



Building a Skilled and Inclusive Society for Mitigating Unemployment in Rivers State, Nigeria: The Role of Industrial Technology Education

Dr. Reagan N. ROBINSON

Department of Technical Education, Ignatius
Ajuru University of Education,
Port Harcourt, Nigeria.

Dr. OFFIA Tugwell Owo

Department of Technical Education, Ignatius
Ajuru University of Education,
Port Harcourt, Nigeria.
offia.owo@iaue.edu.ng

Abstract

This study investigated the role of Industrial Technology Education (ITE) in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. Specifically, the study examined the extent to which ITE promotes technical skill acquisition for graduate employability, enhances inclusivity in skills development and employment opportunities, and identified the challenges affecting its effectiveness in mitigating unemployment. The study adopted a descriptive survey research design. The population comprised 158 respondents, consisting of 67 Industrial Technology Education lecturers and 91 final-year students from Rivers State University and Ignatius Ajuru University of Education, Port Harcourt. A sample of 113 respondents was selected using a proportionate stratified random sampling technique. Data were collected using a researcher-developed instrument titled "Industrial Technology Education and Employment Enhancement Questionnaire (ITEEEQ)", structured on a 4-point Likert rating scale. The instrument was validated by experts in Industrial Technology Education and Measurement and Evaluation, while a Cronbach's Alpha reliability coefficient of 0.87 established its internal consistency. Data were analysed using mean ($\bar{x}$) and standard deviation. The findings revealed that Industrial Technology Education significantly promotes technical skill acquisition for graduate employability (Grand Mean = 3.52), enhances inclusivity in skills development and employment opportunities (Grand Mean = 3.23), and that inadequate funding, obsolete workshop facilities, weak university-industry collaboration, inadequate curriculum review, and negative societal perceptions constitute major constraints to its effectiveness in mitigating unemployment (Grand Mean = 3.52). The study concluded that strengthening ITE is essential for developing a skilled workforce and reducing unemployment in Rivers State. It was recommended, among others, that government should increase funding for ITE programmes to improve practical training facilities; universities should strengthen partnerships with industries to enhance students' workplace exposure and employability; and curriculum developers should periodically review the curriculum to integrate emerging technologies, digital competencies, and entrepreneurship education.

Keywords: Employability, Inclusive Society, Industrial Technology Education, Rivers State, Unemployment Mitigation.

Introduction

Unemployment remains one of the most persistent socio-economic challenges confronting many developing countries, particularly Nigeria, where the mismatch between graduates' competencies and labour market demands continues to widen. Despite increased access to higher education, many graduates encounter difficulties securing productive employment due

to inadequate practical skills, limited entrepreneurial competence, and insufficient exposure to emerging technologies required in contemporary workplaces (National Bureau of Statistics [NBS], 2024; International Labour Organization [ILO], 2024). Graduates often emerge with theoretical knowledge but lack practical skills due to decayed facilities, insufficient hands-on training, and chronically underfunded programs (Owo & Deeboms, 2020). This situation has heightened concerns among policymakers, educators, employers, and development agencies regarding the capacity of higher education institutions to produce graduates equipped with the competencies required for national development and global competitiveness.

The changing nature of work, driven by rapid technological advancement, automation, digital transformation, and the Fourth Industrial Revolution, has significantly altered labour market expectations. Employers increasingly seek graduates who possess not only technical expertise but also transferable competencies such as problem-solving, creativity, communication, teamwork, adaptability, entrepreneurship, and digital literacy (Organisation for Economic Co-operation and Development [OECD], 2023; World Economic Forum [WEF], 2025). Consequently, educational institutions are under increasing pressure to redesign curricula and instructional practices to produce graduates capable of responding effectively to evolving industrial and technological demands.

Industrial Technology Education (ITE), as a specialised component of Technical and Vocational Education and Training (TVET), has become an important strategy for developing a skilled workforce capable of supporting industrialisation, innovation, and sustainable economic growth. The programme combines theoretical instruction with practical training to equip learners with occupational competencies, entrepreneurial skills, technological knowledge, and work-related experiences necessary for productive employment and self-reliance (Federal Republic of Nigeria [FRN], 2014). UNESCO (2022) emphasised that effective TVET systems facilitate smooth school-to-work transitions, strengthen productivity, promote lifelong learning, and enhance national competitiveness through continuous skills development. Similarly, the joint report of UNESCO, the International Labour Organization, and the World Bank (2023) stressed that modern TVET systems should respond proactively to labour market changes by strengthening industry partnerships, improving curriculum relevance, and expanding access to quality technical education.

Recent global evidence further demonstrates that the effectiveness of technical education depends largely on its responsiveness to labour market needs. The OECD (2023) observed that vocational education systems capable of integrating work-based learning, digital technologies,

and competency-based curricula produce graduates with higher employability and greater adaptability to technological change. Likewise, Alasmari (2024) argued that vocational education institutions must continuously recognise emerging competencies and flexible learning pathways, including micro-credentials, to enhance graduates' competitiveness in dynamic labour markets. Thapa (2024) similarly reported that work-based learning significantly improves employability by strengthening learners' practical competencies, workplace confidence, and professional readiness.

Beyond technical competence, contemporary education increasingly emphasises inclusivity as an essential element of sustainable development. Inclusivity challenges persist, with marginalized groups such as women and persons with disabilities having limited access to quality industrial education, thus reducing overall societal benefit and economic participation (Ijamesin & Uwakarima, 2024). Inclusive education seeks to ensure that learners, irrespective of gender, socio-economic background, disability, or geographical location, have equitable access to quality education and opportunities for skills acquisition. UNESCO (2023) maintained that inclusive education promotes social justice, strengthens economic participation, and expands opportunities for lifelong learning. The ILO (2024) similarly observed that inclusive skills development enhances labour market participation while reducing inequalities and promoting decent work. Consequently, Industrial Technology Education is expected not only to produce technically competent graduates but also to create learning environments that promote equal participation and equitable access to practical training and employment opportunities.

In Nigeria, the Federal Government recognises Industrial Technology Education (ITE) as a strategic instrument for producing skilled manpower required for technological advancement and national development. The National Policy on Education emphasises the acquisition of practical competencies, technological innovation, entrepreneurship, and self-reliance as major objectives of technical education (FRN, 2014). Nevertheless, several challenges continue to hinder the effective implementation of Industrial Technology Education programmes in higher institutions. These include inadequate funding, obsolete workshop facilities, weak collaboration between universities and industries, insufficient curriculum review, shortage of modern instructional technologies, and negative societal perceptions regarding technical and vocational careers (UNESCO, 2022; OECD, 2023). Persistent inadequacies in infrastructure, outdated curricula, and weak links to industries limit the transformative potential of Industrial Technology Education in Rivers State (Okolie, Nwajiuba, & Igwe, 2020).

These institutional deficiencies have significant implications for graduate employability and unemployment mitigation. Kebede et al. (2024) observed that weak linkages between educational institutions and industry reduce opportunities for practical exposure, thereby limiting graduates' readiness for employment. Similarly, Selane and Odeku (2024) reported that sustained investment in practical training facilities, industry collaboration, and competency-based instruction significantly improves graduates' technical competence and employability. These findings underscore the importance of strengthening Industrial Technology Education as a strategic mechanism for addressing unemployment through quality skills development.

In Rivers State, the challenge of graduate unemployment remains a major concern despite the presence of higher education institutions offering Industrial Technology Education programmes. Although universities continue to produce graduates annually, many still experience difficulties securing employment because employers increasingly demand practical competencies and industry-relevant skills beyond academic qualifications. The situation calls for a critical evaluation of the extent to which Industrial Technology Education contributes to developing technical competence, promoting inclusive participation in skills development, and preparing graduates for productive employment within the contemporary labour market.

It is against this background that this study examined the role of Industrial Technology Education in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. Specifically, the study investigated how Industrial Technology Education promotes technical skill acquisition for graduate employability, enhances inclusivity in skills development and employment opportunities, and identified the institutional challenges affecting its effectiveness in mitigating unemployment. The findings are expected to provide empirical evidence that will assist policymakers, university administrators, curriculum developers, industry partners, and other stakeholders in strengthening Industrial Technology Education as a catalyst for sustainable employment, technological innovation, and socio-economic development.

Statement of the Problem

Despite Nigeria's abundant human and natural resources, unemployment remains a major socio-economic challenge, particularly among graduates of tertiary institutions. Recent labour market statistics indicate that graduate unemployment and underemployment continue to hinder economic productivity and sustainable development, suggesting a mismatch between the competencies acquired in higher education and those required by employers (National Bureau of Statistics [NBS], 2024; International Labour Organization [ILO], 2024). This situation is

evident in Rivers State, where the presence of vibrant industrial sectors has not translated into commensurate employment opportunities for many graduates.

Industrial Technology Education is expected to equip learners with practical, entrepreneurial, and technological skills required for gainful employment and self-reliance. However, concerns persist regarding the extent to which the programme has effectively prepared graduates to meet contemporary labour market demands. Inadequate funding, obsolete training facilities, weak institution–industry collaboration, and limited integration of emerging technologies continue to constrain the effectiveness of ITE programmes in many Nigerian universities (UNESCO, 2021).

Although previous studies have examined technical and vocational education, employability, and entrepreneurship development, relatively few have provided an integrated assessment of how ITE contributes to technical skill acquisition, inclusivity, and unemployment mitigation within public universities in Rivers State. This gap limits the availability of empirical evidence needed to guide educational policy and programme improvement. It is against this background that this study investigated the role of ITE in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria.

Purpose of the Study

The purpose of this study was to examine the role of Industrial Technology Education (ITE) in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. Specifically, the study sought to:

1. Examine the extent to which Industrial Technology Education promotes technical skill acquisition for enhancing graduate employability in public universities in Rivers State.
2. Determine the extent to which Industrial Technology Education promotes inclusivity in skills development and employment opportunities in Rivers State.
3. Identify the challenges affecting the effectiveness of Industrial Technology Education in mitigating unemployment in Rivers State.

Research Questions

The following research questions guided the study:

1. To what extent does Industrial Technology Education promote technical skill acquisition for enhancing graduate employability in public universities in Rivers State?
2. To what extent does Industrial Technology Education promote inclusivity in skills development and employment opportunities in Rivers State?

3. What challenges affect the effectiveness of Industrial Technology Education in mitigating unemployment in Rivers State?

Literature Review

Concept of Industrial Technology Education

Industrial Technology Education (ITE) is a specialised component of Technical and Vocational Education and Training (TVET) that equips learners with scientific, technological, occupational, entrepreneurial, and problem-solving competencies required for productive employment and sustainable national development. Unlike conventional academic programmes, Industrial Technology Education integrates classroom instruction with practical workshop experiences, industrial attachment, and competency-based learning to prepare graduates for careers in industrial production, manufacturing, construction, electrical and electronic technology, and related occupations (Federal Republic of Nigeria [FRN], 2014; UNESCO, 2021).

Globally, Technical and Vocational Education and Training has become increasingly recognised as a strategic instrument for developing skilled human capital capable of responding to technological innovation, industrial transformation, and changing labour market demands. UNESCO (2021) emphasised that effective TVET systems enhance productivity, facilitate smooth school-to-work transitions, promote entrepreneurship, and contribute significantly to sustainable development. Similarly, the joint report of UNESCO, the International Labour Organization (ILO), and the World Bank observed that well-functioning TVET systems improve workforce productivity by ensuring that graduates possess competencies that correspond with industry needs, thereby reducing skills mismatch and unemployment. However, empirical research in Rivers State reveals a skills gap between those acquired by graduates of industrial technical education and those demanded by key sectors such as oil and gas, manufacturing, and services (Okwudili, 2024; Nwosu, 2020).

Consequently, the rapid evolution of Industry 4.0 technologies has further transformed the objectives of Industrial Technology Education. Contemporary programmes are expected to produce graduates who possess not only occupation-specific technical competencies but also digital literacy, innovation, creativity, communication, teamwork, adaptability, and lifelong learning skills. The OECD (2023) argues that future-ready vocational education systems must remain responsive to technological change by continuously modernising curricula, strengthening work-based learning, and promoting flexible pathways into employment and further education. Likewise, the World Economic Forum (2025) identifies analytical thinking,

technological literacy, resilience, and problem-solving as among the most important competencies required in the future workforce.

In Nigeria, ITE occupies an important position in the National Policy on Education as a means of producing skilled manpower for technological advancement, industrialisation, and economic development (FRN, 2014). However, the extent to which the programme achieves these objectives depends on the adequacy of instructional facilities, curriculum relevance, qualified personnel, institutional funding, and effective collaboration between educational institutions and industry. Where these elements are inadequate, graduates may possess academic qualifications without the practical competencies required by employers, thereby limiting the contribution of Industrial Technology Education to employment creation and economic growth.

Concept of a Skilled and Inclusive Society

A skilled society is one in which individuals possess relevant technical, vocational, entrepreneurial, and digital competencies that enable them to participate effectively in economic production, innovation, and sustainable national development. Human capital development remains central to building such a society because economic competitiveness increasingly depends on the quality of knowledge, skills, and adaptability possessed by the workforce (OECD, 2023). In the contemporary knowledge economy, technical competence alone is no longer sufficient; graduates are expected to demonstrate critical thinking, collaboration, creativity, communication, and digital proficiency that enable them to function effectively in technology-driven workplaces.

Closely related to the concept of a skilled society is the notion of an inclusive society. Inclusivity emphasises equitable access to quality education, skills development, employment opportunities, and social participation regardless of gender, disability, socio-economic background, or geographical location. UNESCO (2023) maintains that inclusive education strengthens social cohesion by ensuring that every learner acquires competencies necessary for productive participation in society. Similarly, the ILO (2024) posits that inclusive skills development enhances participation in labour market, reduces inequality, and enhances economic resilience.

ITE contributes to building a skilled and inclusive society by providing learners with opportunities to acquire practical competencies required for paid employment, entrepreneurship, and lifelong learning. Through competency-based instruction, practical workshop experiences, industrial attachment, and entrepreneurship education, the programme

enhances learners' employability while expanding opportunities for self-employment. However, achieving these outcomes requires sustained investment in modern instructional facilities, qualified personnel, inclusive teaching practices, and strong collaboration between educational institutions and industries (OECD, 2023; UNESCO, 2021).

Theoretical Framework

Human Capital Theory

This study is anchored on the Human Capital Theory propounded by Schultz (1961) and further developed by Becker (1964). The theory posits that investment in education, training, and skills acquisition enhances the productive capacity of individuals, leading to higher employability, increased productivity, and improved economic growth. Human Capital Theory views education as an investment rather than consumption because the knowledge and competencies acquired increase the economic value of individuals and society.

The theory assumes that individuals who possess relevant technical and vocational competencies are more likely to secure productive employment and contribute meaningfully to national development. Consequently, governments are encouraged to invest in quality education, technological innovation, and continuous workforce development. Becker (1993) further argued that sustained investment in human capital contributes significantly to long-term productivity and national competitiveness.

Although Human Capital Theory has received widespread acceptance, critics argue that education alone cannot guarantee employment because labour market outcomes are influenced by broader economic conditions, industrial expansion, institutional quality, and public policy (Brown et al., 2003). Nevertheless, the theory remains highly relevant because it explains the relationship between Industrial Technology Education, skills acquisition, employability, and unemployment mitigation.

The theory is appropriate for this study because it provides a logical explanation of how investment in ITE can improve technical competence, enhance graduate employability, promote inclusive participation in skills development, and contribute to mitigating unemployment in Rivers State.

Empirical Review

Empirical evidence consistently demonstrates that effective Technical and Vocational Education and Training (TVET) enhance employability by equipping learners with competencies required in modern labour markets. OECD (2023) reported that future-ready

vocational education systems strengthen graduates' employment outcomes through competency-based curricula, work-based learning, industry partnerships, and flexible learning pathways that respond to technological change. Similarly, the joint UNESCO–ILO–World Bank report concluded that TVET systems that maintain close collaboration with employers are more effective in reducing skills mismatch and facilitating school-to-work transitions, particularly in developing countries.

Recent studies have also emphasised the importance of integrating digital technologies and transferable skills into technical education. According to the World Economic Forum (2025), future labour markets increasingly demand workers who combine technical expertise with digital competence, critical thinking, creativity, collaboration, and adaptability. UNESCO (2024) similarly stated that TVET institutions should strengthen entrepreneurship education, innovation, and industry engagement to ensure that graduates remain competitive in rapidly evolving labour markets.

The literature further indicates that inclusivity is an essential dimension of effective technical education. UNESCO (2023) reported that inclusive TVET policies improve access to skills development for women, persons with disabilities, and disadvantaged groups, thereby expanding participation in productive employment. OECD (2024) likewise emphasised that skills-first approaches, inclusive outreach, and lifelong learning opportunities improve workforce participation while reducing skills shortages in technology-related occupations.

Despite these positive contributions, empirical evidence identifies several institutional challenges limiting the effectiveness of ITE. UNESCO, ILO, and the World Bank reported that many TVET institutions in low-and middle-income countries continue to experience inadequate funding, obsolete training facilities, weak employer engagement, and curricula that do not adequately reflect labour market requirements. These deficiencies reduce graduates' employability and constrain the contribution of technical education to national development. Similarly, OECD (2023) stressed that vocational education systems must continuously modernise infrastructure, strengthen partnerships with industry, and update curricula to remain responsive to technological and economic changes. Although previous studies have established the importance of technical and vocational education in promoting employability and economic development, most have examined TVET broadly or focused on national policy reforms. Limited empirical attention has been devoted to examining how Industrial Technology Education simultaneously promotes technical skill acquisition, inclusivity, and unemployment mitigation within public universities in Rivers State, Nigeria.

Gap in the Literature

The reviewed literature demonstrates that ITE and TVET contribute significantly to skills development, employability, entrepreneurship, and sustainable economic growth. However, existing studies have largely focused on broad TVET reforms, labour market outcomes, or national policy initiatives. Few studies have provided an integrated assessment of the relationship between technical skill acquisition, inclusive participation, and unemployment mitigation within the context of public universities in Rivers State.

This study addresses that gap by empirically examining the role of ITE in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. The findings are expected to provide evidence that will assist policymakers, university administrators, curriculum developers, and other stakeholders in strengthening Industrial Technology Education as a strategic tool for workforce development and sustainable employment.

Methodology

The study adopted a descriptive survey research design to investigate the role of ITE in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. The design was considered appropriate because it enabled the researchers to obtain the opinions of respondents regarding the contribution of Industrial Technology Education to skills acquisition, inclusivity, and unemployment mitigation without manipulating the study variables. A descriptive survey design is appropriate as it allows systematic collection and analysis of data to describe existing phenomena without manipulation (Osam, 2013). The study was conducted in the two public universities offering Industrial Technology Education programmes in Rivers State, namely Ignatius Ajuru University of Education and Rivers State University. The population of the study comprised 158 respondents, consisting of 67 lecturers and 91 final-year students of industrial technical education in the two state-owned universities. A sample of 113 respondents was selected using a proportionate stratified random sampling technique to ensure adequate representation of lecturers and students from both institutions. Data were collected using the researchers-developed instrument titled “Industrial Technology Education and Employment Enhancement Questionnaire (ITEEEQ)”. The instrument consisted of two sections. Section A elicited demographic information on the respondents, while Section B contained items addressing the three objectives of the study. The items were structured on a 4-point Likert rating scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The instrument was subjected to face and content validation by two experts in Industrial Technology Education and one expert in Measurement and Evaluation from a public university

in Nigeria. Their observations and recommendations were incorporated in producing the final version of the instrument. A pilot study was conducted using 25 Industrial Technology Education lecturers and students from Niger Delta University, Wiberforce Island, Amassoma, Bayelsa State. Data obtained from the pilot test were analysed using Cronbach's Alpha, which yielded a reliability coefficient of 0.87, indicating that the instrument possessed high internal consistency and was suitable for the study. Participation in the study was voluntary, and respondents were adequately informed about the purpose of the research. Their anonymity and confidentiality were assured throughout the study. Copies of the questionnaire were administered personally by the researchers with the assistance of a trained research assistant. A total of 113 copies of the questionnaire were administered and successfully retrieved, representing a 100% retrieval rate. Data collected were analysed using mean ($\bar{x}$) and standard deviation to answer the research questions. The criterion mean of 2.50 served as the benchmark for decision-making. Mean scores of 2.50 and above were interpreted as accepted, while mean scores below 2.50 were regarded as rejected.

Table 1: Population and Sample Distribution of Respondents

Institution	Lecturers	Final-year Students	Population	Sample
Ignatius Ajuru University of Education	52	70	122	87
Rivers State University	15	21	36	26
Total	67	91	158	113

Source: Field Survey, 2026.

Results

The data collected were analysed using mean ($\bar{x}$) and standard deviation to answer the research questions. The decision rule was based on a criterion mean of 2.50. Mean scores of 2.50 and above were regarded as accepted, while mean scores below 2.50 were regarded as rejected.

Research Question 1: To what extent does Industrial Technology Education promote technical skill acquisition for enhancing graduate employability in public universities in Rivers State?

Table 2: Mean Ratings of Respondents on the Extent to which Industrial Technology Education Promotes Technical Skill Acquisition for Enhancing Graduate Employability (n = 113)

S/N	Item	Mean ($\bar{x}$)	SD	Decision
1	Industrial Technology Education equips students with practical technical skills required for employment.	3.61	0.64	Accepted
2	The programme develops students' problem-solving and innovation skills.	3.48	0.71	Accepted
3	Industrial Technology Education enhances students' entrepreneurial competencies for self-employment.	3.57	0.68	Accepted
4	Practical workshop experiences improve graduates' readiness for the labour market.	3.69	0.60	Accepted
5	The programme equips students with digital and emerging technological skills relevant to modern industries.	3.26	0.74	Accepted
	Grand Mean	3.52	0.67	Accepted

Source: Field Survey, 2026.

The results in Table 2 indicate a grand mean of 3.52, which is above the criterion mean of 2.50. This implies that respondents agreed that Industrial Technology Education substantially promotes technical skill acquisition for enhancing graduate employability in public universities in Rivers State.

Research Question 2: To what extent does Industrial Technology Education promote inclusivity in skills development and employment opportunities?

Table 3: Mean Ratings of Respondents on the Extent to which Industrial Technology Education Promotes Inclusivity in Skills Development and Employment Opportunities (n = 113)

S/N	Item	Mean ($\bar{x}$)	SD	Decision
1	The programme provides equal learning opportunities irrespective of gender.	3.34	0.73	Accepted
2	Students from different socio-economic backgrounds have equal access to practical training.	3.18	0.79	Accepted
3	The learning environment supports inclusive participation during practical activities.	3.27	0.70	Accepted
4	Industrial Technology Education encourages collaboration and teamwork among students.	3.44	0.66	Accepted
5	Students with diverse learning needs are adequately supported during practical instruction.	2.91	0.82	Accepted

S/N	Item	Mean ($\bar{x}$)	SD	Decision
	Grand Mean	3.23	0.74	Accepted

Source: Field Survey, 2026.

Table 3 shows a grand mean of 3.23, indicating that respondents agreed that Industrial Technology Education promotes inclusivity in skills development and employment opportunities, although there is room for improvement in supporting learners with diverse educational needs.

Research Question 3: What challenges affect the effectiveness of Industrial Technology Education in mitigating unemployment in Rivers State?

Table 4: Mean Ratings of Respondents on the Challenges Affecting the Effectiveness of Industrial Technology Education in Mitigating Unemployment (n = 113)

S/N	Item	Mean ($\bar{x}$)	SD	Decision
1	Inadequate funding limits effective implementation of Industrial Technology Education programmes.	3.72	0.58	Accepted
2	Obsolete workshop equipment affects practical skills acquisition.	3.65	0.63	Accepted
3	Weak collaboration between universities and industries limits students' exposure to current industrial practices.	3.51	0.69	Accepted
4	Inadequate curriculum review affects the relevance of graduates' skills to labour market demands.	3.43	0.71	Accepted
5	Negative societal perception of Industrial Technology Education discourages students from enrolling in the programme.	3.29	0.78	Accepted
	Grand Mean	3.52	0.68	Accepted

Source: Field Survey, 2026.

The results in Table 4 reveal a grand mean of 3.52, indicating that respondents agreed that inadequate funding, obsolete workshop facilities, weak university–industry collaboration, infrequent curriculum review, and negative societal perceptions are the major challenges affecting the effectiveness of Industrial Technology Education in mitigating unemployment in Rivers State.

Discussion of Findings

The findings of this study according to Table 2 revealed that ITE plays a significant role in promoting technical skill acquisition for enhancing graduate employability in public universities in Rivers State. Respondents agreed that the programme equips students with

practical technical competencies, entrepreneurial skills, problem-solving abilities, and digital skills required for productive employment and self-employment. The grand mean of 3.52 suggests that Industrial Technology Education effectively prepares graduates to meet contemporary labour market expectations. This finding agrees with the Organisation for Economic Co-operation and Development (OECD, 2023), which reported that vocational education systems that integrate competency-based instruction, practical learning, and industry engagement significantly improve graduate employability and workforce readiness. The finding also corroborates Thapa (2024), who found that work-based learning strengthens learners' technical competence, workplace confidence, and transition into employment. Similarly, Selane and Odeku (2024) observed that effective technical and vocational education equips graduates with practical competencies that enhance productivity and economic participation. The finding further supports the Human Capital Theory of Schultz (1961) and Becker (1964), which posits that investment in education and skills development enhances individuals' productivity and employability. The implication is that sustained investment in Industrial Technology Education through modern instructional facilities, practical learning experiences, and competency-based curricula will enhance graduate employability, stimulate entrepreneurship, and contribute to unemployment reduction in Rivers State.

The study as seen in Table 3 further revealed that ITE promotes inclusivity in skills development and employment opportunities. Respondents agreed that the programme provides equitable opportunities for practical learning, encourages collaborative participation, and supports the acquisition of employability skills among students irrespective of gender or socio-economic background. However, comparatively lower ratings on support for learners with diverse educational needs indicate that additional efforts are required to strengthen inclusive instructional practices. This finding agrees with UNESCO (2023), which emphasised that inclusive education enhances equal access to quality learning opportunities and strengthens social cohesion through equitable participation in education and skills development. It also corroborates the International Labour Organization (2024), which maintained that inclusive skills development improves labour market participation, promotes decent work, and reduces socio-economic inequalities. Furthermore, Alasmari (2024) argued that flexible learning opportunities and recognition of emerging competencies improve graduates' competitiveness and expand access to employment in rapidly changing labour markets. The implication of this finding is that universities should continue to strengthen inclusive teaching practices, improve access to practical training facilities, and provide supportive learning environments that enable

all learners to acquire industry-relevant competencies irrespective of their backgrounds or individual learning characteristics.

The findings in Table 4 identified inadequate funding, obsolete workshop equipment, weak university–industry collaboration, inadequate curriculum review, and negative societal perceptions of Industrial Technology Education as the major constraints affecting its effectiveness in mitigating unemployment. The grand mean of 3.52 indicates that these institutional challenges significantly limit the capacity of universities to provide quality practical training consistent with current industrial requirements. This finding agrees with UNESCO, the International Labour Organization, and the World Bank (2023), which reported that many Technical and Vocational Education and Training institutions experience inadequate financing, outdated training facilities, and weak collaboration with industries, thereby reducing the relevance of graduates' competencies to labour market needs. The finding also corroborates Kebede et al. (2024), who concluded that weak institutional linkages with industry reduce opportunities for workplace learning, practical exposure, and graduate employability. Similarly, the World Economic Forum (2025) emphasised that educational institutions must continuously modernise curricula and strengthen partnerships with industry to prepare graduates for emerging occupations shaped by technological advancement and digital transformation. This finding agrees with the views of Owo and Deebom (2020) who postulates that students lacked skills in Computer-aided design and automobile repair which are relevant in enhancing their employability. Furthermore, Okolie et al., (2020) posit that these challenges undermine skill acquisition quality and graduate employability.

The implication of these findings is that improving institutional funding, modernising workshop facilities, strengthening university–industry partnerships, and periodically reviewing Industrial Technology Education curricula will significantly improve graduates' technical competencies, increase their employability, and enhance the contribution of Industrial Technology Education to sustainable economic development and unemployment mitigation in Rivers State.

Conclusion

This study examined the role of ITE in building a skilled and inclusive society for mitigating unemployment in Rivers State, Nigeria. The findings revealed that ITE makes a significant contribution to the development of technical, entrepreneurial, and employability skills required for productive engagement in the labour market. The study also established that the programme promotes inclusivity by providing equitable opportunities for skills acquisition and participation in practical learning experiences. However, the effectiveness of Industrial

Technology Education is constrained by inadequate funding, obsolete workshop facilities, weak university–industry collaboration, inadequate curriculum review, and unfavourable societal perceptions of the programme.

The study therefore concludes that strengthening ITE through improved institutional support, modern instructional facilities, curriculum enhancement, and stronger collaboration with industry will enhance graduate employability and contribute significantly to mitigating unemployment in Rivers State. The study further contributes to existing knowledge by providing empirical evidence on the interconnected roles of technical skill development, inclusivity, and institutional capacity in promoting sustainable employment through Industrial Technology Education.

Contribution to Knowledge

This study contributes to the growing body of knowledge on ITE by providing empirical evidence on its role in promoting technical skill acquisition, inclusive participation, and graduate employability within public universities in Rivers State. Unlike previous studies that examined employability or technical education separately, this study integrates technical skills development, inclusivity, and unemployment mitigation into a single analytical framework. The findings also provide evidence that can guide educational policymakers, curriculum developers, university administrators, and industry stakeholders in strengthening Industrial Technology Education as a strategic tool for workforce development and sustainable economic growth in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are suggested:

1. Universities offering Industrial Technology Education should strengthen practical and competency-based training by providing students with adequate opportunities to acquire technical, digital, entrepreneurial, and problem-solving skills that enhance graduate employability.
2. University authorities should promote inclusive teaching and learning practices by ensuring equitable access to practical training, instructional facilities, and learning opportunities for all students irrespective of gender, socio-economic background, or learning needs.
3. Government should increase funding for Industrial Technology Education programmes to facilitate the provision of modern workshops, laboratories, equipment, instructional materials, and digital technologies required for effective practical training.

4. Universities should establish stronger partnerships with industries through regular industrial attachment programmes, collaborative research, curriculum review, and internship opportunities to ensure that graduates acquire competencies that reflect current labour market demands.
5. Curriculum developers and regulatory agencies should periodically review the Industrial Technology Education curriculum to incorporate emerging technologies, digital competencies, entrepreneurship, and other industry-relevant skills required in the twenty-first-century workplace.
6. Government and educational institutions should launch public awareness campaigns to improve societal perceptions of Industrial Technology Education.

References

- Alasmari, T. (2024). Reshaping vocational training: A study on the recognition of micro-credentials in job markets. *Education + Training*, 66(2/3), 233–251. <https://doi.org/10.1108/ET-07-2023-0282>
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- Brown, P., Hesketh, A., & Williams, S. (2003). Employability in a knowledge-driven economy. *Journal of Education and Work*, 16(2), 107–126. <https://doi.org/10.1080/1363908032000070648>
- Federal Republic of Nigeria. (2014). *National policy on education* (6th ed.). Nigerian Educational Research and Development Council.
- Ijamesin, M. A., & Uwakarima, T. O. (2024). Inclusive education for sustainable development in public universities in Rivers State, Nigeria. *International Journal of Education and Development*, 6(1), 45-55.
- International Labour Organization. (2024). *World employment and social outlook: Trends 2024*. International Labour Office.
- Kebede, A., Asgedom, A., & Asfaw, A. (2024). Is linking technical and vocational training with industry a bridge to employability? Lessons from a literature review for Ethiopia. *Cogent Education*, 11(1). <https://doi.org/10.1080/2331186X.2024.2406721>

- National Bureau of Statistics. (2024). *Nigeria labour force survey (NLFS): Q1 2024*. National Bureau of Statistics.
- Nwosu, S. C. (2020). Discriminatory attitudes and skill gaps among business education graduates in Rivers State industrial sector. *Journal of Vocational and Technical Education*, 8(2), 56-70.
- Okolie, U. C., Nwajiuba, C. S., & Igwe, J. O. (2020). Bridging the gap between industrial education and workplace demand in Nigeria: The role of Industrial Training Fund (ITF). *Journal of Technical Education and Training*, 12(1), 77-89.
- Okwudili, C. B. (2024). Skills mismatch and employability in Rivers State labour market. *International Journal of Advanced Multidisciplinary Research Studies*, 4(3), 1533-1538.
- Organisation for Economic Co-operation and Development. (2023). *Building future-ready vocational education and training systems*. OECD Publishing. <https://doi.org/10.1787/28551a79-en>
- Organisation for Economic Co-operation and Development. (2023). *OECD skills outlook 2023: Skills for a resilient green and digital transition*. OECD Publishing. <https://doi.org/10.1787/27452c3b-en>
- Osam, I. (2013). Implementing Vocational and Technical Education Programmes in Rivers State. *International Journal of Scientific Research in Education*, 6(2), 128-148.
- Owo, O. T. & Deebom, T. M. (2020). Assessment of the technical skills acquired by technology education students for employment generation in Rivers State, Nigeria. *International Journal of Latest Research in Humanities and Social Science*, 3(2), 35-41.
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1-17.
- Selane, C., & Odeku, K. O. (2024). An analysis of how TVET is playing a significant role in fostering students' skills and competencies in South Africa. *Journal of Educational and Social Research*, 14(3). <https://doi.org/10.36941/jesr-2024-0074>
- Thapa, H. S. (2024). Development of employability skills through work-based learning. *Journal of Technical and Vocational Education and Training*, 18(1), 102-111. <https://doi.org/10.3126/tvet.v18i1.62750>
- UNESCO, International Labour Organization, & World Bank. (2023). *Technical and vocational education and training must transform for successful and just transitions*. UNESCO. <https://www.unesco.org/en/articles/new-report-unesco-world-bank-and-ilo-says-technical-and-vocational-education-and-training-must>
- UNESCO. (2022). *Transforming technical and vocational education and training for successful and just transitions: UNESCO strategy 2022-2029*. UNESCO. <https://unesdoc.unesco.org>

UNESCO. (2023). *Global education monitoring report 2023: Technology in education: A tool on whose terms?* UNESCO. <https://doi.org/10.54676/UZCO6952>

UNESCO. (2024). *TVET infuses a much-needed dose of relevance into education*. UNESCO. <https://www.unesco.org/en/articles/tvet-infuses-much-needed-dose-relevance-education>

World Bank. (2024). *Nigeria development update: Building momentum for inclusive growth*. World Bank. <https://www.worldbank.org/en/country/nigeria/publication/nigeria-development-update>

World Economic Forum. (2025). *The future of jobs report 2025*. World Economic Forum. <https://www.weforum.org/reports/the-future-of-jobs-report-2025>