

Quality Assurance in Nigerian Technical and Vocational Education and Training Institutions: Strategies for Improvement

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Abstract

Technical and Vocational Education and Training (TVET) has become increasingly important in meeting the needs of the global workforce. The objective is to examine some activities that promote quality assurance in TVET institutions and recommend solutions to any challenges. A hundred and fifty questionnaires were administered only 50 responses were returned. Descriptive statistics was used to analyse the data collected. Results showed that the National Board for Technical Education curriculum is not reviewed regularly and the time span for the review varies from department to department. Also, local content is integrated into the NBTE curriculum. TVET institutions take accreditation seriously, all programmes for departments surveyed are accredited. 96% of the academic staff give feedback to students after continuous assessment and examination. Some equipment for students' practical are obsolete. TVET trainers do not attend conferences/workshops/seminars as regularly as expected due to lack of sponsorship. Most departments do not conduct industry needs assessment and about 90% are not in partnership with any industry for curriculum enhancement nor job placement. The study concludes, curriculum review should be done at least once in two academic sessions with more emphasis on local content. For quality assurance the accreditation pattern should be improved upon. Also, feedback mechanism must be improved. The obsolete equipment needs to be replaced through increased funding for TVET institutions. For continuous professional development, conspicuous allowance should be provided for TVET trainers for conferences/workshops/seminars. Invariably, collaborative curriculum development with the industries is a key to entrepreneurship, and relevance in the work environment.

Keywords: education, industry, methods, quality, training

1.0 Introduction

Technical and Vocational Education and Training (TVET) refers to educational programs and courses that focus on providing individuals with practical skills, knowledge, and competencies related to specific occupations or industries. It is a form of education and training that prepares students for employment, self-employment, and entrepreneurship in various vocational fields (United Nations Educational, Scientific and Cultural Organization. TVET programs are designed to equip individuals with the necessary skills to meet the demands of the labor market and contribute to economic development (United Nations Development Programme [UNDP], 2020). Unlike traditional academic education, which often focuses on theoretical knowledge, TVET emphasizes hands-on training, practical experience, and the development of specific technical skills (UNESCO, 2012).

TVET encompasses a wide range of occupational areas, including technical fields such as engineering, electronics, mechanics, construction, automotive, information technology, telecommunications, and renewable energy, as well as vocational fields such as hospitality and tourism, culinary arts, cosmetology, fashion design, graphic design, agriculture, health care, and business administration (World Bank, 2019, Okoroafor, 2019).

TVET institutions, including specialized vocational schools, training centers, community colleges, and polytechnics, collaborate with industries and employers to ensure that the curriculum is aligned with the skills and competencies required in the job market (UNDP, 2020). TVET fosters a smooth transition from education to sustainable employment opportunities.

TVET has a long history in Nigeria, dating back to the establishment of vocational schools and training centers in the colonial era. However, the formal recognition and institutionalization of TVET in Nigeria can be traced to the post-independence period. In 1977, the Federal government of Nigeria established the National Board for Technical Education (NBTE) by Act 9 of January 1977 as the principal regulatory body for technical and vocational education and training in the country (NBTE, 2023). The creation of the NBTE marked a significant milestone in the development and management of TVET in Nigeria.

Since its establishment, the NBTE has been responsible for setting standards, developing curricula, conducting accreditation of TVET programs, and promoting quality assurance in technical and vocational education across the country. The board works closely with TVET institutions, industries, and other stakeholders to ensure the relevance and effectiveness of TVET programs in meeting the needs of the labor market. It is important to note that while the formal establishment of the NBTE in 1977 played a crucial role in the institutionalization of TVET, the evolution and growth of TVET in Nigeria have been ongoing processes. Over the years, various policies, initiatives, and reforms have been introduced to enhance the quality, relevance, and accessibility of TVET in Nigeria. The establishment of the National Board for Technical Education in 1977 marked a significant milestone in the formal recognition and regulation of TVET in the country.

In addition to national efforts, international organizations and partners have played a role in supporting the development of TVET in Nigeria. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has provided support and technical assistance to improve TVET policies, curriculum development, and teacher training (UNESCO, 2019). International partners like the World Bank and donor agencies have also contributed funding and technical support to enhance the infrastructure and quality of TVET institutions (Okoroafor, 2019).

In recent times, Technical and Vocational Education and Training (TVET) has become increasingly important in meeting the needs of the global workforce. To ensure that TVET programmes meet the needs of the industry, quality assurance is critical. Quality assurance refers to the systematic processes and measures implemented to ensure and enhance the quality, effectiveness, and relevance of education and training programs offered by TVET institutions. It involves establishing and maintaining standards, guidelines, and procedures to monitor, evaluate, and improve various aspects of TVET, including curriculum, teaching and learning practices, assessment methods, faculty qualifications, infrastructure, and industry relevance. Effective quality assurance requires the involvement of all stakeholders, including students, instructors, industry partners, and policymakers. The objective is to examine some activities that promote quality assurance in TVET institutions and recommend solutions to any challenges. The focus is on curriculum development and review, accreditation and certification, assessment and evaluation, continuous professional development and industry partnerships in TVET institutions.

2.0 Literature Review

Quality assurance in curriculum development and review for TVET Institutions

Quality assurance in curriculum development and review is of paramount importance in Technical and Vocational Education and Training (TVET) institutions. Collaboration with industry representatives, employers, educators, and learners helps ensure that TVET curricula meet the needs and expectations of all stakeholders (Hinchliffe & Jolly, 2011; Singh, 2019). Incorporating industry-relevant skills, knowledge, and competencies into the curriculum ensures that graduates are prepared for the current and future workforce requirements (Osuala & Obidike, 2016).

Competency-based curricula focus on identifying specific skills and abilities required for occupations and structuring the curriculum around these competencies. This approach enhances the relevance and effectiveness of TVET programs (Osuala & Obidike, 2016). Regular monitoring, assessment, and feedback from stakeholders help identify areas for improvement, ensure curriculum relevance, and enhance the quality of TVET programs (Singh, 2019; Zainun & Samsudin, 2019). The need for clear quality standards and guidelines in TVET curriculum development and review cannot be over emphasized. Establishing benchmarks and guidelines assists in maintaining consistency, coherence, and quality across different TVET programs (Hinchliffe & Jolly, 2011).

Quality Assurance in Accreditation and Certification for TVET Institutions

Quality assurance in accreditation and certification is a vital aspect of ensuring the credibility and standards of Technical and Vocational Education and Training (TVET) institutions. Accreditation serves as a mechanism for quality assurance in TVET institutions. It involves a comprehensive evaluation of an institution's programs, facilities, faculty, and administrative processes against predetermined standards. Accreditation helps ensure that TVET institutions meet specific quality benchmarks (Custer, 2016; Voogt & Roblin, 2012). Involving industry representatives, employers, educators, and students ensures that accreditation standards and criteria align with the needs of the labor market and industry demands (Kis, 2017; Singh & Ramasamy, 2017).

Certification plays a significant role in quality assurance by verifying the competencies and skills of TVET graduates. Industry involvement in the certification process helps ensure certificate relevance and acceptance (Grollmann & Rauner, 2013; Mulder, 2017). Again, quality assurance in accreditation and certification necessitates a culture of continuous improvement. A lot of emphasis is on the importance of periodic reviews, self-assessment, and feedback mechanisms for TVET institutions. These processes facilitate ongoing quality enhancement and ensure that institutions stay abreast of changing industry needs (Grollmann & Rauner, 2013). In addition, comparing accreditation and certification processes with global standards and best practices helps improve the quality and recognition of TVET programs at an international level (Custer, 2016; Voogt & Roblin, 2012).

Quality Assurance in Assessment and Evaluation for TVET Institutions

Quality assurance in assessment and evaluation is crucial for ensuring the validity, reliability, and fairness of assessment practices in Technical and Vocational Education and Training (TVET) institutions. Valid assessments align with the learning outcomes and objectives of TVET programs, while reliable assessments provide consistent and accurate measurements of students' knowledge and skills (Popham, 2018; Suto, 2017). Assessments should focus on evaluating learners' mastery of specific skills and competencies, reflecting the industry demands and expectations (Mulder, 2016; Zlatkin-Troitschanskaia et al., 2019).

Formative and summative assessment are both important in quality assurance. Formative assessment, conducted during the learning process, provides feedback to learners and instructors for improvement. Summative assessment, conducted at the end of a program, evaluates learners' overall achievement (Boud & Falchikov, 2006; Boud & Molloy, 2013). Quality assurance requires standardized and moderated assessment practices. Establishing clear assessment criteria, rubrics, and standards to ensure consistency across different assessors and locations is important. Moderation processes help maintain fairness and reliability in assessment outcomes (Knight, 2002; Newton & Baird, 2016). Ultimately, feedback and continuous improvement play a vital role in quality assurance in assessment and evaluation. The significance of providing timely and constructive feedback to learners, enabling them to understand their strengths and areas for improvement is worth mentioning. Institutions should also engage in regular evaluation and review processes to enhance assessment practices (Fisher et al., 2016; Tynjälä, 2013).

Quality Assurance in Continuous Professional Development (CPD) for TVET Institutions

Continuous professional development (CPD) plays a vital role in enhancing the quality and effectiveness of teaching and learning in Technical and Vocational Education and Training (TVET) institutions. CPD for TVET educators is a means to enhance their knowledge, skills, and instructional practices. CPD contributes to the continuous improvement of teaching and learning, ensuring educators stay updated with industry trends and advancements (Kis, 2017; Mulder, 2016). Assessing the needs and aspirations of educators helps tailor CPD programs to address their specific areas of growth and expertise (Newton & Baird, 2016; Zlatkin-Troitschanskaia et al., 2019). Collaboration among educators and other stakeholders is crucial for quality assurance in CPD. Hawley-Weld et al., 2017; Voogt & Roblin, 2012 highlight the benefits of collaborative approaches to include communities of practice, peer learning, and mentoring programs, in fostering professional growth and knowledge sharing.

Quality assurance in CPD necessitates a focus on industry relevance and emerging technologies. Integration of industry representatives and experts in CPD activities helps ensure relevance and currency (Giasecke et al., 2014; McLean & Wilson, 2010). It is important for CPD programs to align with current industry needs, technological advancements, and changing job market dynamics. There must be ongoing evaluation and feedback mechanisms in quality assurance for CPD. Regular assessment and feedback from participants help measure the effectiveness of CPD programs, identify areas for improvement, and ensure alignment with educators' needs (Hawley-Weld et al., 2017; Voogt & Roblin, 2012).

Quality Assurance in Industry Partnerships for TVET Institutions

Industry partnerships play a vital role in enhancing the quality and relevance of Technical and Vocational Education and Training (TVET) institutions. Industry partnerships for TVET institutions are important in ensuring the alignment of curricula and programs with industry needs. Such partnerships foster collaboration between TVET institutions and industries, enabling the development of relevant and up-to-date programs (Mulder, 2016; Zainun & Samsudin, 2019). Collaborative curriculum development is a key aspect of quality assurance in industry partnerships. The importance of involving industry representatives in curriculum development processes, ensuring that programs incorporate industry-relevant skills and knowledge was discussed extensively by Mulder, 2016.

Through industry partnerships, TVET institutions can provide students with opportunities for practical learning experiences in real work environments. This enhances their skills and prepares them for the demands of the job market (Grollmann & Rauner, 2013;

Kis, 2017). Quality assurance in industry partnerships extends to assessment practices. This collaboration ensures that assessments align with industry standards and expectations, providing students with relevant and meaningful evaluations (Grollmann&Rauner, 2013; Kis, 2017). Invariably, regular communication and evaluation between TVET institutions and industry partners help identify areas for improvement, address emerging skills needs, and ensure ongoing relevance of TVET programs (Singh, 2019; Zainun & Samsudin, 2019).

3.0 Methods

Description of Study Area

A sample of lecturers, technologists, and instructors of a public TVET institution located in the North Central region of Nigeria were the participants in this research project. All the lecturers, technologists, and instructors under studied belonged to the School of Engineering Technology, School of Applied Sciences and Technology, School of Environmental Studies, and School of Management Studies.

Data Analysis

Descriptive statistics is used to analyse the data collected. Tables, pie charts and bar charts were used to present the results of the sample survey.

4.0 Results and Discussion

4.1 Curriculum Development and Review

Some respondents (38 %) attest to the fact that their curriculum was reviewed about two years ago, while some have not had theirs reviewed for over five years. On local content, almost all the respondents (40) confirmed their curriculum had local contents (See Figure 1)

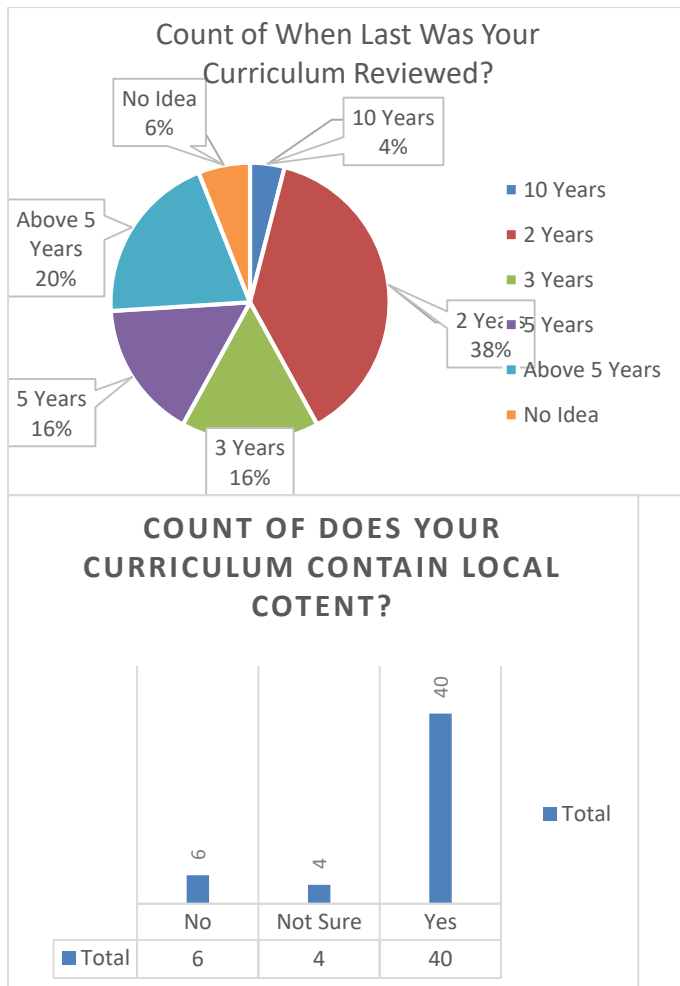


Figure 1: Results of curriculum reviewing and local content

4.2 Accreditation and Certification

92% of lecturers, technologists, and instructors from School of Engineering Technology, School of Applied Sciences and Technology, School of Environmental Studies and School of Management Studies confirmed all their causes are accredited. These programmes include Mechanical Engineering, Electrical Electronic Engineering, Computer Technology Engineering, Survey and Geoinformatics, Statistics, Biological Sciences, Applied Physics, Mathematics, Science Laboratory Technology, and Accountancy. The time of last accreditation visit for the programs varied between three to five years (see Figure 2).

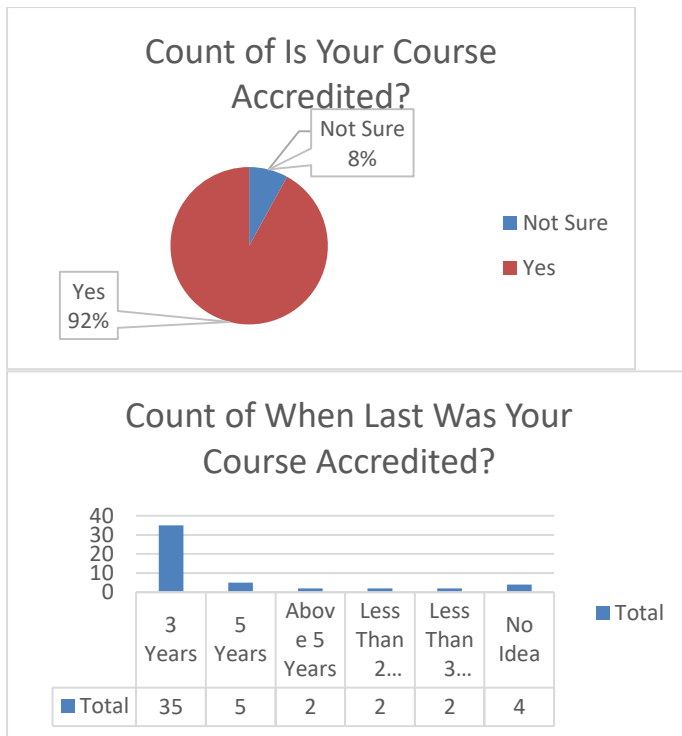


Figure 2: Results on accreditation

4.3 Assessment and Evaluation

96% of the academic staff give feedback to students after continuous assessment and examination. Some of the equipment for students' practical are modern ones while some are said to be obsolete (See Figure 3). Some respondents claim not to have all necessary equipment for the required practical. Most of the TVET trainers have had to conduct practical in batches because of limited space and equipment in the laboratories.

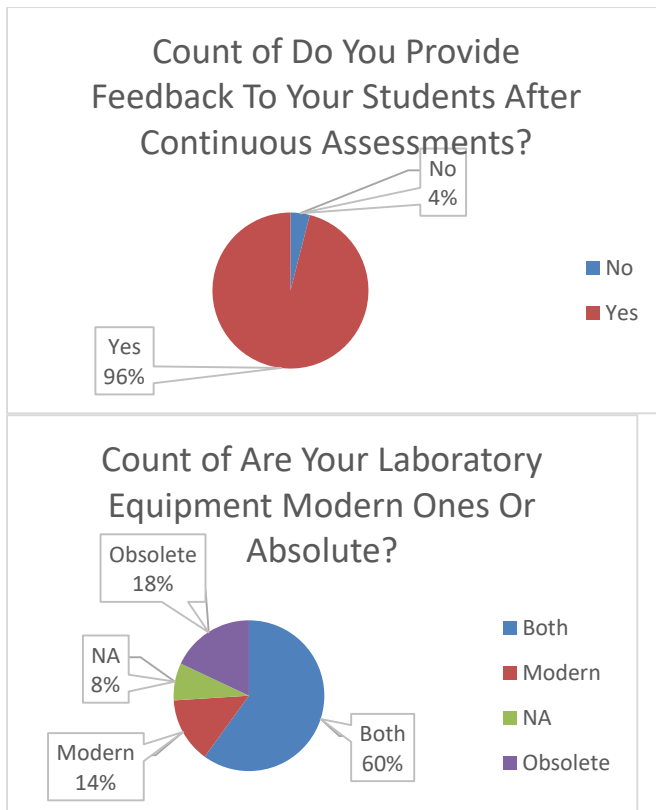


Figure 3: Results of feedback on assessment and state of equipment

4.4 Continuous Professional Development

All the TVET trainers attend conferences/workshops/seminars but 40% attend not in any particular order. Some attend once in a year, some once in two years and some will attend only when they are qualified for promotion. The major reason for the inconsistencies in conferences/workshops/seminars attendance by TVET trainers is lack of funding and scholarships. Most trainers sponsored themselves for conferences/workshops/seminars.

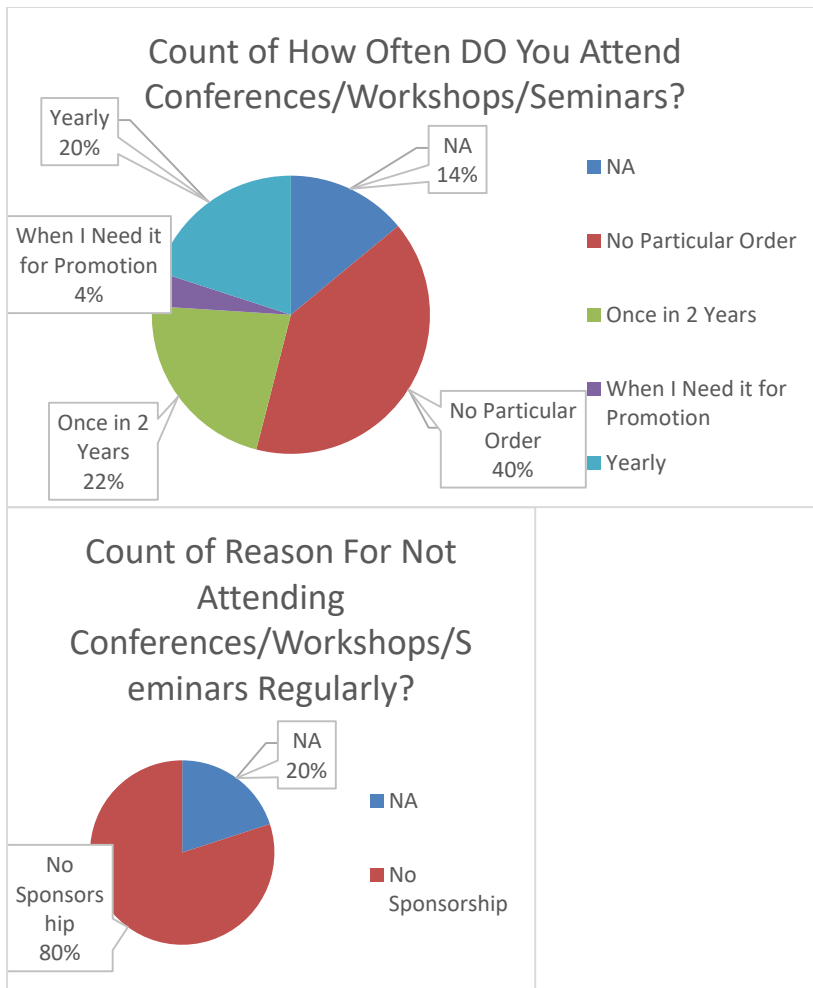


Figure 4: Results of conferences/workshops/seminars attendance

4.5 Industry Partnerships.

The survey results show most departments under studied do not conduct industry needs assessment. Most Departments (98%) are not in partnership with any industry for curriculum enhancement. Similarly, no department is in partnership with any industry for job placement (See Figure 5).

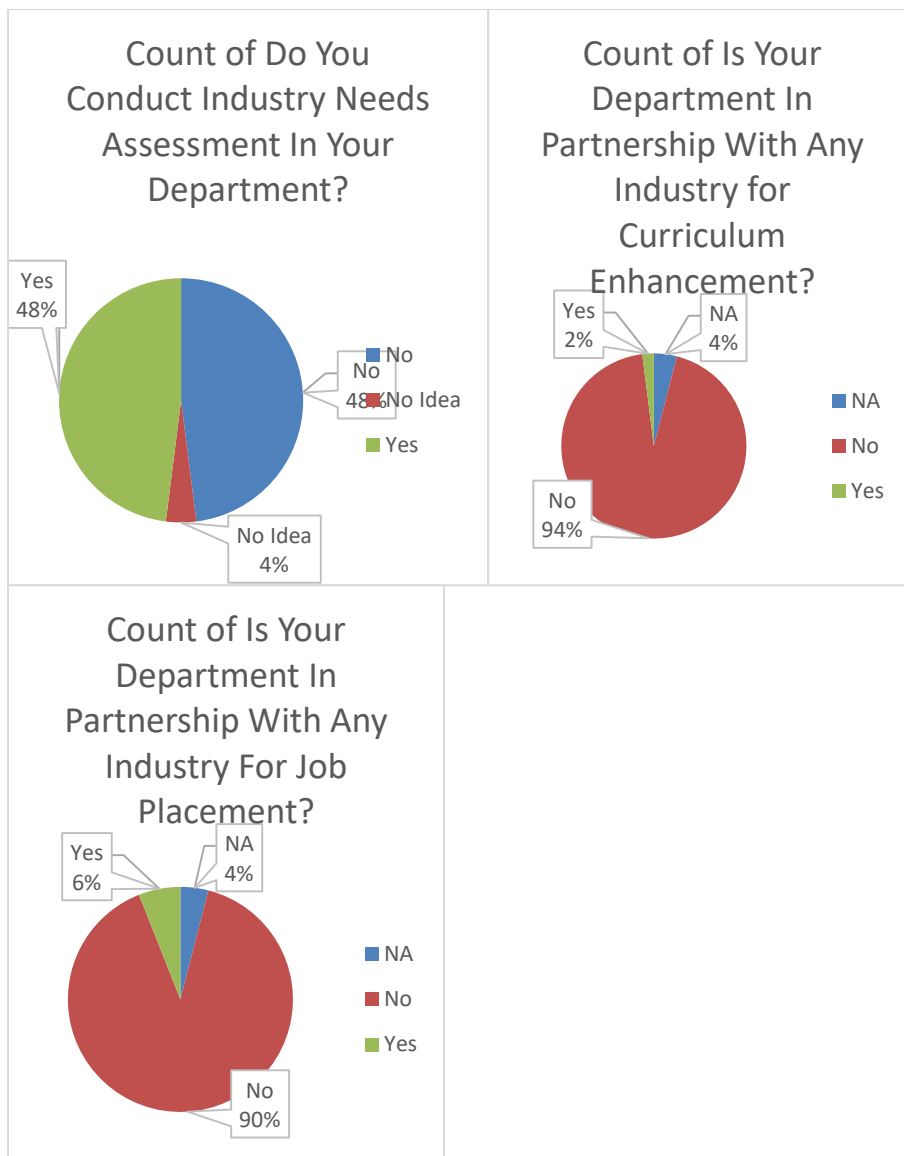


Figure 5: Results of industry partnerships

5.0 Conclusions and Recommendations

Due to the current trend in technology, curriculum review should be done at least once in two years that is, after two academic sessions. More attention should be given to local content taking cognizance of available local and natural resources. Research works should be targeted at available natural resources such that commercialization of research outputs can take place. Ultimately, research projects can give birth to mini-industries that will create jobs for TVET graduates while simultaneously meeting the local needs of the Nigerian economy. The result of this survey shows that TVET institutions take accreditation seriously. For quality assurance the accreditation pattern should be improved upon.

Although, TVET trainers give feedback to students after continuous assessment and examination, there is a need to improve on the feedback mechanism. The guidance and counselling sessions for students should be more formalised at departmental levels.

The equipment for students' practical needs should be modern. The obsolete equipment needs to be replaced. This shows a need for the Federal Government to increase

funding for TVET institutions. This will enable the students access all necessary equipment for the required practical. With this opportunity Nigerian TVET graduates will compete favourably with her counterparts across the globe.

TVET trainers do not attend conferences/workshops/seminars as regularly as expected. Some trainers do not attend conferences/workshops/seminars until evidence for attendance is required for a promotion. As such the quality of their output is not favourable to the TVET ecosystem. For continuous professional development, conspicuous allowance for conferences/workshops/seminars should be provided for TVET trainers.

Also, departments under studied do not conduct industry needs assessment and are not in partnership with any industry for curriculum enhancement nor job placement. Collaborative curriculum development with the industries is a key to employment, entrepreneurship, and relevance in the work environment.

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