

INNOVATIVE STRATEGIES FOR ACHIEVING QUALITY ASSURANCE IN THE TEACHING AND LEARNING OF MOTOR VEHICLE MECHANICS WORK IN NIGERIAN TECHNICAL COLLEGES

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Abstract

Motor Vehicle Mechanics Work (MVMW) as a trade subject in Nigerian technical colleges is designed to equip trainees with technical knowledge and skills needed for employment in the automobile workplace. Quality assurance is a mechanism put in place to ensure proper attainment of the goals of Motor Vehicle Mechanics Work as stipulated by the National Policy on Education in 2013. This study through literature review dealt with the concept of Motor Vehicle Mechanics Work as a trade subject, quality as well as quality assurance in Motor Vehicle Mechanics in technical colleges. The study also unveiled the need to achieve high quality assurance in Motor Vehicle Mechanics Work. The paper discussed some of the barriers towards attaining high quality assurance in Motor Vehicle Mechanics Work in Nigerian technical colleges. The paper proposed innovative strategies for achieving quality assurance in the teaching and learning of motor vehicle mechanics work in Nigerian technical colleges. The researchers based on literature evidence reviewed recommended among others: recruitment of only qualified MVMW teachers, provision of standard automobile workshop with functional equipment and tools for effective practical training as well as adequate provision of in-service training and retraining of MVMW teachers to equip them with new technological ideas and instructional methods to achieve high quality assurance system as well as quality graduates in Motor Vehicle Mechanics trade in Nigerian technical colleges.

Keywords: Motor Vehicle Mechanics Work, Learning, Teaching, Quality assurance, Technical Colleges.

Introduction

Teaching and learning are two activities that are geared towards the attainment of educational goals. According to Ayeni and Ogunbaru (2013) teaching and learning as a combined term refers to an organized instructional process that is consciously geared towards transforming and developing students' intellectual ability, skills, ethics and values to enable individuals function effectively and become self reliant, at the same time contribute positively to societal development. In the view of Akamobi (2005), teaching was defined as the process of transferring information from the teacher to the learner to facilitate desirable change in behaviour in the learner; while learning is a relatively permanent change in behaviour that occurs in a learner when the learner is expose to some experiences or training.

Teaching is a human undertaking whose aim is to help learners to learn. It is an interactive process between a teacher and a student under the teachers' guide (Abiodun, 1999). Learning on the other hand is a change in behaviour due to experience. Ogundipe (2004) sees learning as a process by which behaviour is initiated, modified or change. From these explanations by various authors, it is obvious that for successfully attainment of the purpose of teaching and learning of Motor Vehicle Mechanics Work as a technical trade subject in Nigerian technical colleges, innovative strategies for achieving quality assurance must be put in place in technical colleges.

Motor Vehicle Mechanics Work is one of trade subjects offered in Technical Colleges in Nigeria. It is a major component of the Technical and Vocational Education and Training (TVET) programmes in Nigeria. TVET is a type of education whose major objective is to prepare individuals for employment in chosen occupations by equipping them with the vocational skills, knowledge and attitude necessary for employment in recognized occupations. Federal Republic of Nigeria (FRN)(2013) described TVET as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

TVET is a form of education designed to develop skills, abilities, understanding, attitudes, work habits and appreciation encompassing knowledge and information needed by a person to enter and make progress in self or paid employment on a useful and productive basis. TVET gives individual the skills to live learn and work as productive citizen. It reduces the over dependence of graduates on government for employment. TVET is offered in technical colleges, polytechnics, monotronics, and colleges of technology among others. Technical colleges are regarded as one of the principal TVET institution in Nigeria for the training of craftsmen (NBTE, 2017). According to FRN (2013), the Motor Vehicle Mechanics Trade aspect includes: Auto body repairs and spray painting, Auto electrical work, Auto mechanical work, Auto parts merchandising as well as Air conditioning and refrigeration.

Motor Vehicle Mechanics' Work (MVMW) as a trade subject according to National Policy on Education (FRN, 2013) is one of the vocational programmes offered at the Technical College level. Motor Vehicle Mechanics trade in technical colleges is designed to equip trainees with

technical knowledge and skills needed for employment in the automobile workplace. The policy revealed that technical college is one of the vocational and technical institution saddled with the responsibility of educating and training craftsmen and master craftsmen in various technical trades in Nigeria. Graduates of Motor Vehicle Mechanics' Work course commonly called MVM according to National Board for Technical Education (NBTE, 2017), should among others be able to identify problems, repair and service mechanical, electrical and electronic system and components of cars, buses and trucks.

The philosophy of Motor Vehicle Mechanics' programme according to NBTE (2017) is to produce competent automobile craftsmen for Nigeria's technological and industrial development and to conduct examinations leading to the award of the National Technical Certificate (NTC) and Advanced National Technical Certificate (ANTC) for Motor Vehicle Mechanics' craftsmen and master craftsmen respectively. NBTE also strive to provide facilities and also coordinates activities in technical colleges to enhance student's achievement in MVM. The National Business and Technical Examinations Board (NABTEB) report on poor students' achievement in MVM is a pointer showing that students' interest in MVM is low. Ethel (2013) stated that high interest in a subject enhance high achievement. According to Ethel (2013), the increasing unemployment rate among automobile craftsmen resulting from the inability of MVM graduates to practice their trade could also be attributed to the cumulative effect of the students' low interest toward MVM in technical colleges.

In line with this, Olatunde (2014) attributed the periodic decline in students' interest in mechanical engineering trades at college level to poor motivation of student, inappropriateness of method of instruction as well as poor quality assurance system in MVM programme in technical colleges in North central Nigeria. Perhaps, developing innovative strategies for achieving quality assurance in the teaching and learning of Motor Vehicle Mechanics Work in Nigerian Technical Colleges could help improve the quality of craftsmen graduating from Motor Vehicle Mechanics programmes, thereby enhancing their employability skills in the labour market as well as preparing them for further education in tertiary technical and technological institutions.

Quality in Motor Vehicle Mechanics Work as a Trade Subject

In recent times, efforts by various educators and scholars to enhance quality in the education system has brought about various definitions as well as descriptions of the word “quality” and “quality assurance”. According to World Bank (2017) quality is a desirable attribute of a product or service that distinguishes it for the person seeking the attribute. Viewed from this definition, quality could be said to have the attribute of worth and acceptance. Nevertheless, World Bank (2017) maintained that good quality should possess the characteristics of conformance to expectation, conformance to requirement, excellence and value and loss of avoidance. Asiyai and Oghuvbu (2009) defined quality as a measure of how good or bad the products of higher education institutions in Nigeria are in terms of their academic performance and meeting established standards.

World Organization of Standardization (2014) defined quality as the totality of features and characteristics of a product or services that bear on its ability to satisfy stated needs. Article 11 of the World Declaration on Education (2003) sees quality as a multi-dimensional concept which should encompass all the functions and activities in schools. Such activities of higher educational institutions have been highlighted as teaching, research and scholarship, community service, staffing, students, infrastructures and educational facilities, equipment and the academic environment. High quality delivery is a prerequisite for effective productivity in education industry and hence quality education is an instrument for effecting national development. According to Ekong (2006), quality builds knowledge, life skills, perspectives, attitudes and values. When quality education is delivered high enough to meet set standards, the products of education should be able to perform well in the world of work in real life situation. When quality is low, performance cannot meet the set standards. Hence one can say that the quality of education has declined below set standard.

Quality in Motor Vehicle Mechanics Work as a trade subject in essence entails a functional MVM that can equip all MVM trainees or students with the required vocational and technical skills needed to gain employment in automobile industries, to practice their trade as automobile craftsmen in the automobile workplace. A quality MVM programme should be able to help graduating trainees or craftsmen to solve their professional problems and make them responsible

citizens and not a liability to society. Achieving quality MVM programme in Nigerian technical colleges demand a good quality assurance system in the planning and administration of activities in MVM programme in Nigerian technical colleges.

Conceptual Clarification on Quality Assurance in Motor Vehicle Mechanics Work Subject

The term Quality Assurance (QA) is the process of maintaining standards in products and services through inspection or testing of samples (Okebukola, 2010). In another view, Okebukola, (2010) noted that quality assurance is an umbrella concept for a host of activities that are designed to improve the quality of inputs, process and outputs of higher education system. Okebukola contended that quality assurance entails the quality of available instructional materials for teaching, equipment, facilities, school environment, pupils, curriculum, quality of instructional delivery and quality of teachers. Quality assurance is designed to prove and improve the quality of an institutions methods, educational products and outcomes (Oyebode, Oladipo and Adetome; 2008). Everyone has a role to play in ensuring quality assurance in trade subjects in technical college education system.

One of the key building blocks of quality assurance in education is the development of minimum standards as in qualification of MVM teachers, the quality of teaching in institutions, expected educational achievement of students and the development of a more rigorous management process for education so that the entire sector develop stronger operating policies, procedures which are well documented and adhered to. With time, this will develop into a total management system for technical education in line with what is practiced internationally. Alele – Williams (2004) defined quality assurance in any educational institution as that which indicates the pre-eminence and special features that makes the institution distinct from other forms of institution. The author indicated that educational reforms aimed at providing better quality in education worldwide and based on this, there must be reorganization in order to achieve the stated goal. Tovey (1994) described the quality of education as dealing with issues of relevance, validity, functionalism and efficiency of education system in the achievement of national goals and objectives.

Tovey (1994) examined the nature of quality in education and stated that quality is perceived as the level of achievement or performance and this is linked with the ability to function well in the school environment and to meet the need of the entrepreneur. Oderinde (2004) enumerated two aspects of quality in education, which are both internal and external. The internal aspect is the implementations of the school objectives while the external aspect deals with the implementation of national objectives, which are pre-requisites to the achievement of quality in any educational institution. A systematic and consistent quality assurance system helps to establish an institution's good reputation and image. It includes defined standards of achievement, documented procedures for all identified process, established ways of responding to issues and clear accountability for outcomes. The result is greater public confidence, more satisfied students, efficient processes and staff who are confident in their jobs. Students are more likely to experience better quality instructions, learning materials and interactions with the institution and its staff, leading to enhanced learning outcomes.

The quality of technical college graduates from the various trade areas, according to Uvah (2005) could be measured by how well they have been prepared for life and for service to society in various spheres of human endeavour. It could also mean how useful they are to solving practical problems in industries or the society at large. Quality may also be considered on the basis of how good and efficient the teachers are; how adequate and accessible the facilities and materials needed for effective teaching and learning are; and how prepared the graduates are for meeting the challenges of life and for solving the societal problems. Thus, quality assurance is the guarantee of confidence and certainty by a programme of study given by an institution that standards and quality are being maintained and enhance (Ethel, 2013).

In essence, Quality assurance in technical trade subjects in technical college is a mechanism or system put in place to ensure proper achievement of the goals of technical college education as stimulated by the National Policy on Education in 2013. By this conceptual understanding, it can be said that the emphasis on quality assurance is the training of personnel to enhance their performance in work places. In the technical colleges, the role of ensuring quality assurance in all components or trade subject areas is not a one man business but is bestowed on several stakeholders such as : National Board for Technical Education (NBTE), State Science and

Technical Schools Boards (SSTSB), National Business and Technical Examinations Board (NABTEB), production and service industries, among others.

Scope of Quality Assurance

Middlehurst (2001) describe the scope of quality assurance as including the following dimensions:

- i. Regulation (legal frameworks, governance, responsibilities and accountabilities).
- ii. Educational process (admissions, registration or enrolment, curriculum design and delivery, support for leaving and assessment).
- iii. Curriculum design and content (validation and approval frameworks, levels and standards etc).
- iv. Learning experience (consumer protection, students' experience, complaints and appeals).
- v. Outcomes (qualifications, certificates, transcripts, security, transferability, recognition/ currency and value).

In summary, Middlehurst sees quality as a grade of achievement, a standard against which to judge others. In the same vein, Abdulsalami (2002) says quality in higher education is multidimensional and embraces all functions and activities of a university including teaching, academic programmes, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community and the academic environment.

The Need for High quality assurance in Motor Vehicle Mechanics Trade

The high and increasing level of unemployment and poverty among graduates of Motor Vehicle Mechanics Work programme in Nigerian technical colleges calls for an urgent and pressing need to achieve high quality assurance in Motor Vehicle Mechanics trade. It is paramount to achieve high quality assurance in MVM programme so as to meet the national goals of TVET which according to the FRN (2013) are to :

- i. provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical level;
- ii. provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development ;

- iii. give training and impart the necessary skills to individuals who shall be self-reliant economically.

Achieving high quality assurance in MVM programme is also needed to enable MVM trainees completing technical college programmes to fulfil the national goals of :

- i. Securing employment either at the end of the whole course or after completing one or more modules of employable skills;
- ii. Set up their own business and become self-employed and be able to employ others;
- iii. Pursuing further education in advance craft/technical programme and in post-secondary (tertiary) technical institution such as Science and Technical colleges, polytechnics, college of technology, colleges of education, monotechnic and universities.

In essence, high quality assurance is needed in MVM programme to equip MVM trainees with the requisite technical skills and knowledge for survival in the world of work so as to become responsible citizens for a better Nigerian society.

Barriers towards Achieving High Quality in Motor Vehicle Mechanics Course in Technical colleges

1. Poor Societal Attitude Towards MVM programme

This is connected to the poor image of vocational and technical education as perceived by the Nigerian public. People still prefer to go about looking for white jobs as a result of low status associated with vocational education. Some other person sees MVM programme as a dirty occupational trade meant for the dull and less privileged individuals. Some parents want their children to be medical doctors, accountants, lawyers, administrators and politicians because of the negative attitude toward vocational education accounts for the decline and lack of interest by the students in the teaching of education in schools. The teacher then has an uphill task teaching people who are not interested in the subject that is being taught (Omo-Ojugo & Ohiole, 2008).

2. Insufficient and Poor State of Training Facilities

The connection between existing facilities the course curriculum and minimum standard is very important and a vital point to consider for quality assurance to be maintained, many institutions running vocational education programmes struggle to have sufficient facilities,

thus it is difficult for them to procure necessary equipments for the programme and this results to over utilization of the existing facilities it is important to note that no curriculum can be adequately covered without adequate facilities to work the curriculum out and no talk of standard can be achieved when the curriculum is not adequately covered (Gift & Fiokedu , 2014).

3. Insufficient Staff Quality and Quantity

The quality of lecturers/teachers employed in universities and other agencies responsible for the training of vocational education teachers is very crucial. It is obvious that the quality of a teacher in charge of training as one of the indicators of standards in teacher's education. The continuous shortage of vocational experts is a major factor affecting the development and quality of vocational education in Nigeria and other parts of the world (Adeoye, Oluwole & Oyewumi, 2014). As a result of inadequate qualified personnel most of the equipment and machines in some schools are easily abandoned because they lack competent hands to manipulate them. The need for technical manpower in the present stage of development is very important as one strive towards being a self reliant nation it is noted that no meaningful development can take place without a conscious effort to develop manpower in vocational areas. Quality cannot be guaranteed when the quality and quantity of personnel are inadequate to meet the desired expectation (Adeoye, et al, 2014)

4. Poor Attitude Towards Staff Capacity Building and Retraining of the Trainers

The socio economic and societal needs today are enormous and varied. New machines and tools are required daily to meet the complex industrial needs of modern times in the area of vocational education. Looking at today's situation the vocational skills being exhibited by teachers/lecturers may not meet the demands of tomorrow for technical progress. Moreover, current skills and bodies of knowledge create a need for retraining of teachers/lecturers. On the job training is very necessary for the success of today's vocational teacher and also a tool for ensuring quality assurance in vocational education (Olaitan, 2007).

5. Poor Remuneration of Vocational and Technical Teachers

The MVM teacher suffers the same problem of poor remuneration like other vocational and technical teachers in Nigerian technical colleges. This is a serious problem affecting quality in our educational system in most states in Nigeria and other parts of Africa. Salaries, allowance, and entitlements are sometimes paid in arrears or at times they are being denied.

This factor has led to brain drain in recent times as professors and some University dons proceed to other countries in hundreds to search for better conditions of service without replacement (Oni, 2007).

6. Poor Administration and Poor Supervision of Vocational Education Programme

Poor administration and supervision of vocational education programme can greatly affect the quality assurance in schools, lack of co-ordination between the various federal and state agencies responsible for the administration of vocational education program has resulted in costly duplication of efforts and inability to design appropriate curricular for the Nigerian youth. According to Puyate (2008), government, administrators, and proprietors do not take internal and external supervision seriously in the institutions.

7. Inadequate Funding of Trade Courses in Nigerian Technical Colleges

Inadequate funding is a very serious issue affecting vocational education programme. In spite of the efforts of the different governments of the federation to provide funds for higher education, and the huge amount of money expended, higher education still lacks fund to implement various programmes. Inadequate financial resources in the higher institutions have the effect of limiting the educational development policy of both state and local governments. Basic infrastructures are lacking in our universities, workshops are not provided for the program in some school. Even where they are available, they are either empty or stocked with obsolete items (Ethel, 2013).

Strategies for Achieving Quality Assurance in Motor Vehicle Mechanics Course in Technical Colleges

1. Special allowances should be paid to Motor Vehicle Mechanics teachers to boost their morale for high productivity.
2. There should be a monitoring team from the State and Federal Ministries of Education to check on-going technical college education programmes for flaws or breakdowns, provision of information to regulate activities and undertake corrective actions.
3. Technical college Motor Vehicle Mechanics teachers should be encouraged to attend in-service trainings such as sandwich and part-time training through government sponsorship in Nigeria.
4. A strategic implementation framework is also vital to the success of quality assurance efforts. The framework should begin with a quality policy statement for managing and encouraging participatory management technical college education especially in the various trade areas.

5. Technical college Motor Vehicle Mechanics teachers should be trained in Quality Assurance methods, problem solving technique, and communication techniques. This has been found to be effective in resolving problems such as low staff morale, low student performance, truancy and student failure. Other areas of success include more student involvement, decline in dropouts rate, growth in Parent- Teacher-Association (PTA) membership and greater faculty involvement in professional activities.
6. Departmental meetings of theof MVM teachers and automobile industrial stakeholders could be a useful strategy for problem solving and new programme initiatives in technical college education system.
7. An implementation committee on enhancing quality among technical college Motor Vehicle Mechanics in the various trade subject areas should be set up and this committee should always be made up of people who are experts in technical college education.
8. A built-in evaluation instrument should be constructed as an appendage of implementation committee document for the purpose of periodical evaluation of both the implementation processes and the success or failure of technical college education programme.
9. There should be regular inspection of technical college from the vocational and technical education section of the Ministries of Education (Federal and State) in Nigeria. This inspection should focus on technical college accountability process, maintenance of equipment, improving performance and quality of teaching and developing an annual report covering school performance, students' achievement and financial performance.
10. More Motor Vehicle Mechanics teachers should be trained and employed in Nigeria to be able to cope with the increase in the population of students.
11. Efforts should be geared towards the provision of technical equipment in the various trade subject areas necessary for enhancing technical college education programme in Nigeria by the various government, philanthropist, communities, private sectors and organizations.
12. Seminars, workshops and conferences should be organized regularly for Motor Vehicle Mechanics teachers in the various trade subject areas to acquaint them with the use of the modern equipment.

Conclusion

Based on the reviewed facts from literature evidence, the need for quality assurance in Motor Vehicle Mechanics Work as a trade subject in Nigerian technical college cannot be over ignored because the current status of the performance indicators of the programme still leave so much to be attended to in answering the numerous questions of quality assurance status of Motor Vehicle Mechanics Trade programmes in Nigerian technical colleges. Since Motor Vehicle Mechanics

Work education is paramount in national technological and economic development, all stakeholders and technical institutions should put up serious effort in ensuring high quality in Motor Vehicle Mechanics Work programme in technical colleges. Therefore, there is urgent need for government and the various stakeholders to intensify effort to acquaint themselves with the identified strategies for achieving quality assurance in Motor Vehicle Mechanics Trade in Nigerian Technical Colleges.

Recommendations

Based on the facts from the literature evidence reviewed, the following recommendations were made:

1. Practical method of teaching Motor Vehicle Mechanics Work should be emphasized so that the youths will acquire basic practical skills and knowledge for self-reliance and general development of the society. MVM teachers should endeavour to prepare adequately for their lessons by employing the use of real or concrete materials as instructional materials.
2. Experts in Motor Vehicle Mechanics Work should teach Motor Vehicle Mechanics Work course and headship of MVM department should be strictly restricted to Motor Vehicle Mechanics or automobile professionals.
3. The welfare of Motor Vehicle Mechanics Work teachers should be promptly attended to by stakeholders. For example, regular payment of salaries, allowances, promotions and remuneration. Government should increase funding and budgetary allocation to the TVET sector.
4. There should be provision for in-service training and retraining of teachers to equip them with new ideas, methods of the value and benefit of vocational education and what role it is expected to play in the nation's technological development.
5. Adequate and qualified Motor Vehicle Mechanics Work teachers should be regularly recruited and posted to technical colleges to avoid shortage of staff in the departments of vocational education.
6. The government should provide modern equipment, works shop machines, for effective implementation of Motor Vehicle Mechanics Work curriculum in technical colleges.

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