

# Quality Assurance in Higher Technical Education and the Context of Youth Empowerment for Sustainable Development

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## ABSTRACT

Recent empirical evidences on higher technical education at a national scale focused on the relevance, student's poor perception, low enrolment and progression rates, and the growing impact of globalization on the management of higher technical and vocational education with little or no reference point to the factor of quality assurance. This paper therefore, correlates quality assurance factors in higher technical education and the context of youth empowerment for sustainable development. A survey of public technical colleges was done in Ogun State. From an estimated population of 637 final year students and 28 instructors and management staff, a simple of 376 students and 17 instructors and management staff were selected using the stratify random sampling technique. A 4-point rating scale validated questionnaires tagged: "Higher Technical Education, Youth Empowerment and Sustainable Development Scale (HTEYESDS) ( $r=0.79$ ), complemented with focus Group Discussion (FGD) was used for data collection". Three research questions were raised and answered. Data were analysed using descriptive and inferential statistics of Pearson correlation, multiple regression and analysis of variance at 0.05 alphalevels. Results showed that poor quality assurance limits the capacity of higher technical education in the empowerment of youth for sustainable development (82.6%). Quality assurance factors significantly correlated with higher technical education in the empowerment of youth for sustainable development ( $r=0.188$ ;  $P < 0.05$ ). It was therefore recommended that government should neither neglect nor compromise the factors of quality assurance in higher technical education as they predicts youth empowerment drive in the system.

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## Background to the Study

In recent situation analysis in the technical and vocational education sub-sector, Okachi (2007) reported that very low student enrolment in programmes very poor teaching and learning environment, inadequate funding, quality of academic staff; ineffective student industrial work experiment scheme, very low manufacturing and engineering infrastructure and practice (Yakubu, 2006) and obsolete curriculum were situations in practice that militate against the effective implementation of higher technical education in Nigeria. Given the above limiting factors, one then wonders if Nigeria has any national development objective in relation to the development of higher technical education. Otherwise, considering the fact that the Federal Government of Nigeria, (FGN) (2004) in its national policy on education (section 7:30-3) identifies three basic goals of technical and vocational education, then it is not expected that this sub-sector should be entangled in these webs of inefficiencies and ineffectiveness.

The situation analysis above shows that quality assurance is neglected and in some cases, grossly compromised relative to the objectives of the sub-sector in national development. Meanwhile, the report of the National Board for Technical Education (NABTE) in the 2005 accreditation exercise nation-wide provides a decimal of a failed educational sub-sector. NABTE reported that, out of 80 programmes visited in the 19 Federal Science and Technical Colleges, only 24 were granted accreditation (30%). At the state level, out of the 132 institutions with 575 programmes visited, only 260 were granted accreditation (45.2%) while 13 programmes presented by the 3 private technical colleges, had only 6 granted accreditation (46%).

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In general, the failure of the accreditation of most of the programmes was due to poor quality assurances, yet the programmes are very crucial to the full implementation of the New Economic Empowerment Development Strategies (NEEDS) and consequently, the achievement of the Millennium Development Goals (MDGs) with a central theme on sustainable development. This is underscored by the FGN (2004) conceptualization of technical education as 'that aspect of education, which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. Besides, it deals with the body of knowledge' skills and procedures for making, using and doing things as it provides the type of knowledge and skills which if properly harnessed, enable the society of solve the problem of how to use available resources and scientific knowledge to improve the quality of life of her people (Ugwu, 2001). In a related development, higher technical education which provides knowledge, develops skills and also inculcates the positive attitude that are necessary for entry and progress in an occupation (Okoro, 1993).Is therefore designed to prepare skilled personnel at lower and middle levels of qualification for one or a group of occupations, trade or jobs 9 Osuala, 1995).

Therefore, the process of quality assurance is vital to the overall objectives of higher technical education in the drive towards achieving the MDGs.

This is informed by the various submissions by scholars on the relevance of quality assurance in the educational settings. Quality depicts 'fitness of purpose' in relation to the user and customer needs (Ekhuagere, 2000), just as it is related to exceptionality, consistency (reliability), fitness for purpose, value for money and transformation (Havey and Green 1993). These attributes are the core of global best practices in institutional quality management, which consequently give rise to various quality indicators and quality assurance pathways with reference to higher technical education (Oghenekohwo and Tambous, 200). Various researches have taken into cognizance the factors of quality as related to student academic performance in all the educational settings with recommendations ranging from the institution of Total Quality Management (TQM) (Babatola, Adedeji and Erwar, 2007); strategic blue print for achieving and sustaining quality (Okebukola, 2006) ensuring that factors input into the system attain fitness of purpose, fitness for purpose, value for money, transformation and perfection (Ekhuagere, 2000).

However, irrespective of the dimensions from which quality assurance is contextualized relative to higher technical education and youth empowerment, basic parameters of assurance have been identified in the line with the learning content, management, physical facilities (infrastructure) and equipment, funding and partnership. Quality is only assured to the extent that all these parameters are satisfied to guarantee the factors input into higher technical education for youth empowerment in a sustainable drive. This is informed by the objectives of higher technical education as related to youth empowerment (FGN, 2004).

Higher technical education this provides the basis for youth empowerment when it is capable of accessing requisite skills training, problem solving techniques and facilitates the inculcation of appropriate technologies and information for sustainable development in any said setting. Since empowerment itself is a synergy (Nigel and Werner, 2001), access to skills and knowledge training through higher technical education serves as one of the major approaches to the sustenance of youth development for sustainable development. In terms of economic development, the empowerment approach focuses on mobilizing youth for self-reliant development through personal skill development (Thomas and Velthouse, 1990).Which of course is originally enshrined into the goals of higher technical education. Therefore, youth development is related to those processes as of the empowerment cycle which implies:

*....the ongoing growth process in which all youth are Engaged in attempting to (1) meet their basic personal and social needs to be safe, feel, cared for, are valued, useful and be spiritually grounded, and (2) build skills and competencies that allow them to function and contribute in the daily lives. (Pitman, 1993:8)*

The understanding is that, the conceptualization of technical education in the overall educational system is to respond to their needs and enhance their participation in the development drive through creativity and innovation which are made possible by technical education. Sustainable development cannot therefore be attained if the processes of youth development compromised through quality assurance in higher technical education. It is in this context that a schema on the specific goals of higher technical education showing the synergy of youth empowerment is derived for this study.

**Figure 1: A Schema on the Synergy of Higher Technical Education, Quality Assurance and Empowerment for Sustainable Development**

Higher Technical Education(Goals)	Quality Assurance (Factors)	Empowerment (Factor)
	Sustainable Development (Indicators)	

**Source: Iyunade, O. T (2009):** A synergy of Higher Technical Education, Quality Assurance and Youth Empowerment.

The schema shown in figure 1 above depicts the synergy of the variants in the relationships between the goals of higher technical education, quality assurance and youth empowerment for sustainable development as derived from the background.

**Statement of the Problem**

Over the years, various studies, have examined the issue of quality assurance with most reference to assessment, curriculum, evaluation and management of higher technical education. Yet, little or no empirical work seems to have investigated the synergy of higher technical education, quality assurance factors and youth empowerment for sustainable development. In fact, where instances of such studies were cited, findings were only tangential to the variants of youth’s empowerment and sustainable development. This study thus filled this existing gap in knowledge.

**Research Questions**

The following research questions were raised for the study.

- (1) Do quality assurance factors significantly predict goals achievement in higher technical education for youth empowerment?
- (2) To what extent do quality assurance factors correlate with quality higher technical education for sustainable development through youth empowerment?
- (3) What are the composite and relative impact of quality assurance factors on higher technical education programmes for youth empowerment and sustainable development?

**Objectives of the Study**

Specially, the Study Sought to:

- (i) Find out if quality assurance factors predict goals achievement in higher technical education for youth empowerment;
- (ii) Establish the extent to which quality assurance factors correlate with quality in higher technical education for youth empowerment; and
- (iii) Find out the composite and relative impact of quality assurance factors on youth empowerment for sustainable development.

**Scope of Study**

The study focused on the final year students of three technical colleges in Ogun State, Nigeria. These included Government Science and Technical College, Ijebu-Ode; Government Science and Technical College, Ijebu-Imusin. The dependent variables considered in the study were youth empowerment and sustainable development through higher technical education quality assurance factors (independent variables)

**Methodology**

The survey research design was adopted. The population comprised of all final year (627) of Government Science and Technical College in Ogun State, Nigeria. Using and stratify random sampling technique, 376 student were selected along the strata of technical disciplines. A validated 4-point rating scale questionnaire tagged: "Higher Technical Education, Youth Empowerment and Sustainable Development Scale" (HTEYESDS),  $r = 0.79$  compliment with Focus Group Discussion (FGD) for 17 instructors and management staff were used for data collection. Three research questions were raised and answered. Data were analysis of variance at 0.05 level of significance.

**Result and Discussion of Findings**

Data analysis was based on a total of 226 responses collated from students and the FGD conducted with the selected instructors and management staff. A result indicates that there were more male (62%) the female (38%) students who participated in the study. Technical skills orientation of students in the various occupations (trade) depicts the following: building (42%), wood technology (26%), engineering (22%) and textile (10%) leather. This is an indication that, most of the students were less inclined to engineering and wood technology. This is perhaps due to the limitations faced by the students in various engineering and technological oriented trades as evidenced in poor quality assurance (82%) leadings to low empowerment drive.

**Research Question1**

Do quality assurance factors significantly predict goal achievement in higher technical education for youth empowerment?

To answer this question, multiple regression analysis was adopted establish the extent of prediction of each of the quality assurance factors.

Table 1 below shows the results

**Table 1: Multiple Regression showing the prediction of quality assurance factors on goals achievement in Higher Technical education for youth empowerment.**

Quality Assurance Factor	B	Std. Error	Peta	T	Sig.
• (constant)	78.275	10.148	-	7.713	.001
• Learning Content					
• Management	6.309	.510	.271	12.364	.000
• Physical Facilities	3.562	.593	.142	6.010	.000
• Equipment					
• Funding	2.985	.549	.116	5.438	.000
• Partnership					
	1.628	.576	.060	2.826	.005
	3.537	.435	.163	8.135	.000
	3.092	.576	.119	5.366	.000

From the table 1 above, results indicate that all quality assurance factors significantly predicted the achievement of the goals of higher technical education for youth empowerment. For example, the learning content in quality assurance mostly predicted goals achievement ( $B=6.309$ ;  $P<0.05$ ), followed by Management which involves many other factors ( $B=3.562$ ;  $P<0.05$ ) while equipment factor predicted goal achievement in higher technical education the least ( $B=1.628$ ;  $P<0.05$ ). This result validates the submission of Alonge (2006) that quality assurance in higher education is related to excellence in the performance of products and conformance with standard in relation to quality contents and instructional designs competent and highly trained instructors, appropriate technology and flexible regulatory environment. These are all factors of quality assurance that predict achievement of goals set for higher technical education for youth empowerment for the attainment of sustainable development.

**Research Question 2**

To what extent do quality assurance factors correlate with quality in higher technical education for sustainable development through youth empowerment?

**Table 2: Pearson Correlation Test on Quality Assurance Factors with Quality in Higher Technical Education for Sustainable Development.**

	Quality Assurance Factors	Quality Higher Technical Education
Quality Assurance Pearson Correlation Factors	1,000	.188***
Sig. (2-tailed)	-	.000
N	226	226
Quality Higher Pearson Correlation Technical Education	**188	1,000
Sig. (2-tailed)	.000	-
N	226	226

\*\* Significance Results @ P < 0.05; r = .188.

The result in table 2 above shows that quality assurance factors significantly correlated with the attainment of quality in higher technical education for sustainable development through youth empowerment. This result support past empirical evidences (Oghenekohwo and Tambou, 2009; Ugwu, 2001; Osuala, 1995; Havey and Green 1993). Thus, it is imperative that to ensure quality in higher technical education in terms of conformance with standard and best practices (Alonge, 2006), and a comprehensive process of guaranteeing efficiency in quality instructors, environment of instruction, content of instruction, there must be commitment to “zero defeats” (Havey and Green, 1993; Egbokhare, 2006).

**Research Questions 3**

What are the composite and relative impact of quality assurance factors on higher technical education programmes for youth empowerment and sustainable development?

**Table 3 (a): One-way Anova test on the composite Impact of Quality Assurance Factors on Higher Technical Education Programme for Youth Empowerment.**

Sources of Variation	Sum of Square	Df	Mena Square	F	Sig
Regression	7704.779	5	1540.955	11.753**	.000
Residual	24125.439	220	131.117		
Total	31830.216	225			
R = .492 R <sup>2</sup> = .242 Adj R <sup>2</sup> = .221					

\*\* Significant Result @ P < 0.05; F = 11.753

Given that, the F calculated value of 11.754 is greater than F-critical value (1.96) at P < 0.05; this implies that, quality assurance factors had significant composite impact on higher technical education programmes for youth empowerment. Besides, the R<sup>2</sup> value (.242) when multiplied by the coefficient of 100 (R<sup>2</sup> = .252 x 100 = 24.2%) implies that, all the factors of quality assurance when taken together, jointly contributed 24.2% to the prediction of quality attainment higher in technical education programmes for youth empowerment.

**Table 3 (b): Relative Impact of Quality Assurance Factors on Quality Higher Technical Education Programmes for Youth Empowerment.**

Quality Assurance of Factors	B	Std. Error	Peta	T	Sig.
• Constant	90.236	8.887	-	10.154	.000
• Sustenance of Management	2.127 5.978	.693 .509	.065 .220	3.067 11.756	.0002 .000
• Physical Facilities	3.964	.565	.155	7.016	.000
• Equipment	3.240	.535	.128	6.056	.000
• Funding	3.517	.626	.109	5.618	.000
• Partnership	2.142	.433	.112	4.986	.1002
• Environment	2.566	.473	.100	5.42	.000

The result in table 3 (b) above shows the relative impact of quality assurance factors on quality higher technical education programmes for youth empowerment. All the seven factors of sustenance of learning contents (Peta = .065), Management (Peta = .220), Physical facilities (Peta = .155), Equipment (Peta = .128), funding (Peta = .109), Partnership (Peta = .112) and Environment (Peta = .100) contributed significantly  $P < 0.05$  to the sustenance of quality higher technical education. This result underscores the views of fielding (1995), Feldman (1998) on the relevance of quality factors in higher education and youth empowerment for sustainable development. It is also obvious that, given these factors' impact on quality higher technical education programmes, the process of youth empowerment could be accelerated and sustained for sustainable technological development.

**Table 4: Schedule of FGD Sessions Conducted Among Instructors for the Study**

Trades	Location of FGD	No. Of Session	Date	No of Instructors per session
Engineering	Ijebu-Ode	1	26 Nov. 2008	8-12
Building	Idi-Aba	1	22 Jan. 2009	8-10
Textile and Leather	Ijebu-Ode	1	10 Dec. 2008	8-12
Wood	Ijebu-Imusin	1	11 Feb. 2009	8-10

**Review of FGD**

The results of this study have indicated that quality assurance factors in higher technical education had significant joint and relative impact on youth empowerment for sustainable development. To complement these empirical results, the FGD conducted among instructors reaffirmed the need to sustain the quality assurance factors if quality in higher technical education would serve its specific goals of youth empowerment in skills acquisition and self-reliant development. For instance, an engineering instructor at the Government Science and Technical College, Ijebu-Ode observed in an FGD session that:

*There is an increasing demand for up-date inengineering infrastructure in response to global standard. Our students can only meet the globaltechnical expectations when they are constantly trainedand accessed to modern technological infrastructure.Hence, my challenge is on how to sustain quality engineeringinstructions to enable my students cope withthe global expectations after graduation. (Ijebu-Ode, 2008)*

Corroborating the above view, as instructor in textile and leather craft in another session noted thus:

*The textile and leather trade is a highly competitive one this requires that total quality management is constantly sustained, given the market challenges from developingcountries as well as the giant Asian countries with highly improved textile technology. We must improve on quality through instruction otherwise, our designs and products will become obsolete as a result of glowing high competition. (Ijebu-Ode, 2008)*

Meanwhile, in the building instructors FGD it was submitted by discussants that:

*Quality assurance is mostly associated with the fact of facilities and equipment in this trade. As a result of increasing collapse of building arising from structural defects and the use of sub-standard materials, instructional process demands more practical exercise than otherwise. We cannot afford go graduate products who do not know, neither can apply the best facilities and structures in the building industry. The factors of quality must be sustained to ensure that the goals of higher technical education is achieved. (Idi-Aba, 2009)*

In a related submission, a wood instructor in a session contended that:

*Due to poor quality in wood technology, the public has resolved to importation of wood materials and furniture from outside the country. This implies that we must have adequate equipment and workshop facilities to carry out our instructions in a most efficient process. I always find it difficult to convince people that his institution cannot commercialize her wood products due to poor quality delivery. (Ijebu-Imushin, 2009)*

From these results, it become evident as has being empirically established in this study that, quality assurance factors cannot be compromised in higher technical education as they serve as indicators for measuring efficiency and sustenance of youth empowerment for sustainable development.

### **Recommendations and Conclusion**

Obviously, this study has established the parameters for quality assurance in higher technical education for youth empowerment and sustainable development. Yet, it is inevitable to advance that, polity issues in higher technical education need to re-focus on the seven quality assurance factors if “zero defects” is to be achieved in the delivery of technical education programmes. More so, the National Board for Technical Education (NABTE) should sustain its re-accreditation of programmes exercise in all the technical colleges and polytechnics and where there is the need to restructure programmes to meet local content need, the body must assist to ensure compliance. Arising from the above, it is evident that the factors of quality assurance and the mechanism for enduring best practices in higher technical education must be provided as guidelines or parameters for assurance in quality if youth are to be empowered for sustainable development in the light of the MDGs expectations by 2015.

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