
QUALITY ASSURANCE STRATEGIES TO ENHANCE POLYTECHNICS EDUCATION: A SINE QUA NON FOR SKILLS ACQUISITION AND SELF-RELIANCE IN THE DIGITAL ERA

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Abstract

The paper focuses on quality assurance strategies to enhance polytechnic education in South-South and South-East in the digital era. The study adopted the descriptive survey design. The population of the study was 614 lecturers from eight polytechnics. Two research purposes, two research questions and two hypotheses guided the study. A structured questionnaire with two sections was design and used for the study. The four point likert rating scale was used to collect data from respondents. The questionnaire were face validated by three experts while the internal consistency of the instrument was determined by using Cronbach Alpha method which yielded a coefficient of 0.79. 585 copies of questionnaire were retrieved and used for the study. Mean and standard deviation were used to analyze the research questions while z-test was used to test the hypothesis at 0.05 levels of significance. It was concluded that quality assurance strategies should be put in place for polytechnic education to progress. It was recommended among others that curriculum of polytechnics should be reviewed every 5 years to enhance the quality of education and that the quality assurance strategies identified in this study should be practiced by all polytechnics to achieve the objectives for which polytechnic institutions of learning were established.

Keywords: *Quality assurance, education, polytechnic, skill, skill acquisition.*

Introduction

Quality assurance is a general philosophy pervading all aspects of a system activity. It is the establishment of standard in various processes and activities that lead to the attainment of quality results. Harman and Okereke in Eke (2018) stated that quality assurance is a proactive measure of ensuring quality in any organization. In polytechnic education, quality assurance aims at preventing problems and ensure that the produce of the system conform to the expected standards. It is a continuous process by which an institution can guarantee that standard and quality of its educational provisions are maintain and improved upon. According to Onyesom and Ashibougwu in Ikelegbe (2020), they viewed quality assurance in education as performance measures designed by authorities for assessing the performance of institutions with a view to ensuring that learning outcomes meet needs of society. It is a systematic management and assessment procedures adopted by higher education institution and systems to monitor performance against objectives and to ensure achievement of quality outputs and improvement.

The heart of education all over the world is quality. This is why Oluwadere (2019) stated that the central issue in the production of any product be it material and human is quality. Therefore quality assurance mechanism in polytechnic education could not be over emphasized as it is the only panacea to producing quality graduates that can be accommodated in the present technological environment. It is the gateway to achieving needed skills and it's the recipe to inculcate creativity and innovation among graduates in order to be self-sufficient.

Polytechnic education in Nigeria is part of tertiary education institutions. According to Ikelegbe (2020), Degree No. 33 of 1979 which gave legal power to the establishment of polytechnics education in Nigeria, among others, states that the main purpose of polytechnics education is to produce middle level manpower to manage the nation's economy. The polytechnic is saddled with the promotion of technical and vocational education and training, technology transfer and skills development to enhance the social-economic development of Nigeria. Idoko in Onomiwoi (2023) stated that polytechnics are to engage in researchers, suitable for developing human and material resources needed by the nation industry and economy. According to the revised National Policy of Education NPE (2016) stated that the goals for which tertiary education (including polytechnics) are established in Nigeria includes;

- i. Contribute to national development through manpower training.
- ii. Provide accessible and different quality learning opportunities in formal and informal education in response to the needs and interest of all Nigerians.
- iii. Provide high quality career counseling and lifelong learning programmes that prepares students with the knowledge and skills for self-reliance and the world of work.
- iv. Reduce skill shortage through the production of skilled manpower relevant to the needs of the labour market.
- v. Promote and encourage scholarship, entrepreneurship and community service.
- vi. Forge and cement national unity; and
- vii. Promote national and international understanding and interaction.

In addition to the above, Offorma (2016) averred that the central purpose of education is virtue or character training which inculcates values, acquisition of knowledge, understanding

and physical skill. Tertiary education is the engine room; from where objectives of education for national development are crystallize.

Skill usually is the art of possessing the ability to power, authority or competency to do the tasks required of an individual on the job. It has to do with expert knowledge and creative reasoning to a level of mastery (Sokyes, Wetnwan and Bewaran, 2018). Skills acquisition on the other hand, is the ability to be trained on a particular task of function and become expert in it. Oluwadare (2020) noted that acquisition of skills is the recipe for eradicating extreme poverty and hunger by creating an avenue for employment thereby creating an avenue for jobs and wealth creation while instilling self-sufficiency and reliance. Acquiring skills from the polytechnic by students before graduating can only be realized if quality assurance is giving its rightful place as this will enable graduate to acquire the right skills which will make them to be qualified for paid jobs as well as increase the organizations productivity.

Digital era, according to <https://www.studysmaster.co.uk>, in Ikelegbe (2022) is often known as information age, it refers to a historical era and information technology-based economy originating in the twentieth century. It is marked by a rapid transition from industrialized economy brought about by the industrial revolution to a knowledge-based economy. Today, with the emerging new age, which is most widespread in use, the digital age has come to stay. It is only wise that all higher institutions of learning consider or re-think technology and make it a duty for graduates to acquire quality skills in the use of the merging technology before graduating because skill acquisition in digital technologies has almost become necessary, especially when applying for jobs. However, the situation is far different as many graduates of polytechnics education continue to seek for jobs endlessly due to absence of required skills.

Statement of the Problem

Polytechnic education in Nigeria is aimed at promoting technical and vocational education and training, technology transfer as well as skills development. The graduates from the polytechnics are expected to be self-sustaining and to gain job placement in the labour market. Regrettably statistics available have shown that graduates from the polytechnics are neither self-reliance nor gainfully employed. This scenario has been attributed to absence of quality assurance in the polytechnic education which has affected acquisition of skills.

Also, the present curriculum used for the training of polytechnic students was last reviewed 2004, whereas technology emerges daily in all fields of endeavour. No doubt 2004 curriculum cannot fit into training polytechnic students in 2023. Against this background, this study is carried out to determine quality assurance strategies that could assist in achieving the objectives of polytechnic education in Nigeria.

Purpose of the Study

The main purpose of the study was to determine quality assurance strategies to enhance polytechnic education. Specifically the study sought to determine;

1. Quality assurance strategies to enhance polytechnic education in South-South and South-East Nigeria in the digital era.
2. Quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Research Questions

The following research question guided the study.

1. What are the quality assurance strategies that can enhance polytechnic education in South-South and South-East Nigeria in the digital era?
2. What are the quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

1. There is no significant difference between the mean response of male and female polytechnic lecturers on the quality assurance strategies that can enhance polytechnic education in South-South and South-East Nigeria in the digital era.
2. There is no significant different in the mean ratings of experienced and less experienced lecturers regarding quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Methods

The study adopted the descriptive survey design and was conducted in South-South and South-Eastern states of Nigeria. Eight polytechnics that are found in South-South and four in South-East constituted the area of study. The population of the study consisted of 614 lecturers. There was no sampling because the population was of a manageable size. A structured item questionnaire which consisted of 24 items titled Quality Assurance Strategies to enhance Polytechnic Education (QASEPE) with two sections was designed and used to generate data for the study.

The questionnaire were designed on a four point rating scale of strongly agree (SA) – 3.5-4.0 points, agree (A) – 2.50-3.49 points, disagree (D) 1.50 – 2.49 points, strongly disagree (SD) – 0.50-1.49 points. The instrument was face validated by three experts. The internal consistency of the instrument was determined by using Cronbach Alpha method which yielded coefficient of 0.79. The administration and collection of the instrument was done by the researcher assisted by six research assistants. Mean and standard deviation were used to analyze the research questions while z-test was used to test the hypotheses at 0.05 level of significance. A mean score of 2.50 and above was the accepted benchmark while a mean score below 2.50 was rejected. For the hypotheses testing, if the calculated z-value is less than the critical table value, the calculated value was accepted, where the calculated z-value is equal to or greater than the critical value, the hypotheses was rejected.

Results

Research Question 1: What are the quality assurance strategies that can enhance polytechnic education in South-South and South-East Nigeria in the digital era?

Table 1: Mean ratings and standard deviation of the quality assurance strategies that can enhance polytechnic education in South-South and South-East Nigeria in the digital era.

S/N	Items on Quality Assurance Strategies	Mean	SD	Decision
1.	Redesigning polytechnic curriculum by NBTE to inject rediscovered knowledge areas in various course including ICT in all programme	3.96	0.81	Strongly agreed
2.	Re-strategizing methods of supervision with the right caliber of people by NBTE	3.92	0.80	Strongly agreed
3.	NBTE should ensure that reaccreditation of programmes should be done within 3 years as against the 5 years systems at present	3.91	0.86	Strongly agreed
4.	Polytechnic should be able to admit within the stream allotted by NBTE	3.68	0.88	Strongly agreed
5.	Proper sanction should be put in place against any polytechnic that admit above the recommended stream	2.76	0.91	Agreed
6.	Adequate laboratory and library equipment should be provided	3.88	0.84	Strongly agreed
7.	Library's in the polytechnic should include visual libraries	3.86	0.83	Strongly agreed
8.	Lecturers classroom should befit the modern times to encourage lecturers in doing their work	3.95	0.79	Strongly agreed
9.	There should be quality selection guidelines to aid admission of students	3.45	0.92	Agreed
10.	Modalities for maintaining available facilities and infrastructure should be put in place	3.00	0.97	Agreed
11.	Management of polytechnics should practice good governance devoid of corrupt practices	3.86	0.82	Strongly agreed
12.	Proper collaboration between industries and polytechnics should be put in place to aid SIWES programme achieve its objectives.	3.80	0.85	Strongly agreed
13.	Students that play truancy in the SIWES programme should be made to face disciplinary measures	3.72	0.87	Strongly agreed
14.	Qualified lecturers with integrity should be engage to stimulate the polytechnic system	3.60	0.89	Strongly agreed
15.	Impact assessment should be carried out every 5 years by owners of public polytechnics to ascertain the level of growth in the system.	3.50	0.84	Strongly agreed
	Grand Mean/Standard Deviation	3.44	0.86	Agreed

The data in table 1 indicated that 12 items were rated strongly agreed by respondents; their mean scores were above 3.50. they includes items no. 1,2,3,4,6,7,8, 11,12,13, 14 and 15 with mean scores of 3.96, 3.92, 3.91, 3.68, 3.88, 3.86, 3.95, 3.86, 3.68, 3.72, 3.60 and 3.50 respectively. While 3 items were rated agreed. They are items no. 5, 9 and 10 with mean scores of 2.76, 3.45 and 3.00 respectively. With a grand mean of 3.44, it is concluded that lecturers rated item listed in table 1 as quality assurance strategies that can enhance polytechnic education in the digital era. The standard deviation which is within 0.79-0.97, it is an indication that respondents were homogenous in their responses.

Research Question 2: What are the quality funding strategies for promoting polytechnic education in South-South and South-East, Nigeria in the digital era?

Table 2: Mean and standard deviation of the quality funding strategies for promoting polytechnic education in Nigeria in the digital era.

S/N	Items on Quality Assurance Strategies	Mean	SD	Decision
16.	Government should budget and release adequately certain amount yearly to fund polytechnic education.	3.78	0.68	Strongly agreed
17.	Polytechnics should involve the private sector in the funding of polytechnic education	3.65	0.72	Strongly agreed
18.	Polytechnics should establish consultancy services to generate fund	3.08	0.76	Agreed
19.	Alumni of polytechnics should yearly assist their alma mater through funding some projects	3.06	0.76	Agreed
20.	Polytechnics should solicit for find from wealthy philanthropists for intervention through funding some projects.	2.99	0.81	Agreed
21.	Polytechnics should seek for funding and intervention from Tetfund	3.69	0.61	Strongly agreed
22.	Polytechnics should collaborate with foreign institutions in getting grant especially training grant to assist their lecturers	3.01	0.70	Agreed
23.	Research projects produced especially by engineering students should be launch to generate fund	3.48	0.65	Agreed
24.	Money realized from launching should be used to produce more products to be sold to the general public to generate fund	3.49	0.65	Agreed
	Grand Mean/Standard Deviation	3.35	0.70	Agreed

The data in table 2 indicated that 3 items were rated strongly agreed. They are items no 16, 17 and 21, with mean ratings of 3.78, 3.65 and 3.69 respectively. All other items were rated agreed. They are items 18, 19, 20, 22, 23, and 24 respectively with mean ratings of 3.08, 3.06, 2.99, 3.01, 3.48 and 3.49 respectively. With the grand mean of 3.35, it is concluded that respondents rated items presented in respect of funding strategies as agreed. Also, with the standard deviation which ranges from 0.61-0.81, it is an indication that respondents rating are not far apart.

Results of Test of Hypotheses

Hypothesis 1: There is no significant difference between the mean response of male and female polytechnic lecturers on the quality assurance strategies that can enhance polytechnic education in South-South and South-East, Nigeria in the digital era.

Table 3: Summary of z-test analysis of male and female lecturers on quality assurance strategies in enhancing polytechnic education.

Sources of Variance	N	X	SD	Df	P	z-cal	z-crit	Decision
Male lecturers	382	3.12	0.67					
				583	0.05	0.35	1.96	Accepted
Female lecturers	201	3.24	0.61					

Key: N=No of Respondents, X=mean, SD = Standard deviation, Df=degree of freedom, p=level of significance, z-cal=z calculated, z-crit = z critical (table).

Results in table 3 shows that z-calculated value of 0.35 is less than the table value of 1.96 at 0.05 levels of significance and 583 degree of freedom. The null hypothesis is upheld. This indicates that male and female lecturers in the polytechnic do not differ significantly in quality assurance strategies required to enhance polytechnic education in the digital era in South-South and South-East in Nigeria.

Hypothesis 2: There is no significant difference in the mean ratings of experienced and less experienced lecturers regarding quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Table 4: Summary of z-test analysis of experienced and less experienced lecturers regarding quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Sources of Variance	N	X	SD	Df	P	z-cal	z-crit	Decision
Experienced	145	3.11	0.51					
				583	0.05	0.21	1.96	Accepted
Less experienced	460	3.21	0.57					

Key: N=No of Respondents, X=mean, SD = Standard deviation, Df=degree of freedom, p=level of significance, z-cal=z calculated, z-crit = z critical (table).

Results in table 4 shows a z-calculated value of 0.21 as against z-table value of 1.96 and degree of freedom of 583 at 0.05 level of significant. Since the calculated value is less than the table value, the null hypothesis is upheld that, there is no significant difference in the mean ratings of experienced and less experienced lecturers on quality funding strategies for promoting polytechnic education in South-South and South-East Nigeria in the digital era.

Discussion

The findings of the study from research question one revealed that respondents are in agreement with all the items listed as quality assurance strategies that can enhance polytechnic education in Nigeria in the digital era. They include redesigning polytechnic curriculum by National Board for Technical Education (NBTE) to inject rediscovered knowledge areas in all courses including ICT in all programmes. Re-strategizing methods of supervision with the right caliber of people by NBTE, reaccreditation by NBTE should be

done every 3 years as against the 5 years at present, polytechnics should admit within the stream allotted by NBTE and proper sanction should be put in place against any institution that admit above the recommended stream. Also, adequate laboratory equipment, library, classroom and lecturers offices should befit the modern times. Again, there should be quality selection guidelines to aid in admission processes, adherence to modalities for maintaining available facilities and infrastructures plus practice of good governance by polytechnic management devoid of corrupt practices. Respondents also agreed that, there should be collaboration between industries and polytechnics regarding SIWES programme and students who play truancy should face disciplinary measures. Also that qualified lecturers with integrity should be engaged to stimulate the polytechnics system. Impact assessment should be carried out every 5 years by owners of public polytechnics to ascertain the level of growth in the polytechnic system.

The null hypothesis one which shows that there is no significant difference between male and female lecturers regarding quality assurance strategies in enhancing polytechnic education is a further boost of the respondents' answers to question one. The findings of this study is in line with the study of Okolie, Utoware and Kaizer (2017), that found that quality assurance strategies should be put in place to promote quality teaching and learning. Also, the study is supported by Abraham (2019) when he stated that assuring the quality of educational provision is a fundamental aspect of gaining and maintaining credibility of programmes and that quality assurance is related to accountability.

Findings from research question two revealed that respondents agreed to items on quality funding strategies for promoting polytechnic education. They include that; government should budget and release certain amount yearly to fund polytechnic education. Polytechnics should involve the private sectors, they should be involved in consultancy services and polytechnic should solicit for funds from wealthy philanthropist for intervention for funding specific projects. Also alumni of polytechnics should be involved in funding the polytechnics. Polytechnics should seek collaboration with foreign institutions not only in exchange of programmes but for grant to assist in training lecturers and that research projects from engineering students should be sold and money realized, should be used to produce more products for sale to the public to generate fund for the institution.

With reference to the research hypothesis two, it was found that the opinion of experienced and less experience lecturers did not differ significantly on funding strategies. This shows how important and effective these funding strategies are in ensuring quality in polytechnic education. The findings in research question two conform with Babalola in Nwosu, Crossdale and Ofulue (2018), when they reported that quality education is a function of adequate funding of the system. The establishment and running of tertiary education is capital intensive. Adequate funding is needed to provide the necessary facilities and equipment in order to provide quality learning for the students.

Conclusion

Based on the findings of the study, it is concluded that quality assurance strategies such as redesigning polytechnic curriculum, including ICT courses in all programmes of polytechnic and quality funding of polytechnics is needed to achieve the purposes for polytechnic education in Nigeria.

Recommendations

Based on the findings and conclusion of this study, the following recommendations are made;

1. Quality assurance strategies identified in this study should be practiced by all polytechnics to achieve the objectives for which polytechnics institutions of learning were established.
2. Curriculum of polytechnics should be reviewed every 5 years to include the rediscovered knowledge that meet the modern times to enhance polytechnic education.
3. Polytechnics management should refrain from sharp practices that will be inimical to providing needed training facilities for the students.
4. Qualified lecturers with integrity who are serious with their job should be employed to train students in order for the required skills to be attained by graduating the students.
5. National Board for Technical Education (NBTE) saddled with accreditation and re-accreditation of polytechnic programmes, should be firm in their supervisory roles and to sanction polytechnics that fails short of criteria for accreditation and re-accreditation of programmes.

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