JOURNAL OF RESEARCH IN INDUSTRIAL TECHNOLOGY & EDUCATIONAL STUDIES (JRITES)
Homepage: http://Journals.unizik.edu.ng/index.php/jrites
e-ISSN 3122-0436
Vol 2 Issue 3 (2026) 76-88

Bridging Skills Gap Between Vocational Education and Industry Needs: A Future-Oriented Assessment of Employability Skills in Nigeria

A. M. Ogundare[1]*

[1]*Department of Industrial Technology Education, Nnamdi Azikiwe University, Awka-Nigeria*

Corresponding author

Abstract: Technical and vocational education is generally treated as the principal channel through which countries convert their human potential into productive labour. In Nigeria, however, a persistent gap between the competencies developed inside vocational classrooms and workshops and the competencies that employers actually require continues to constrain graduate employability and, by extension, national productivity. This paper draws together recent empirical and conceptual scholarship on the Nigerian technical and vocational education and training (TVET) sub-sector in order to examine the nature, drivers and consequences of that gap. Adopting a qualitative documentary and conceptual-integration approach, the paper reorganizes existing evidence into clearly labelled tables covering the size of the gap, the competency domains it affects, and the factors that predict graduate employability, with each table interpreted in turn before a dedicated discussion section links the findings to Human Capital Theory, the Triple Helix Model and Social Cognitive Theory. It is argued that narrowing the skills gap will take more than incremental curriculum adjustment; it requires durable, institutionalized cooperation among vocational institutions, industry and government. The paper closes with a forward-looking policy framework built around industry advisory boards, jointly designed competency-based curricula, dual training arrangements, national skills forecasting, lecturer immersion in industry, and digital innovation laboratories measures intended to help Nigerian vocational education anticipate, rather than simply react to, the shifting demands of a twenty-first-century economy.

Keywords: Vocational education, Technical and Vocational Education and Training (TVET), Skills gap, Employability skills, Industry 4.0, Human capital, Nigeria.

INTRODUCTION

The alignment between what is taught in schools with what labour markets need has become one of the central puzzles in human capital policy today. This tension is especially evident in Nigeria's technical and vocational education and training (TVET) sub-sector, where a growing body of research points to an enduring mismatch between the competencies vocational graduates carry into the workplace and the competencies employers actually look for (Chiamogu & Chiamogu, 2026; Ayaegbunem, Kanu & Aja, 2026). Vocational and technical education exists precisely to turn classroom instruction into applied, occupation-specific skill it is the vehicle through which a country converts a growing youth population into a productive industrial workforce (Oketch, 2007; UNESCO, 2016). Yet in Nigeria, employer surveys and institutional reviews repeatedly find that graduates of polytechnics, technical colleges and university industrial-technology programmes enter the labour market without the hands-on, digital and problem-solving abilities that contemporary production, construction and

Corresponding author: am.ogundare@pg.unizik.edu.ng

manufacturing settings now demand (Ayaegbunem et al., 2026; Oviawe, Uwameiye & Uddin, 2017).

This paper draws together recent Nigerian evidence spanning polytechnic curriculum governance, university-based industrial-technology education, and the wider concept of employability skills, with the aim of building an integrated, forward-looking picture of the problem. Three considerations motivate this synthesis. First, the skills gap is not simply a curriculum-design issue; it is an institutional and governance problem rooted in loose, informal ties between vocational institutions and industry (Chiamogu & Chiamogu, 2026). Second, the employability skills needed to close the gap go beyond narrow occupational competence to include the ability to communicate, the capacity to retain and draw on accumulated knowledge, and the discipline of filtering relevant information from an overload of sources (Akindele & Olabimtan, 2023). Third and most important for policy the skills that will define employability over the coming decade are changing quickly under pressure from automation, artificial intelligence, digital manufacturing and the shift toward greener production, trends that Nigerian TVET curricula have, so far, barely begun to incorporate (Chiamogu & Chiamogu, 2026).

Statement of the Problem

Despite years of policy attention, the gap between what vocational training produces and what industry requires in Nigeria has proved stubbornly resistant to change. Evidence gathered from employers shows that most firms regard graduates as poorly prepared and lacking essential technical and soft skills, and a comparable share of firms report difficulty filling technical vacancies even with a large pool of job seekers available. At the same time, many graduates either remain unemployed for extended periods or drift into Nigeria's sizeable informal sector, where the skills built through formal training only loosely correspond to the tasks actually performed.

The problem is made more urgent by a forward-looking dimension that Nigerian scholarship has only recently started to explore: the rapid spread of Industry 4.0 technologies artificial intelligence, robotics, the Internet of Things, cyber-physical systems and digital manufacturing is redefining what counts as 'technical competence', even as Nigerian vocational curricula remain built around older technical content. Should curriculum reform continue to trail behind the pace of technological change, today's skills gap risks hardening into a deeper problem of structural skills obsolescence. Addressing this forward-looking dimension is the specific purpose of the present paper.

Objectives of the Study

Given this problem context, the study pursued three specific objectives:

1. To assess the size and structure of the current skills gap between what Nigerian vocational and technical education produces and what industry requires.
2. To identify the core employability skills communication, stored knowledge, selective exposure and digital/Industry 4.0 competence that mediate the move from vocational training into productive employment.
3. To project, on the basis of emerging technological and labour-market trends, which employability skills Nigerian vocational education should prioritise over the next decade.

Research Questions

The paper is guided by three research questions:

1. What is the extent and structure of the skills gap between industry needs and vocational/technical education outputs in Nigeria?

2. Which employability skills most strongly mediate graduates' transition into productive work?
3. How are emerging technological and economic trends likely to reshape future employability skill requirements?

LITERATURE REVIEW

The Skills Gap Construct

A skills gap is typically understood as the difference between the competencies of employers need and the competencies actually held by job seekers or employees (Kayode, 2009, cited in Ayaegbunem et al., 2026). Within TVET, this gap tends to arise where curricula favour theory over practical, industry-connected learning, so that graduates leave with credentials that do not translate into workplace readiness (Oketch, 2007; Oviawe, Uwameiye & Uddin, 2017). The idea is related to, though distinct from, the 'knowledge gap' — the difference between what a person currently knows and what productive participation in a chosen field demands (Gonczi & Hager, 2016, cited in Akindele & Olabimtan, 2023). Where the knowledge gap is essentially cognitive, the skills gap is behavioural and applied: it is about whether knowledge, once acquired, can actually be put to use in solving real workplace problems.

Vocational and Technical Education in Nigeria

In Nigeria, technical and vocational education and training is delivered mainly through polytechnics, technical colleges and university-based industrial-technology programmes, with the aim of equipping learners with occupation-specific skill, digital literacy and entrepreneurial capacity for employment or self-employment (Chiamogu & Chiamogu, 2026). Curriculum standards at polytechnic level are set by the National Board for Technical Education, while industrial-technology education at university level follows institutional curricula that are, at least in principle, reviewed periodically. In practice, however, there are few formal channels for feeding real-time industry input into curriculum design, and revision cycles tend to drag on, leaving training content out of step with current industrial practice (Chiamogu & Chiamogu, 2026).

Employability Skills

Employability skills refer to the wider set of abilities and dispositions — beyond narrow technical mastery that allow individuals to find work, perform well in it and adapt as it changes. These include collaboration, flexibility, problem-solving, communication and work ethic (Roberts, 2018, cited in Akindele & Olabimtan, 2023). Nigerian survey evidence singles out three components of this set as especially consequential: communication skill, which governs how workplace information is transmitted and absorbed and is linked to better decision-making and productivity (Smith & Johnson, 2019, cited in Akindele & Olabimtan, 2023); stored information, the accumulated base of knowledge that lets workers apply past experience to new problems (Anderson, Brion, Moore & Kennedy, 2020, cited in Akindele & Olabimtan, 2023); and selective exposure, the disciplined ability to identify trustworthy sources, filter out irrelevant material and keep up with industry developments despite information overload (Chen & Williams, 2021, cited in Akindele & Olabimtan, 2023). How much each of these predictors contributes to employability outcomes, as reported by Akindele and Olabimtan (2023), is tabulated and discussed in Table 3 (Section 4.3).

Industry Partnerships and Work-Based Learning

Industry partnerships joint curriculum development, internships, apprenticeships, research collaboration and equipment donation are widely recognized internationally as the means by which vocational training stays responsive to changes in the labour market (OECD,

2018, cited in Chiamogu & Chiamogu, 2026). Nigeria's main work-based learning instrument, the Student Industrial Work Experience Scheme (SIWES), was designed to connect theory with practice, but its effectiveness is consistently reported to be undermined by weak supervision, poor coordination and limited private-sector buy-in, with placements often poorly matched to students' fields of study (Uzoagulu, 2011; Oviawe, Uwameiye & Uddin, 2017; Chiamogu & Chiamogu, 2026). By contrast, dual-training systems referenced internationally — Germany's apprenticeship model, Singapore's Institute of Technical Education, and industry-cluster-aligned vocational institutions in China show that sustained, institutionalized industry involvement measurably improves how well training outcomes match labour-market needs (Chiamogu & Chiamogu, 2026).

Theoretical Framework

This study draws on three complementary theoretical perspectives to account for both the persistence of the skills gap and the route toward closing it.

Human Capital Theory

Human Capital Theory, associated chiefly with Schultz (1961) and Becker (1964, 1993), treats education and training as an investment in individuals' productive capacity, one that yields returns in the form of higher productivity, earnings and economic growth. Applied to TVET, the theory suggests that vocational training represents a deliberate investment aimed at raising labour productivity but it equally implies that the return on this investment depends on the relevance and quality of the training provided. Where curricula fail to keep pace with actual industrial practice, the human capital that is produced carries less economic value, which shows up as the skills mismatch documented throughout the Nigerian evidence base (Becker, 1993, cited in Chiamogu & Chiamogu, 2026).

Triple Helix Model of Innovation

The Triple Helix Model, developed by Etzkowitz and Leydesdorff (2000), explains sustainable technological and economic development as the product of dynamic interaction among three institutional actors — educational institutions, industry and government. Applied to Nigerian TVET, the model makes clear that curriculum relevance cannot be achieved by vocational institutions acting alone; it depends on structured, ongoing interaction with industry (which supplies practical and technological know-how) and government (which supplies regulatory and funding frameworks). Seen this way, the persistence of Nigeria's skills gap reflects a weakly operationalized Triple Helix, in which industry's role in curriculum governance remains informal, sporadic and largely unenforced (Chiamogu & Chiamogu, 2026).

Social Cognitive Theory

Bandura's (1986) Social Cognitive Theory explains how skills are acquired through observation, imitation and self-regulation, and highlights self-efficacy a person's confidence in their own ability to perform tasks successfully as a key determinant of workplace performance. Within TVET, this theory points to the pedagogical value of structured exposure to skilled practitioners: students who observe and imitate experienced industry professionals during work-based learning are more likely to internalize workplace-relevant competence than those who receive classroom instruction alone (Akindele & Olabimtan, 2023). This offers a psychological counterpart to the structural accounts provided by Human Capital Theory and the Triple Helix Model, and it helps explain the empirical finding that 'selective exposure' functions as a significant predictor of employability (Akindele & Olabimtan, 2023).

Taken together, these three frameworks suggest that closing Nigeria's vocational skills gap requires simultaneous attention to the relevance and quality of the human capital investment itself, to the institutional architecture linking vocational education to industry and government, and to the individual-level psychological and behavioural mechanisms

observation, self-efficacy, communication and selective information use through which competence is actually internalized and put into practice.

Empirical Review

Recent Nigerian empirical work converges on a broadly consistent picture of the vocational skills gap, even where the studies differ in institutional focus and method. The quantitative indicators, competency-domain comparisons and predictor coefficients drawn from this body of work are extracted, tabulated and interpreted in Section 4; the summaries below situate those figures within the studies from which they originate.

Evidence from Industrial Technology Education

A descriptive survey comparing how industrial-technology-education lecturers and industry technical workers perceive skills requirements found consistent agreement that industry needs competence in construction and building technology, industrial technology, information and communication technology, engineering and manufacturing, cross-cutting technical competencies, problem-solving, workshop safety and compliance, project management, and maintenance management and that current university-based training falls short of industry expectations on the first six of these domains (Ayaegbunem, Kanu & Aja, 2026). Independent-samples t-tests further showed no statistically significant difference between lecturers' and industry workers' perceptions, whether of the skills required or of the skills currently supplied, suggesting the gap is a shared perception across stakeholders rather than an artefact of institutional bias (Ayaegbunem et al., 2026). This competency-domain comparison is tabulated as Table 1 (Section 4.1), and the causes identified in the same study are tabulated as Table 4 (Section 4.4).

Evidence from Polytechnic Curriculum Governance

A qualitative documentary analysis of curriculum governance in Nigerian polytechnics likewise found systemic misalignment between curricula and labour-market needs, tracing this to weak institutional collaboration with industry and limited incorporation of emerging technologies into training (Chiamogu & Chiamogu, 2026). The analysis locates the persistence of the gap not simply in resource constraints but in a deeper institutional culture — an epistemic hierarchy that privileges theoretical over applied knowledge, mutual distrust between academia and industry, and a pattern of 'reform mimicry' in which policy instruments such as SIWES are adopted on paper but not substantively implemented (Chiamogu & Chiamogu, 2026).

Evidence on Employability Skills Formation

Complementing these institution-focused studies, survey evidence from personnel managers across Ogun State's industrial sectors shows that communication skill, stored information and selective exposure together account for a large share of the variance in employability outcomes, with communication skill carrying the largest estimated effect (Akindele & Olabimtan, 2023). This finding is tabulated as Table 3 (Section 4.3) and matters for a forward-looking assessment because it indicates that strengthening technical curricula alone will not close the employability gap unless vocational training also deliberately builds transferable communication and information-management competencies precisely the 'soft' capabilities that automation is least likely to replace.

METHODOLOGY

Research Design

In keeping with the synthetic, forward-looking purpose of this paper, the study follows a qualitative documentary and conceptual-integration design (Creswell, 2014). This design fits the research questions, which call for systematically comparing and re-interpreting findings

already reported across several independent Nigerian studies rather than collecting new primary data. It mirrors the documentary approach used in recent polytechnic-governance research (Chiamogu & Chiamogu, 2026), which relies on the systematic review and thematic coding of policy documents, institutional reports and peer-reviewed literature to examine institutional processes that a single-site survey would struggle to capture.

Sources and Selection of Literature

Data for the study were drawn from recently published Nigerian empirical studies both survey-based and documentary on vocational skills gaps, employability determinants and curriculum governance, and triangulated with international policy literature on TVET and Industry 4.0. Priority went to peer-reviewed Nigerian studies published between 2017 and 2026 that reported quantitative or comparative findings on the magnitude of the skills gap, competency-domain requirements, or predictors of employability. These were supplemented with authoritative institutional and news sources (e.g., NAN, 2023; Aladekoye, 2025) where they reported figures directly bearing on the research questions, and with seminal theoretical works (Schultz, 1961; Becker, 1964, 1993; Bandura, 1986; Etzkowitz & Leydesdorff, 2000) underpinning the theoretical framework.

Data Extraction and Tabulation Procedure

Every source retained for analysis was read in full, and any numerical finding, comparative rating or ranked competency statement bearing on the three research questions was extracted from its reported context and logged against its source, year and study type. The extracted items were then grouped thematically into four categories corresponding to the research questions: competency domains where industry requirements exceed institutional provision; quantitative indicators of the size of the skills gap; predictors of employability skills and their relative contribution; and the root causes of the gap identified by the reviewed studies. Each category was then organized into a labelled table (Tables 1–4, Section 4) so that patterns across studies could be examined independently of the narrative in which each finding originally appeared.

Method of Interpretation

Interpretation proceeded in two stages, corresponding to the split between Sections 4 and 5 of the paper. First, each table was interpreted narrowly, directly beneath the table itself, to state what the assembled figures show without reference to theory. Second, the interpreted data were discussed collectively in Section 5, where patterns across the tables were connected to the study's three theoretical frameworks Human Capital Theory, the Triple Helix Model and Social Cognitive Theory and to the study's stated objectives and research questions, allowing conclusions to be drawn that no single table or source could support on its own.

Scope and Limitations

Because the study synthesizes previously reported findings rather than administering new instruments, it cannot establish new statistical relationships or generalize beyond the samples and contexts of the original studies; the figures reported in Section 4 retain the sampling frames, instruments and limitations of the studies from which they are drawn, and are presented here for comparative and interpretive purposes only. Future empirical extensions of this synthesis would benefit from a structured survey of vocational lecturers, industry technical personnel and recent graduates modelled on the Industrial-Required-Mean/Industrial-Provided-Mean comparative approach used in industrial-technology-education research; a forward-looking Delphi or expert-panel exercise to project emerging skills requirements over a five-to-ten-year horizon; and regression-based analysis of the relationship between specific employability-skill domains and employment outcomes, building on the modelling approach of Akindele and Olabimtan (2023).

PRESENTATION AND INTERPRETATION OF DATA

Presentation of Data

This section presents, in labelled tabular form, the data drawn from the literature reviewed in Section 2, following the procedure described in Section 3. Each table is followed immediately by a narrow interpretation of what it shows; the wider discussion of what these patterns mean for theory and policy is reserved for Section 5.

Competency Domains: Industry Requirement Versus Institutional Provision

Table 1: Competency Domains Where Industry Requirements Exceed Institutional Provision

S/N	Competency Domain	Industry Requirement Level	Institutional Provision Level	Gap Status
1	Construction and building technology	High	Low–Moderate	Gap present
2	Industrial technology	High	Low–Moderate	Gap present
3	Information and communication technology (ICT)	High	Low	Gap present
4	Engineering and manufacturing	High	Low–Moderate	Gap present
5	Cross-cutting technical competencies	High	Low–Moderate	Gap present
6	Problem-solving	High	Low–Moderate	Gap present
7	Workshop safety and compliance	High	Moderate	Narrower gap
8	Project management	High	Moderate	Narrower gap
9	Maintenance management	High	Moderate	Narrower gap

Source: Compiled from Ayaegbunem, Kanu and Aja (2026).

Table 1 shows that what industry requires outstrips what institutions currently provide across all nine domains surveyed, with the shortfall most pronounced in the first six construction and building technology, industrial technology, ICT, engineering and manufacturing, cross-cutting technical competencies, and problem-solving where the reviewed study found the widest divergence between industry needs and what university-based industrial-technology programmes currently deliver. Workshop safety, project management and maintenance management show a comparatively narrower gap. Independent-samples t-tests in the source study found no statistically significant difference between lecturers' and industry workers' ratings, indicating that this pattern reflects a shared, cross-stakeholder assessment rather than a difference between institutional and industry perception.

Quantitative Indicators of the Skills Gap

Table 2: Key Quantitative Indicators of the Nigerian TVET Skills Gap

S/N	Indicator	Reported Value	Source
1	Graduates reported to lack basic digital skills	Over 85%	NAN (2023), cited in Chiamogu & Chiamogu (2026)
2	TVET graduates in employment or self-employment	≈ 60%	Aladekoye (2025), cited in Chiamogu & Chiamogu (2026)
3	Employers reporting graduates as not job-ready	≈ 60%	Salami (2026)
4	Youth unemployment rate, Nigeria	6.5% (ILO estimate)	Oweh (2025)
5	Firms considering graduates inadequately prepared	Large majority	Statement of the Problem synthesis (Section 1)

Note: Figures in this table are drawn from independent secondary sources with differing samples, methods and reference periods, and are not directly additive; they are reported together for comparative orientation only.

Table 2 shows that the digital-skills shortfall affecting over 85% of graduates is the most severe of the reported indicators, exceeding both the job-readiness shortfall reported by employers (≈60%) and the reported youth unemployment rate (6.5%). Read alongside the ≈60% employment/self-employment rate for TVET graduates specifically, the table suggests that formal employment outcomes for vocational graduates are not simply a function of overall labour-market slack, but are compounded by a specific, large-scale digital-competence deficit likely to widen further as Industry 4.0 technologies spread through Nigerian workplaces.

Predictors of Employability Skills

Table 3: Predictors of Employability Outcomes and Their Reported Contribution

S/N	Predictor Variable	Description	Relative Contribution
1	Communication skill	Governs the transmission and acquisition of workplace information; linked to decision-making and productivity	Strongest individual effect
2	Stored information	Accumulated knowledge base that enables workers to apply prior experience to novel problems	Significant contributor
3	Selective exposure	Disciplined capacity to identify reliable sources and filter relevant industry information	Significant contributor

Source: Compiled from Akindele and Olabimtan (2023), based on a survey of personnel managers in Ogun State, Nigeria.

Table 3 shows that all three predictor variables are reported as significant contributors to employability outcomes, together explaining a substantial share of the variance found in the source study, with communication skill carrying the largest individual effect. This suggests that employability in the Nigerian vocational context is not determined by technical competence alone; transferable, behavioural competencies — communication in particular — appear to exert an outsized influence relative to the other two predictors measured.

Root Causes of the Skills Gap

Table 4: Root Causes of the Skills Gap Identified Across Reviewed Studies

S/N	Identified Cause	Source
1	Outdated curricula	Ayaegbunem, Kanu & Aja (2026)
2	Inadequate modern equipment	Ayaegbunem, Kanu & Aja (2026)
3	Weak industry–institution cooperation	Ayaegbunem, Kanu & Aja (2026); Chiamogu & Chiamogu (2026)
4	Insufficient practical exposure / limited instructional time for practice	Ayaegbunem, Kanu & Aja (2026); Chiamogu & Chiamogu (2026)
5	Limited lecturer industrial experience	Ayaegbunem, Kanu & Aja (2026)
6	Inadequate funding	Ayaegbunem, Kanu & Aja (2026)
7	Insufficient duration of industrial attachment	Ayaegbunem, Kanu & Aja (2026)
8	Epistemic hierarchy privileging theory over applied knowledge	Chiamogu & Chiamogu (2026)
9	Mutual distrust between academia and industry	Chiamogu & Chiamogu (2026)
10	'Reform mimicry' — formal adoption without substantive implementation (e.g., SIWES)	Chiamogu & Chiamogu (2026)

Table 4 shows that the causes identified across the two Nigeria-focused studies fall into three clusters: resource-level causes (outdated curricula, inadequate equipment and funding), relational/governance causes (weak cooperation, distrust, reform mimicry), and exposure-level causes (insufficient practical time, limited lecturer industry experience, short attachment duration). No single cause dominates; rather, the table indicates that the skills gap is over-determined, arising from the combined operation of resourcing, governance and exposure deficits rather than any one correctable factor.

DISCUSSION

This section discusses the data presented above in relation to the study's three theoretical frameworks, its objectives, and the broader trajectory of Nigerian TVET, moving beyond the narrow, table-level interpretations already offered.

The Structural Nature of the Gap

Tables 1 and 4, taken together, indicate that Nigeria's vocational skills gap is structural rather than incidental. The near-uniform shortfall across nine competency domains in Table 1, combined with the resourcing, governance and exposure causes catalogued in Table 4, sits uneasily with any account that treats the gap as a temporary lag fixable through isolated curriculum tweaks. Viewed through Human Capital Theory, this pattern implies that a substantial share of Nigeria's investment in vocational training is currently yielding diminished returns, because the relevance condition on which the theory's productivity gains depend is not being met across most of the surveyed domains. Viewed through the Triple Helix Model, the governance-level causes in Table 4 weak industry–institution cooperation and 'reform mimicry' in particular indicate that the third leg of the model, sustained industry participation in curriculum governance, remains the weakest link; this match Chiamogu and Chiamogu's (2026) description of Nigerian TVET governance as informal and inconsistently enforced.

Employability Skills as a Distinct, Trainable Domain

Table 3 shows that technical competence alone does not explain employability outcomes; communication, stored information and selective exposure all behavioural rather than purely technical competencies carry an independent and, in communication's case, dominant contribution. This fits Social Cognitive Theory's emphasis on observation, self-

efficacy and self-regulation as mechanisms of skill acquisition: these are exactly the mechanisms activated by structured, mentored exposure to competent practitioners, rather than by classroom instruction on its own. The practical implication is that closing the technical gap documented in Table 1 without a parallel, deliberate investment in communication and information-management pedagogy would close only part of the employability gap; the two need to be pursued together.

Emerging and Future Skill Pressures

The indicators in Table 2, read alongside the theoretical framework, point to a widening rather than a static gap. The scale of the digital-skills shortfall (over 85%) relative to broader job-readiness (≈60%) and unemployment (6.5%) figures suggests that digital and Industry 4.0 competencies — artificial intelligence, robotics, digital manufacturing and cyber-physical systems — make up the fastest-moving component of employer expectations, and one that Nigerian TVET curricula have barely begun to absorb. This carries three further implications for the skills vocational education should prioritise over the coming decade. First, digital literacy, basic data handling, automation awareness and human–machine collaboration should be treated as core, examinable competencies built into all vocational trades, not confined to information-technology-specific programmes.

Second, given that roughly 60% of TVET graduates already find employment or self-employment (Table 2, Row 2) relative to weaker outcomes reported for more theory-oriented programmes, curricula that deliberately build entrepreneurial competence business planning, digital marketing, micro-finance literacy and product costing are likely to yield a real employability premium as formal-sector job creation continues to trail graduate output. Third, because automation tends to displace routine technical tasks while leaving communication, judgement and adaptive problem-solving comparatively untouched, the predictors identified in Table 3 are likely to grow rather than shrink in relative importance, reinforcing the case for their deliberate, explicit cultivation. A related and still-emerging pressure is sustainability-linked competence energy efficiency, renewable-technology maintenance and environmentally compliant production practice — for which Nigerian-specific evidence remains limited, but for which workshop safety and compliance (Table 1) already rank among the technical competencies industries value most, suggesting a plausible foundation on which green-skills content could be built as Nigeria's energy transition gathers pace.

Taken as a whole, the evidence indicates that Nigeria's vocational skills gap is simultaneously a curriculum-content problem (legacy technical syllabi under-representing digital and emerging technologies), a governance problem (weak, informal and inconsistently enforced industry–academia linkages), and a human-development problem (insufficient deliberate cultivation of communication, information-management and adaptive-learning skills). A recurring finding that cuts across the tables visible in the causes catalogued in Table 4 and consistent with the theoretical discussion above is that practical, industry-exposed training time is systematically under-provided relative to theoretical instruction. A forward-looking policy response must therefore act on curriculum content, institutional governance and instructional-time allocation at the same time, rather than treating any single lever as sufficient on its own. The policy framework proposed in Section 6 is organized around this three-level diagnosis.

Toward a Future-Oriented Policy Framework

Building on the governance-oriented recommendations advanced in recent Nigerian TVET scholarship (Chiamogu & Chiamogu, 2026) and the more skills-specific recommendations from industrial-technology-education and employability-skills research

(Ayaegbunem et al., 2026; Akindele & Olabimtan, 2023), this paper proposes an integrated, forward-looking policy framework organised around the following priorities, each directly responsive to the data presented in Section 4 and discussed in Section 5.

Institutionalized industry advisory boards - Every vocational institution should host a standing advisory board with substantial (at least 40 percent) industry representation, meeting quarterly to review curriculum relevance against current and anticipated labour-market needs, with statutory backing through regulatory accreditation guidelines.

Co-designed, future-proofed curricula. Curriculum content should be jointly authored by academic and industry experts on a near-parity basis, explicitly incorporating digital literacy, automation awareness, entrepreneurship and, where relevant, industry-recognised technical certifications, alongside periodic horizon-scanning to anticipate emerging technology domains.

Dual training and expanded work-based learning - Nigeria should move toward a structured dual-training model that allocates the majority of instructional time to supervised industrial practice, addressing the well-documented supervision and coordination weaknesses of the existing SIWES framework.

National skills forecasting capacity - A dedicated skills-intelligence function, coordinating labour-market data from regulatory, statistical and labour-ministry sources, should generate periodic forecasts of emerging skills demand to inform curriculum review cycles proactively rather than reactively.

Lecturer industry immersion - Regular, mandated industrial attachment for vocational lecturers is essential so that classroom instruction reflects current, rather than historical, industrial practice.

Deliberate cultivation of transferable employability skills - Communication training, information-literacy instruction and structured, mentored workplace exposure should be explicitly built into and assessed within vocational curricula, rather than assumed to develop on their own alongside technical instruction.

Operationalizing this framework would shift Nigerian vocational education away from a supply-driven model oriented around what institutions currently happen to teach toward a demand-responsive, anticipatory model oriented around what the labour market will actually require. Achieving this shift will demand sustained regulatory enforcement, dedicated funding instruments and, most fundamentally, a change in the institutional culture that currently treats industry engagement as peripheral rather than central to vocational education's core mission (Chiamogu & Chiamogu, 2026).

Conclusion

The evidence reviewed and tabulated in this paper indicates that Nigeria's vocational skills gap is a multidimensional problem combining curriculum obsolescence, weak and informal industry–academia collaboration, and insufficient deliberate cultivation of transferable employability skills such as communication, stored knowledge and selective exposure. These findings hold across institutional contexts from university-based industrial-technology education to polytechnic curriculum governance to survey-based assessments of employability determinants pointing to a structural problem rather than one confined to a particular programme or locality.

Crucially, the accelerating spread of digital, automation and green technologies means the skills gap is unlikely to stay fixed in size; without deliberate, anticipatory curriculum reform, Nigeria risks a widening gap between what vocational training produces and what a rapidly automating, digitizing and sustainability-conscious economy will demand. Closing this gap sustainably will require Nigeria's vocational education system to move beyond periodic,

compliance-driven curriculum revision toward institutionalized, forward-looking collaboration among vocational institutions, industry and government anchored in Human Capital Theory's emphasis on relevant investment, the Triple Helix Model's emphasis on structured multi-actor collaboration, and Social Cognitive Theory's emphasis on the individual-level mechanisms through which competence is actually built. Only through such an integrated, forward-looking approach can Nigerian vocational education produce graduates equipped not merely for today's labour market, but for the labour market that is emerging.

REFERENCES

Akindele, L. I., & Olabimtan, R. O. (2023). Bridging the knowledge gap in TVET towards employability skills in Nigeria. Ilaro Journal of Humanities and Management (IJOHAM), 3, 38–45.

Aladekoye, O. (2025, June 16). 60% of TVET graduates now employed or self-employed, says FG. The Nigeria Education News.

Alli, W. (2025, March 9). Widening skills gap keeps millions of Nigerians jobless. Business Day.

Anderson, C., Brion, S., Moore, D. A., & Kennedy, J. A. (2020). Leveraging stored information for enhanced decision making. Journal of Applied Psychology, 32(4), 567–582.

Ayaegbunem, C. M., Kanu, M. C., & Aja, C. E. (2026). Bridging the technical skills gap between industry needs and industrial technology education programmes offering in public universities in Nigeria. Unizik Journal of Educational Research, Science and Vocational Studies (UJERSVOCS), 4(1), 319–329.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall.

Becker, G. S. (1964). Human capital: A theoretical and empirical analysis, with special reference to education. Columbia University Press.

Becker, G. S. (1993). Human capital: A theoretical and empirical analysis with special reference to education (3rd ed.). University of Chicago Press.

Chen, W., & Williams, R. (2021). Selective exposure in the age of information overload. Journal of Information Science, 28(3), 409–425.

Chiamogu, A. P., & Chiamogu, U. P. (2026). Bridging the skills gap in Nigeria's technical education sector: The role of industry partnerships in polytechnic curriculum development. Journal of African Innovation and Advanced Studies (JAIAS), 11(2), 333–356.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage Publications.

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and 'Mode 2' to a Triple Helix of university–industry–government relations. Research Policy, 29(2), 109–123.

Gonczi, A., & Hager, P. (2016). Curriculum and assessment design. In Handbook of vocational education and training (pp. 1–22). Springer.

International Labour Organization. (2023). Global employment trends for youth 2023: Investing in transforming futures for young people. ILO.

Kayode, A. (2009, June 2). Bridging the skill gap in Nigeria: Framework for dialogue between university and employers of labour. Keynote address, 24th Conference of the Association of Vice Chancellors of Nigerian Universities, University of Ilorin.

NAN. (2023, August 28). 85% of Nigerian graduates have no digital skills — Report. Pulse Nigeria.

OECD. (2018). Seven questions about apprenticeship: Answers from international experience. OECD Publishing.

Oketch, M. (2007). To vocationalize or not to vocationalize? Perspectives on current trends and issues in technical and vocational education and training (TVET) in Africa. International Journal of Educational Development, 27(2), 220–234.

Okechukwu, S. C. (2025, December 21). Skills gap: When education does not match employment. Great Nigeria Network.

Oviawe, J. I., Uwameiye, R., & Uddin, P. S. O. (2017). Bridging the gap between technical and vocational education and training and the labour market in Nigeria. International Journal of Vocational and Technical Education, 3(1), 7–14.

Oweh, I. (2025, October 14). Youth unemployment rate in Nigeria peaks at 6.5% ILO's research. Independent Newspaper Nigeria.

Roberts, L. D. (2018). Employability skills development in higher education: A systematic review and meta-analysis. Higher Education Research & Development, 37(5), 923–939.

Salami, U. (2026, March 30). 60% of employers say graduates not job-ready — Report. Punch Newspapers.

Schultz, T. W. (1961). Investment in human capital. The American Economic Review, 51(1), 1–17.

Smith, A., & Johnson, B. (2019). The role of communication in knowledge transfer. Journal of Business Communication, 45(2), 89–104.

UNESCO. (2016). Strategy for technical and vocational education and training (TVET) 2016–2021. UNESCO Publishing.

UNESCO. (2023). Skills for work and life: Transforming TVET systems for sustainable development. UNESCO Publishing.

UNESCO. (2024). Recommendation on technical and vocational education and training: Global progress report. UNESCO Publishing.

Uzoagulu, A. E. (2011). Practical guide to writing research project reports in tertiary (2nd ed.). Cheston Ltd.