# Assessment of the Role of Artificial Intelligence in Repositioning TVET for Economic Development in Nigeria

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## ABSTRACT

TVET is vital for economic development, but the rapid advancement of AI has necessitated a shift in it roles. As the global economy relies on AI, TVET programmes must adapt to this change in order to meet its mandate. However, there is scarcity of empirical studies on the role of AI integration for repositioning TVET for economic development. Therefore, this paper focused on the assessment of the role of Artificial Intelligence in the repositioning of Technical and Vocational Education Training (TVET) for economic development in Nigeria. To achieve the broad aim, this study examines the current state of TVET in Nigeria, identifies existing challenges, and highlights the transformative potential of integrating AI into TVET. The population of the study was 2350 VOTED students of five selected universities in Southwest, Nigeria. The sample consisted of 500 VOTED students selected from the five universities using disproportionate simple random technique. A validated 15-item questionnaire, designed by the researcher on a point scale ranging from strongly agree (4) – strongly disagree (1), was used for data collection. Reliability of the instrument was ensured using the split-half reliability technique, which yielded a cumulative coefficient of 0.79. Data collected were analysed using mean and standard deviation to answer the research questions, while a t-test was used to test the hypotheses at a 0.05 level of significance. The findings revealed that there is a need to integrate AI into the current state of TVET; the major challenges and barriers that hinder AI integration in TVET are the unavailability of uniform content to serve the AI application and that introduction of AI into the curriculum of TVET will contribute to the advancement of Nigerian economic development. There is therefore an urgent need for investment in AI infrastructure for access to AI tools and technologies; raining in AI skills acquisition, and updating TVET programmes are crucial for the repositioning of TVET for economic development in Nigeria.

**Keywords:** Technical and Vocational Education Training, Artificial Intelligence, Economic Development, Skill Acquisition.

## INTRODUCTION

The rapid advancement of technology, particularly in the realm of Artificial Intelligence (AI), has created a pressing need for educational systems worldwide to adapt and evolve. In Nigeria, Technical and Vocational Education and Training (TVET) serves as a critical component for fostering economic development by equipping individuals with the necessary skills to thrive in various industries. TVET has long been recognised as a vital tool for enhancing productivity, reducing poverty, and promoting sustainable economic growth (Pavlova, 2014). As economies become increasingly reliant on technology, the integration of AI into TVET curricula is essential to prepare a workforce capable of meeting the demands of a rapidly changing job market. The significance of TVET in economic development is underscored by its ability to provide practical skills that align with industry needs. Countries that have invested in robust TVET systems often experience higher levels of employment and economic stability (MvuhZouliatou, 2017). However, the current state of TVET in Nigeria faces numerous challenges, including inadequate infrastructure, limited access to modern technologies, and a

lack of alignment between educational outcomes and labour market requirements (Disciplines, 2023). These challenges hinder the effectiveness of TVET in preparing students for the realities of the workforce.

Moreover, the advent of AI presents both opportunities and challenges for TVET. By incorporating AI into vocational training, educational institutions can enhance learning experiences, provide personalised training, and better equip students with the skills needed in an AI-driven economy (Pavlova, 2014). This repositioning of TVET towards AI not only addresses the skill gap in the workforce but also contributes to broader economic development goals. As Nigeria seeks to diversify its economy and improve its global competitiveness, embracing AI within TVET frameworks becomes imperative. AI-powered tools and platforms can create immersive learning experiences, simulate real-world scenarios, and provide personalised feedback to students (Disciplines, 2023). By leveraging AI, vocational education institutions can adapt to the unique learning styles and preferences of each individual, ensuring that students receive targeted support and guidance throughout their educational journey (MvuhZouliatou, 2017). This personalised approach not only enhances student engagement and motivation but also increases the likelihood of successful skill acquisition and application.

Artificial intelligence can automate administrative tasks, such as grading assignments and tracking student progress, allowing educators to dedicate more time to individualised instruction and mentoring (Disciplines, 2023). By analysing vast amounts of data, AI algorithms can generate valuable insights into student performance, enabling educators to make data-driven decisions and optimise curriculum design (MvuhZouliatou, 2017). This data-driven approach to vocational education ensures that the curricula remain relevant, responsive, and aligned with the evolving needs of the labour market. However, the integration of AI into vocational education is not without its challenges. Ensuring equity and accessibility to AI-powered tools and platforms is crucial to avoid exacerbating existing disparities in educational outcomes (Pavlova, 2014). Additionally, ethical considerations, such as data privacy, algorithmic bias, and transparency, must be carefully addressed to maintain the trust and confidence of students, educators, and stakeholders (Disciplines, 2023). By embracing the transformative potential of AI, vocational education institutions can cultivate a skilled workforce capable of driving innovation, fostering entrepreneurship, and contributing to sustainable economic growth. However, this transition requires a collaborative effort among policymakers, educators, industry stakeholders, and the broader community to ensure that the benefits of AI-enhanced vocational education are equitably distributed and responsibly implemented. Technical and Vocational Education and Training (TVET) in Nigeria is designed to equip individuals with practical skills and knowledge that meet the needs of various industries. Despite its crucial role in economic development, TVET in Nigeria is often underfunded and undervalued (Okolie et al., 2021). The Nigerian government has made several attempts to enhance TVET through policy frameworks and the establishment of technical colleges and vocational centres across the country (UNESCO, 2020).

However, the effectiveness of these efforts remains questionable due to several persistent challenges. The existing TVET programmes in Nigeria include various courses offered at technical colleges, polytechnics, and vocational training centres. These programmes cover fields such as engineering, agriculture, business, and information technology. Despite the diversity of programmes, there is a significant misalignment between the skills taught and the needs of the labour market (Ayonmike et al., 2015). Employers frequently report a gap between the competencies of TVET graduates and the practical skills required in industries, suggesting that curricula often lag behind technological advancements and industry standards. One of the most pressing issues facing TVET in Nigeria is the inadequacy of infrastructure and resources. Many TVET institutions suffer from outdated equipment, insufficient teaching materials, and poorly maintained facilities (Ekpenyong & Nwaboku, 2020). This lack of resources hinders the ability of these institutions to provide quality education and practical training, thus affecting the competency of graduates.

The rapid advancement of technology presents another challenge for TVET in Nigeria. Many institutions lack access to modern technologies, which are essential for training students in contemporary skills (Oviawe et al., 2017). This limitation not only affects the quality of education but also widens the gap between the skills of TVET graduates and the demands of the labour market. Societal perceptions of vocational education also pose a significant challenge. In Nigeria, vocational education is often seen as a last resort for those who cannot pursue academic education. This stigma affects enrollment rates and the overall attractiveness of TVET programmes (Nwogu & Nwanoruo, 2011). Changing these perceptions is crucial for increasing the appeal of

vocational education and ensuring a steady supply of skilled workers. Artificial Intelligence (AI) has the potential to revolutionise TVET by enhancing learning experiences and aligning education with labour market needs. AI can be used to develop adaptive learning platforms that provide personalised education, thereby improving student engagement and outcomes (Luckin *et al*., 2016). Moreover, AI-driven data analytics can help institutions to better understand labour market trends and adjust their curricula accordingly (OECD, 2021). However, the integration of AI into TVET faces several challenges, including the need for substantial investments in technology and training for educators. Additionally, there is a risk that the rapid pace of AI development could further widen the skills gap if TVET institutions are unable to keep up with technological advancements.

# LITERATURE REVIEW

## Artificial Intelligence, TVET and Economic Development

Artificial intelligence (AI) is playing a crucial role in the development of technical and vocational skills in TVET, which are essential for economic and industrial development (Okorieocha & Ugwunali, 2025; Windelband, 2023). These skills are needed for enterprise productivity, profitability, national productivity, and wealth creation (Oladiran, 2021). TVET has a role in driving AI adoption and combating inequality in workforce development (Ukala & Iheukwumere, 2025). AI is central to equipping workers to be digital citizens and providing training in skills to take on new technologies (Nwosu *et al*., 2024; Uzo, 2021). Artificial intelligence has become an essential part of workforce development and technology for industry and the business world at large. It can create new employment opportunities in areas such as engineering, science, technology, business, and education (OECD, 2019). Software engineers creating systems can enable automated systems, providing highly adaptive and personalised learning tools that help TVET students improve their understanding of the basics of a subject (Du & Wang, 2023). AI can also help TVET educators teach by providing a pedagogical approach that reinforces human intelligence and focuses on enhancement and development (UNESCO-UNEVOC, 2023; Okebukola, 2022).

The use of AI in industrial activities can enhance labour productivity, leading to more efficient workforce-related time management (International Labour Organisation, 2019). AI can also create a new effective workforce called intelligent automation that solves problems and engages in self-learning, benefiting various sectors and creating new revenue streams (Shuaibu, 2024). Expert systems can benefit nearly all technical and vocational education programs, as they stress problem-solving and can provide ready sources of information for students (Ndom-Uchendu & Nwokike, 2024). The application of AI in the TVET curriculum is just one issue, with recommendations emphasising problem-solving, information handling, and communication skills (Oladiran, 2021). By preparing human labour to interact effectively and efficiently with machines, we can maximise productivity gains from interrelated tasks, potentially leading to the development of new jobs or occupations resulting from cooperation and technological advancements (Du & Wang, 2023). Artificial intelligence (AI) has the potential to revolutionise the delivery and quality of technical and vocational education in Nigeria. By personalising learning, streamlining administrative processes, automating routine tasks, and providing data-driven insights, AI can bridge gaps in education and improve learning outcomes (Ukala & Iheukwumere, 2025). This aligns with global efforts to achieve Sustainable Development Goal 4 (SDG 4), which emphasises quality education for all (UNESCO-UNEVOC, 2023). AI tools, such as simulations and virtual reality (VR), enhance practical skill acquisition by providing safe, controlled environments for learners to practice complex tasks (Nwosu *et al*., 2024). AI applications in technical and vocational education include learner-centred and adaptive learning platforms, simulated training and virtual reality, automated assessments and feedback, AI-powered virtual tutors and chatbots, and predictive analytics for vocational and career guidance (Okorieocha & Ugwunali, 2025). These tools can help students identify skill gaps in the labour market and inform curriculum development to ensure alignment with industry needs.

By leveraging AI, Nigeria can enhance its technical and vocational education and contribute to the country's economic development (Adeyemi & Oluwole, 2021). Artificial intelligence (AI) is revolutionising technical and vocational education by providing tools for skill development, learner analytics, and hybrid learning solutions (Windelband, 2023). AI-based tools like 3D printers, CNC machines, and smart diagnostic systems are becoming integral to training students in industry-specific skills (Okebukola, 2022). AI also supports

learner analytics, preventing dropouts and facilitating remote vocational training through platforms like cloud-based AI systems (UNESCO-UNEVOC, 2023). Additionally, AI facilitates curriculum design and content creation, assisting educators in creating engaging learning materials by analysing industry trends and learner preferences (Du & Wang, 2023). AI technologies promote inclusivity by accommodating learners with disabilities, ensuring equal access to education for diverse populations (International Labour Organisation, 2019). However, the integration of AI in Nigeria faces challenges such as high implementation and maintenance costs, a lack of modern infrastructure and equipment, and a shortage of AI experts and qualified trainers (Ndom-Uchendu & Nwokike, 2024). Addressing these challenges will require significant investment in infrastructure, training programs, and policies and regulations to ensure ethical and responsible use of AI in vocational education (Nwosu et al., 2024).

**Empirical Review and Gaps in Literature**

Although there has been scholarly interest in the incorporation of Artificial Intelligence (AI) into Technical and Vocational Education and Training (TVET), the majority of the research that has been done so far has concentrated on institutional integration, teaching efficacy, and skill alignment, with little investigation into how AI contributes to wider economic development through TVET, especially in Nigeria. Ukala and Iheukwumere (2025), for example, investigated the incorporation of AI in Abia State's public TVET institutions, highlighting its function in closing the skills gap for the workforce of the future. Despite its value, this study is region-specific and primarily focuses on institutional preparedness and skill training, paying less attention to AI's ability to reposition the national economy. Similar to this, Zary and Zary (2025) offered empirical insights on the difficulties in using AI in TVET as well as its potential prospects. The current study on the difficulties in implementing AI in TVET is connected to this one. Nevertheless, Zarys' work's global viewpoint is irrelevant to Nigeria's economic development objectives and ignores the country's TVET revolution. Oladiran (2021) provided crucial insights into curriculum and pedagogy by examining the intersection of AI and TVET for workforce development. However, how such convergence results in quantifiable economic outcomes for Nigeria is not empirically evaluated in the study. Okorieocha and Ugwunali (2025) emphasised AI as a tool to improve TVET quality and sustainability. However, there is a gap in evaluating AI's strategic role in economic development through TVET because their work prioritises quality assurance above economic change. Research by Ndom-Uchendu and Nwokike (2024) and Nwosu *et al*. (2024) examined how AI affects particular fields like entrepreneurship and business education. Despite their insightfulness, these studies lack a comprehensive framework for repositioning TVET at the national economic level and are discipline-specific. Additionally, foreign works like Du and Wang (2023) and Westera *et al*. (2020) concentrate on AI literacy and game-based learning, which are novel but not contextually grounded in Nigeria's educational and socioeconomic framework. Uzo (2021) outlined strategies for AI integration in education at large but did not isolate TVET as a key driver of economic transformation. As a result, little research has been done on the strategic evaluation of AI as a repositioning tool for economic development through TVET. As a result, while the literature now in publication has improved our knowledge of AI in education and TVET skill development, it also identifies a substantial research vacuum in terms of empirically assessing how AI may reposition Nigeria's TVET system as a driver of the country's economic growth. By providing context-specific, data-driven insights into the strategic role of AI in repositioning and changing TVET for economic development in Nigeria, the current study aims to close this gap.

**Objectives of the Study**

The major purpose of this study was to assess the role of Artificial Intelligence in the repositioning of Technical and Vocational Education for economic development in Nigeria. Specifically, the study sought to determine:

1. The current state of AI integration in the Nigerian TVET programme.

2. The key challenges and barriers of incorporating AI into TVET programmes in Nigeria.

3. Whether the integration of AI in TVET can contribute to economic development in Nigeria.

**Research Questions**

1. What is the current state of AI integration in the Nigerian TVET programme?

2. What are the key challenges and barriers to incorporating AI into TVET in Nigeria?

3. Can AI integration in TVET contribute to economic development in Nigeria?

**Hypotheses**

There is no significant difference between the mean response of male and female students on the role of AI integration in TVET in contributing to economic development in Nigeria

## METHODOLOGY

This study employed a descriptive survey design. This design was considered appropriate because the researcher is interested in the collection of data from the respondents based on opinions, perceptions regarding the role of AI in repositioning TVET without manipulation of variables. The population of the study was 2350 VOTED students of five selected universities in Southwest, Nigeria. The universities are Tai Solarin University of Education, Adeyemi Federal University of Education, Emmanuel Alayande University of Education, Bamidele Olumilua University of Education, Science and Technology and Lagos State University of Education. The sample consisted of 500 VOTED students of these universities in Southwest, Nigeria which constitute 21% of the total population. The sample was selected using disproportionate simple random technique. This was done by selecting 100 VOTED students from each of the five universities to give adequate representation. A 15-item questionnaire, designed by the researcher, was used for data collection. The instrument was designed on a four-point scale: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1. The instrument was validated by experts in computer science from the University of Medical Science, Ondo and the Faculty of Vocational and Technical Education in Adeyemi Federal University of Education, Ondo, respectively, to ensure face and content validity and comments and suggestion the experts were incorporated to produce the final version administered for data collection. Reliability of the instrument was ensured using the split-half reliability technique, which yielded a cumulative coefficient of 0.79. Data collected was analysed using mean, standard deviation and t-test. The mean and standard deviation were used to answer the research questions, while a t-test was used to test the hypotheses at a 0.05 level of significance.

## RESULTS

**Research Question 1:** What is the current state of AI integration in Nigerian TVET programmes?

Table 1 Descriptive Statistics Showing the Current State of AI Integration in TVET

| S/N | AI integration | Mean | SD | Decision |
|---|---|---|---|---|
| 1. | AI concepts are currently included in the curriculum of the Nigerian TVET programme | 2.05 | 0.64 | Disagreed |
| 2. | Specific AI-related courses and modules are offered in Nigerian TVET institutions | 2.19 | 0.64 | Disagreed |
| 3. | Nigeria TVET institutions are equipped with the necessary infrastructure (e.g., software, hardware) to support AI education | 3.03 | 0.57 | Agreed |
| 4. | There is a sufficient number of AI Instructors to teach AI-related subjects in TVET | 2.08 | 0.69 | Disagreed |

| 5. | Students and educators are well aware of the importance of AI in TVET programmes | 2.61 | 0.71 | Agreed |
|---|---|---|---|---|
| | **Grand Mean** | **2.39** | | **Disagreed** |

Table 1 show that the respondents agreed on two items and disagreed on three items out of five statements on the current state of AI integration into TVE. The grand mean of 2.39, which is below the cut-off mean of 2.50, indicates that the respondents disagreed on the current state of AI integration into TVET programmes in Nigeria. This implies that currently, AI integration into TVET programmes for economic development is not encouraging.

**Research Question 2:** What are the key challenges and barriers to incorporating AI into TVET in Nigeria?

Table 2 Descriptive Statistics Showing Challenges and barriers of incorporating AI in TVET

| S/N | Challenges and barriers of AI | Mean | SD | Decision |
|---|---|---|---|---|
| 1 | Lack of skilled personnel affects the integration of AI in TVET programmes | 3.23 | 0.64 | Agreed |
| 2. | Nigerian institutions face financial constraints in the adoption of AI Technologies in TVET | 3.28 | 0.57 | Agreed |
| 3. | Cultural or societal attitudes impede the adoption of AI in Nigerian education | 3.34 | 0.79 | Agreed |
| 4. | Government policies and regulations impact the incorporation of AI in TVET | 3.40 | 0.07 | Agreed |
| 5. | Technical challenges (e.g., access to electricity, internet connectivity) hinder AI integration in TVET | 3.35 | 0.66 | Agreed |
| | **Grand Mean** | **3.32** | | **Agreed** |

Data in Table 2 revealed that all five items on the challenges of AI integration in TVET had their mean rating between 3.23 - 3.40, with a grand mean of 3.32 above the cut-off point of 2.50. This result shows that the respondents agreed on the five identified challenges on AI integration into TVET programmes in Nigeria for economic development. Challenges such as lack of skilled personnel, financial constraints, Cultural or societal attitudes, Government policies and regulations and technical challenges such as access to electricity and internet connectivity hinder AI integration into TVET programmes.

**Research Question 3:** How can the integration of AI in TVET contribute to economic development in Nigeria?

Table 3 Descriptive Statistics Showing how AI Integration in TVET can Contribute to Economic Development

| S/N | AI in TVET | Mean | SD | Decision |
|---|---|---|---|---|
| 1. | AI integration in TVET programmes will improve the employability of graduates | 2.89 | 4.82 | Agreed |
| 2. | AI-driven skills acquired in TVET will boost productivity in key Nigerian industries | 3.45 | 0.54 | Agreed |

| | | | | |
|---|---|---|---|---|
| 3. | AI in TVET play a crucial role in fostering innovation and entrepreneurship among students | 3.15 | 0.61 | Agreed |
| 4. | Adoption of AI in TVET will bridge the skills gap in the workforce | 3.24 | 0.32 | Agreed |
| 5. | Integration of AI in TVET has the potential to impact overall economic growth | 2.93 | 0.80 | Agreed |
| | **Grand Mean** | **3.13** | | **Agreed** |

Data in Table 3 revealed that all five items on AI integration in TVET can contribute to economic development, had their mean rating between 3.89 – 3.4, with a grand mean of 3.13, which is all greater than the cut-off mean of 2.50. This result showed that the respondents agreed that AI integration into the curriculum of TVET will contribute to the advancement and development of Nigeria's economy.

**Test of Hypothesis**

There is no significant difference between the mean response of male and female students on the role of AI integration in TVET in contributing to economic development in Nigeria

Table 4 T-test analysis showing the difference in the opinion of male and female respondents on the role of AI integration into the TVET programme

| Variables | N | Mean | SD | df | t-Cal | Sig. (2-tailed) | Remark |
|---|---|---|---|---|---|---|---|
| Male | 224 | 53.6 | 7.40 | | | | Not significant |
| Female | 276 | 54.2 | 7.50 | 498 | 0.47 | 0.68 | |

The result of Table 4 revealed a t-value of 0.47 and a significance value of 0.68. Since the computed significance of 0.68 is greater than the alpha significance of 0.05 at which it is being tested. Therefore, the null hypothesis, which states that there is no significant difference between the mean response of male and female students on the role of AI integration into TVET curriculum in contributing to economic development in Nigeria, is hereby accepted. This means that both male and female respondents hold the same opinion that AI integration into the TVET curriculum will contribute to economic development in Nigeria.

# DISCUSSION OF FINDINGS

The findings of research question one showed that currently, AI has not been fully integrated into the TVET programme in Nigeria. This result may not be unconnected to concern of stakeholders that the use of AI in education may limit students' ability to develop critical thinking and independent problem-solving skills and the non readiness of government through relevant agencies to formulate policies and provide resources necessary for AI integration in education especially in TVET (Akgun & Greenhow, 2022). This finding is consistent with the report of Eno et al. (2024) that despite the global acceptance and use of generative AI, its full potential integration, particularly in teaching and learning, has not been fully realised. Also, it is in line with the expression of Shuaibu (2024) that the poor integration of AI in vocational education is a result of various hurdles such as inadequate infrastructure, shortages of qualified trainers and AI experts, and ethical considerations regarding data privacy and bias mitigation.

The study found in research question two that AI integration in TVET is confronted with challenges such as lack of skilled personnel, financial constraints, Cultural or societal attitudes, Government policies and regulations and technical challenges such as access to electricity and internet connectivity hinder AI integration into TVET programmes. This may be attributed to poor funding of the education sector by the Nigerian government, which affects a lot of things, including technology integration in TVET. This result aligns with the report of Zhang et al (2019) that, apart from opportunities of AI integration, there are

significant challenges to address, which include issues of equity, privacy, and the ethical use of AI. This finding is in tandem with the report of Shuaibu (2024) that the integration of AI in TVET is a result of various challenges such as inadequate infrastructure, shortages of qualified trainers and AI experts, and ethical considerations regarding data privacy and bias mitigation. The finding is similar to the report of Suharsono, D. (2023) that the main challenges faced by vocational education in adopting AI include data security, unequal access to technology, and uncertainty regarding the roles of humans and machines.

Findings of research question three revealed that AI integration into the curriculum of TVET will contribute to the advancement and development of Nigeria's economy. This finding may be attributed to the fact that the integration of AI technologies in TVET education will help reorganise and restructure the TVET education and training system, aimed at fostering economic growth by generating new skills and creating avenues for revenue generation in the economy. This result is consistent with the report of Olojuolawe (2024) that the adoption of artificial intelligence would positively influence the growth of technical education and the marketability of its graduates in the labour market, thereby advancing the economy. The finding also aligns with the report of Amdan et al. (2024), who stress that by adopting AI-assisted education, the TVET sector can initiate a profound transformation aimed at enhancing educational achievements, promoting innovation, and equipping the workforce with the necessary skills for the modern economy. Similarly, Eno et al. (2024) proposes that Also, integration of generative AI pedagogical strategies in the curriculum will create avenue for comprehensive training programs for TVET educators, develop repository interactive platforms including online courses and tutorials tailored to building digital literacy in TVET and promote students' employability, entrepreneurship, and socioeconomic advancement in the digital era.

The study revealed from the aspect of hypothesis that there is no significant difference between the mean response of male and female students on the role of AI integration into TVET curriculum in contributing to economic development in Nigeria is hereby accepted. This result may be connected to the fact that everyone (male and female) is becoming aware and embracing the potential advantages of AI in education and all aspects of the economy. This result is consistent with the report of Ukeh and Anih (2024) that there was no statistically significant distinction found in mean ratings of male and female lecturers regarding the utilisation of artificial intelligence-based tools for teaching and research. The finding also aligns with the report of Audu et al. (2023) that there is no significant difference between the mean scores of male and female students on the extent of artificial intelligence supporting students' academic performance in public universities in North-Central, Nigeria is accepted.

## CONCLUSION

The study concluded from the findings that AI is currently not well-integrated into Nigerian TVET programmes and this is due to various challenges which include absence of AI-related courses, inadequate infrastructure, and a shortage of qualified instructors which significantly hinder the effectiveness of these programmes in preparing students for the demands of a technologically advanced labour market. It was also concluded that despite these challenges, there is a positive belief regarding the potential of AI integration in TVET in shaping the Nigerian economy. If properly implemented with good policies, AI could substantially enhance graduates' employability, boost industrial productivity, stimulate innovation and entrepreneurship, bridge the workforce skills gap, and contribute to overall economic growth in Nigeria.

## RECOMMENDATIONS

The following recommendations emerged from the findings of the study:

1. There is an urgent need for substantial investment in AI-related infrastructure within TVET institutions. This includes modernising facilities, providing access to AI tools and technologies, and ensuring that students have hands-on experience with the latest advancements.

2. TVET programmes should be updated to include AI-related courses and concepts. This will require a comprehensive review of current curricula and the development of new, relevant content that aligns with global standards and the needs of the modern workforce.

3. To address the shortage of qualified instructors, there should be focused efforts on training and upskilling educators in AI and related technologies. This could involve specialised training programmes, partnerships with industry experts, and continuous professional development initiatives.

4. Government and private sector collaboration is essential to overcome the financial and technical barriers hindering AI integration in TVET. This could include securing funding, providing incentives for private sector investment, and establishing public-private partnerships to share resources and expertise.

5. Efforts should be made to increase awareness of the importance of AI in TVET among stakeholders, including policymakers, educators, and students. This could involve advocacy campaigns, workshops, and seminars that highlight the benefits of AI integration for economic development.

6. The government should develop and implement policies that support the integration of AI in TVET. This includes creating a conducive regulatory environment, offering incentives for AI adoption, and ensuring that policies are aligned with the goals of enhancing employability and economic growth.

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