

# AWARENESS OF TECHNICAL EDUCATION PROGRAMMES FOR MANPOWER DEVELOPMENT IN NIGERIA: CHALLENGES AND SOLUTIONS

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## Abstract

Despite various government efforts to promote technical education in Nigeria, the sector continues to face challenges that hinder its contribution to manpower development. This study investigated the awareness of technical education programmes for manpower development in Nigeria, focusing on its challenges and possible solutions. A descriptive research design was adopted, and data were collected through questionnaires on awareness, challenges, and strategies for improving technical education. The study population comprised 432 students from five government technical colleges in Lagos State: Epe, Ikorodu, Agidingbi, Ado-Soba, and Ikotun. Using a stratified random sampling technique, 109 students were selected as respondents. Data were analyzed using descriptive statistics such as mean, standard deviation, and percentage. Findings revealed a low level of awareness of technical education programmes ( $\bar{X} = 2.08$ ; S.D = .73); major challenges including policy inconsistency, lack of continuous teacher development, poorly equipped workshops and laboratories, shortage of modern machines and tools, obsolete syllabi, mismatch of curriculum and labour market needs, and lack of awareness; and found improved government advocacy, non-governmental support, and equal opportunities for vocational graduates as major strategies to improve technical education (75.3%; 68.8%; 66.1%). It concluded that low awareness and multiple challenges hinder technical education, limiting its crucial role in Nigeria's manpower development. The study therefore recommends stronger policies, better infrastructure, and enhanced public awareness.

**Key words:** Awareness, Technical Education Programmes, Manpower Development and Challenges, Solutions.

## Introduction

Education is the process of acquiring skills, values, knowledge, and habits through structured training or instruction that prepares individuals for careers and economic independence, promotes social and moral values, and fosters lifelong learning and adaptability. It can be classified into formal, informal, and non-formal education. Formal education, such as general education, vocational education, and technical education, occurs in schools, colleges, and universities, following a structured curriculum. Informal education involves learning through daily experiences, interactions, and self-study, while non-formal education includes vocational training, community education, and specialized skill development programs (Kominarets et al., 2022).

Vocational and Technical Education (VTE) refers to training that equips individuals with specific skills for various trades and careers, often emphasizing practical and hands-on learning (Olaoye et al., 2019). This type of education is typically pursued at the secondary and post-secondary levels, with learners generally ranging from age 14 to adulthood. It focuses on subsets such as home and hotel management, business education, agricultural education, and technical education, depending on the country and program structure. Specifically, technical education is a subset of vocational and technical education that concentrates on practical skills and industry-specific training. It aims to prepare individuals for careers and provide the skilled workforce required by industry (Grebski & Grebski, 2016).

Technical education involves the acquisition of skills primarily gained through training. It is a critical component of national development, as it equips individuals with the necessary vocational and practical skills required in industries, entrepreneurship, and national productivity (Odetola, 2023). It plays a vital role in the economic and industrial development of any nation. In Nigeria, technical education programs serve as essential tools for equipping individuals with practical and vocational skills necessary for the workforce (Omole & Omole, 2020). The demand for a skilled workforce has increased due to rapid technological advancements and the need for industrialization. Consequently, technical education programs have been established in various institutions such as technical colleges, Nigerian Certificate of Education (NCE) programs, polytechnics, and universities to equip individuals with specialized skills required across industries, thereby enhancing employability and workforce readiness (Onwenonye, 2023).

Despite these benefits, society at large has not fully recognized technical education programs as pillars of national growth and development. This may be due to misconceptions, lack of information, and limited public awareness of their importance. Lack of awareness refers to a situation where the general public has little or no knowledge about the existence, benefits, and career opportunities associated with technical education programs (Oviawe, 2017). Several factors, such as limited promotion and advocacy, social and cultural perceptions, lack of career guidance, and inadequate media coverage, contribute to this low level of awareness. Additionally, there is a general lack of appreciation for technical education programs, as many Nigerians still perceive them as inferior to conventional academic education (Olayele, 2021). This negative perception discourages enrollment, affects government investment in the sector, and compounds the existing challenges faced by technical education programs in Nigerian institutions.

Many institutions in Nigeria suffer from a shortage of qualified personnel, poor training facilities, and outdated curricula, which hinder effective learning and skill acquisition (Justin & Chukwu, 2025). This highlights the need to create awareness and orientate the populace on the importance of technical education programs for manpower development in Nigeria. Therefore, this study advocates for increased awareness of technical education programs for manpower development in Nigeria, investigates the challenges affecting their implementation, and proposes lasting solutions.

### **Statement of the problem**

Technical education is a form of education that focuses on equipping individuals with practical skills, technical knowledge, and applied competencies needed to function effectively in various trades, industries, and professions. It is centered on hand-on learning and direct application of scientific and technological principles to solve real-life problems. Technical education is a vital tool for manpower development because it prepares individuals to become skilled technicians, craftsmen, and technologists who can meet the demands of modern industries. By providing both theoretical understanding and practical expertise, it ensures that learners are not only knowledgeable but also capable of carrying out tasks with precision and efficiency.

Unfortunately, despite the importance of technical education, there are still shortages of manpower in many industries in the nation which might be due to limited awareness, appreciation of its value and neglecting it as inferior. However, the neglect of technical education might leads to unemployment, underemployment and lack of self-reliance among youth. This situation creates a mismatch between available skills and industrial demands, thereby slowing down technological advancement, hindering entrepreneurship, and increasing dependence on foreign expertise. Consequently, the nation might face economic stagnation, decline in technical education student enrollment, reduced productivity and inability to meet the growing needs of modern industries.

Given these challenges, there is an urgent need to examine the factors affecting the awareness of technical education programmes in Nigeria. This study therefore investigated the awareness of technical education programme for manpower development in Nigeria, so as to outline the major challenges and causes

hindering the effectiveness of technical education programmes, and explore potential strategies that could enhance sustainable manpower development through it.

### **Objectives of the Study**

The main purpose of this study is to assess the awareness of technical education program for manpower development in Nigeria: challenges and solutions. specifically, the study seeks to investigate:

1. To assess the level of awareness towards technical education program for manpower development among students in Nigeria.
2. To identify the challenges affecting the effectiveness of technical education program for manpower development in Nigeria.
3. To suggest strategies for improving technical education towards national development in Nigeria.

### **Research Questions:**

1. What is the level of awareness of technical education program for manpower development among students in Nigeria?
2. What are the major challenges hindering technical education program for manpower development in Nigeria?
3. What strategies that can enhance technical education program for sustainable manpower development in Nigeria?

### **Methodology**

This study adopted a descriptive research design using quantitative research approach to gather data on the awareness and challenges of technical education. The population of this study consisted of four hundred and thirty two (432) students from government technical college Epe, Ikorodu, Agidingbi, Ado-soba and Ikotun in Lagos state, Nigeria. A stratified random sampling technique was used to select 109 respondents from the five technical colleges. Primary data was collected through self-developed questionnaire. The questionnaire was divided into three sections, level of awareness towards technical education programme contained 4 items, challenges of technical education program for manpower development contained 7 items and strategies to enhance technical education programme contained 8 items. The instruments were validated by three experts from the Department of Industrial Technical Education, Tai Solarin University of Education, Nigeria. Cronbach Alpha reliability technique was used to determine the internal consistency of the instrument, and yielded a reliability coefficient of 0.85. The collected data was analyzed using descriptive statistics (mean, standard deviation and percentage). For decision-making on mean values, a 4-point scale was used, with values ranging from 4 to 1. A mean score of 2.50 and above was considered "agreed," while a mean score of 2.49 and below was considered "disagreed."

### **Results and Discussion**

**Research question 1:** What is the level of awareness of technical education program for manpower development among students in Nigeria?

**Table 1: Mean Rating on Level of Awareness towards Technical Education Programme in Nigeria**

S/N	Items	Response (%)				X	S.D
		SA	A	D	SD		
1	I was aware through peer’s discussion that technical education programmes assist in aligning workforce skills with industry needs before I offered it.	0.9	10.1	39.4	49.5	1.78	.62
2	My thoughts changed towards technical education programme being inferior to other academic pathways through government sensitization.	1.8	27.5	57.8	12.8	2.25	.69
3	I was assured that technical education programmes create skilled manpower for economic growth through career guidance before offering it.	7.3	0.9	47.7	44.0	1.93	.88
4	It was obvious through social media that technical education programmes equip learners to create jobs and not job seekers before I offered it.	2.8	68.8	28.4	-	2.37	.75
<b>Average Mean</b>						<b>2.08</b>	<b>.73</b>

Table 1 above presents the mean responses on the level of awareness of technical education programmes for manpower development among students in Nigeria. The table revealed that, through social media, it was evident that technical education programmes equip learners to create jobs rather than become job seekers, with a mean score of 2.37, which is the highest. This was followed by a mean score of 2.25, indicating that students’ perceptions of technical education as being inferior to other academic pathways changed through government sensitization. Another item showed that students were assured that technical education programmes help create skilled manpower for economic growth through career guidance before enrollment, with a mean score of 1.93. Lastly, a relatively low mean score of 1.75 showed that students became aware through peer discussions that technical education assists in aligning workforce skills with industry needs. The average mean score of 2.08 indicates a generally low level of awareness, while standard deviations ranging from 0.62 to 0.88 show variability in responses. Since the mean is below the threshold of 2.50, the study revealed that the level of awareness of technical education programmes for manpower development among students in Nigeria is low.

**Research question 2:** What are the major challenges hindering technical education program for manpower development in Nigeria?

**Table 2: Challenges of Technical Education Program for Manpower Development in Nigeria.**

S/N	Items	Response (%)				X	S.D	Remark
		SA	A	D	SD			
1	Poorly equipped workshops and laboratories	54.1	39.4	3.7	2.9	3.45	.70	Agree
2	Shortage of modern machines and tools	47.7	45.0	7.3	-	3.40	.63	Agree
3	The use of old syllabi that do not reflect current technology trends	50.5	40.4	8.3	0.9	3.40	.68	Agree
4	Mismatch between the curriculum and labour market demand.	47.7	43.1	7.3	1.8	3.37	.70	Agree
5	Lack of continuous professional development opportunities for technical educators	52.3	42.2	3.7	1.8	3.45	.70	Agree
6	Lack of continuity in government policies that affect the progress of technical education programme.	52.3	43.1	4.6	-	3.48	.59	Agree
7	Lack of advocacy and awareness of technical education programme capacity for job preparation.	40.4	53.2	6.4	-	3.34	.60	Agree

From Table 2, presents the mean responses on the major challenges of technical education programme for manpower development. This finding aligns with the identified challenges of technical education programmes for manpower development. The highest-rated statement was the lack of continuity in government policies affecting the progress of technical education, with a mean score of 3.48. This was followed by a lack of continuous professional development opportunities for technical educators and poorly equipped workshops and laboratories, both with a mean score of 3.45. The use of outdated syllabi that do not reflect current technological trends and the shortage of modern machines and tools recorded a mean score of 3.40. A mismatch between the curriculum and labour market demands had a mean score of 3.37, while the least mean score of 3.34 was also relatively high and above the threshold of 2.50. The standard deviations (ranging from 0.59 to 0.70) indicate variability in responses. The study therefore found that the major challenges of technical education for manpower development include policy inconsistency, lack of continuous teacher development, poorly equipped workshops and laboratories, shortage of modern machines and tools, obsolete syllabi, mismatch of curriculum and labour market needs, and lack of advocacy and awareness.

**Research question 3:** What strategies that can enhance technical education program for sustainable manpower development in Nigeria?

**Table 3: Ranking of Strategies to Enhance Technical Education Programme in Nigeria.**

S/N	Items	Frequency	Percent	Rank	Remark
1	Ensure vocational graduates have equal opportunities for further education and employment.	72	66.1	3.0	3 <sup>rd</sup>
2	There is a need for the government to advocate for technical education programme for the development of the nation.	82	75.3	1.0	1 <sup>ST</sup>
3	Give training centres more flexibility to design relevant programs in line with technical education.	66	60.6	6.0	6 <sup>th</sup>
4	There is a need to encourage non-governmental associations to support awareness of technical education programmes.	75	68.8	2.0	2 <sup>nd</sup>
5	There is a need for the government to allocate more budget to modern workshops, laboratories, and ICT facilities.	67	61.5	5.0	5 <sup>th</sup>
6	Integrate e-learning platforms, simulations, and virtual labs to supplement practical training.	25	22.9	7.0	7 <sup>th</sup>
7	Teaching should focus on practical, hands-on learning instead of purely theoretical approaches.	68	62.4	4.0	4 <sup>th</sup>
8	There is a need to encourage industries and private investors to support training centers with equipment and facilities.	20	18.3	8.0	8 <sup>th</sup>

Table 3 presents the ranking of strategies to enhance technical education. The table reveals that the highest proportion of respondents (75.3%) identified the need for the government to advocate for technical education programmes for national development, ranked 1st. This was followed by 68.8%, who emphasized the encouragement of non-governmental associations to support awareness of technical education programmes, ranked 2nd. Ensuring vocational graduates have equal opportunities for further education and employment ranked 3rd with 66.1%. In addition, 62.4% agreed that teaching should focus on practical, hands-on learning rather than purely theoretical approaches, ranking 4th. Similarly, 61.5% cited the need for the government to allocate more funding to modern workshops, laboratories, and ICT facilities, ranked 5th, while 60.6% supported granting training centers greater flexibility to design relevant programmes, ranked 6th. The least-rated strategies were the integration of e-learning platforms, simulations, and virtual labs (22.9%), ranked 7th, and the encouragement of industries and private investors to support training centers with equipment and facilities (18.3%), ranked 8th. This means that the major strategies to enhance technical education manpower include government advocacy for technical education programmes for national development, encouragement of non-governmental associations to promote awareness of technical education programmes, and ensuring that vocational graduates have equal opportunities for further education and employment.

### Discussion of Findings

The findings showed that the level of awareness of technical education programmes for manpower development among students in Nigeria is low. This implies that many people have limited knowledge or

understanding of technical education, highlighting the need for improved promotion, awareness campaigns, and access to relevant information and opportunities. Similar to the study by Oviawe (2017), it was revealed that Nigeria has the lowest ratio of technical college students, enrolment in technical colleges in Nigeria accounts for only about one percent (1%), compared to 40% in Italy, 37% in the United Kingdom, and 29% in Egypt. The implication of this trend is a significant shortage in the production of technicians and craftsmen in the country. This shortage has adverse effects on Nigeria's manpower development and its broader goals of national growth and advancement. It is against this background that this paper advocates for increased enrolment in technical education programmes in Nigeria. Ashcroft et al. (2022) asserted that the challenge is not the lack of student interest in advanced technological education programmes; rather, it is that students are often unaware of the existence of such programmes.

The study found that the major challenges of technical education programmes include poorly equipped workshops, the use of outdated syllabi that do not reflect current technological trends, a mismatch between the curriculum and labour market demands, a lack of continuous professional development opportunities for technical educators, inconsistent government policies affecting programme progress, and inadequate advocacy and awareness of the potential of technical education for job preparation. This means that technical education in Nigeria faces numerous problems, such as obsolete equipment and curricula, insufficient teacher training, unstable government policies, weak alignment with employment needs, and low public awareness of its career benefits.

This finding aligns with the study by Okoye and Arimonu (2016), which found that most technical education departments in Nigerian universities lack laboratories or workshop space and where such facilities exist, they are grossly inadequate. Similarly, in line with Eze (2013), who revealed that technical and vocational education cannot contribute significantly to reducing abject poverty, hunger, and unemployment because it is hindered by numerous challenges, the study by Okoye and Arimonu (2016) also showed that education in general, including technical and vocational education programmes, has been grossly neglected in Nigeria. Technical educators face the major challenge of convincing lawmakers of the need to give priority attention to the programme in resource allocation. Furthermore, similar to the study by Oviawe (2015), low self-esteem, negative peer pressure, and apathy toward technical education are major factors that cause students to drop out of school, engage in criminal activities, or become teen parents. In addition, the lack of exposure of students to the world of work through work visits poses a serious challenge. Public secondary schools and technical colleges in Nigeria do not give adequate attention to work visits at the junior secondary education level. This neglect hinders the realization of the objectives of prevocational education, which aim to enhance students' interest in technical education and increase enrolment in technical colleges (Oviawe, 2015).

The study also revealed that the major strategies to enhance technical education programmes include government advocacy for technical education as a tool for national development, encouragement of non-governmental associations to support awareness of technical education programmes, and ensuring that vocational graduates have equal opportunities for further education and employment. In addition, teaching should focus on practical, hands-on learning rather than purely theoretical approaches. This implies that improving technical education requires strong government promotion, in line with the opinion of Ojimba (2013), who asserted that the National Board for Technical Education (NBTE) and teachers in this field should lead campaigns for increased funding for vocational education and work to improve its image in society, as seen in many other nations. Similarly, the study by Ashcroft et al. (2022) emphasized that the advanced technological community should develop outreach and dissemination programmes to raise awareness among community college students about certificate and associate degree opportunities leading to employment. This can be achieved through effective social media engagement, administrative collaboration, faculty development, and strong industry partnerships aligned with workforce needs.

The study also revealed that strategies such as support from non-governmental organizations and equal opportunities for vocational graduates in further studies and employment are vital for improving technical

Awareness of technical education programmes for manpower development in Nigeria: challenges and solutions education outcomes. Similarly, Schinske et al. (2015) found that community college technical workforce programmes can provide students with direct examples and role models of professionals from diverse backgrounds working in the field. This exposure strengthens students' scientific identity and helps to reshape stereotypes about who works in science among community college students. In line to the study by Ashcroft et al. (2022) highlighted the importance of developing sustainable models, such as biotechnology, to build a foundation of advanced technological education degrees that can increase employment and degree opportunities. Furthermore, the findings of the present study also indicate that a stronger emphasis on practical, hands-on training rather than theoretical classroom teaching can enhance technical education programmes for sustainable manpower development in Nigeria. In contrast to the study by Oviawe et al. (2015), which revealed that the instructional methods used in teaching vocational and technical subjects are dominated by "showing," "telling," and "observing," with few instances of "doing" and "practice," this study underscores the need to adopt the recommended "learning by doing" and "guided discovery" instructional strategies.

## Conclusions

The study concludes that the level of awareness towards technical education programmes for manpower development among students in Nigeria is generally low. This low awareness reflects limited understanding and interest in technical education as a pathway for national growth. The findings further show that several challenges hinder the progress of technical education in the country. These include lack of continuity in government policies, inadequate professional development for technical educators, outdated syllabi that fail to reflect modern technological trends, poorly equipped workshops and laboratories, shortage of modern machines and tools, and a mismatch between the curriculum and labour market demands. The study also revealed that efforts aimed at improving technical education are gaining recognition, with increased attention from both government and non-governmental bodies. These findings collectively underscore the urgent need for revitalizing technical education as a key driver of manpower development and national advancement in Nigeria.

## Recommendations

Based on the findings of the study, the following recommendations are presented to guide government, policymakers, and technical institutions in addressing these issues.

1. The government should ensure consistency and continuity in policies guiding technical and vocational education to sustain progress and prevent disruptions in programme implementation.
2. Technical institutions should be adequately funded and equipped with modern tools, machines, and well-furnished laboratories and workshops to enhance practical learning and skill acquisition.
3. Government agencies and technical institutions should regularly review and update curricula to align with current technological trends and the demands of the labour market.
4. Continuous professional development programmes should be organized for technical educators to keep them updated with modern instructional methods and industry practices.
5. Both government and technical institutions should intensify campaigns to promote the importance of technical education as a viable career path and a foundation for national development.

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