). Quality assurance in teacher education. Paper presented at the 20th Annual Conference of the curriculum Organization of Nigeria. Port Harcourt, Rivers State, August 16th.
- Nwachukwu, C. (1988). *Educational administration and supervision*, Lagos: Akin Publishers
- Ogakwu, V. N. & Isife, T. C. (2012). Issues and challenges of Universal Basic Education in Nigeria and its implication for educational development. In S.G.N. Eze & A.N. Onuorah (eds.), *Issues and challenges in Universal Basic Education in Nigeria*. Onitsha: West and Solomon Publishing Coy. Ltd.
- Okah, R.I. (2002). *Modern strategies in educational management and planning*. Port Harcourt: Harey Publications

- Okebukola, P. A. (2004). *Gender Equity in science classrooms*: Paper Presented at the UNESCO Conference Practoria, U.S.A.
- Okoro, C. O. (2006). The teacher: the key to achieving and maintaining quality assurance in education. *Omoku Journal of Women in Colleges of Education (OJUWICE)*, 2,(1),1-12.
- Ozioko, C. (2011). School curriculum: Role of teachers as implementers. *Journal of Research in Science and Technology Education*. 4(1), 1-9.
- Tanner, C.K. (2006). Effects of the school's physical environment on student achievement. *Educational Planning*, 15 (2): 25-44.
- Ovute, A. U. & Ede, M. O. (2012). Teachers competency in development of diagnostic instruments towards quality assurance in teaching. *Lit Academic Journal*. 1(1), 13-20.
- Yusuf, M.A. (2008). *School plant planning and secondary school students' learning outcome in south-west Nigeria*. PhD dissertation. University of Ado- Ekiti.