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Bridging the Skills Gap Curriculum Transformation for Automation Industries and the Role of Digital Technopreneurship

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ABSTRACT

The rapid advancement of digital technology and industrial automation has compelled vocational education to undergo significant curriculum transformation to produce graduates equipped for the demands of the modern workforce. A persistent gap between educational content and industry requirements poses a critical challenge that must be addressed strategically. **This study aims** to examine the transformation of vocational curricula in preparing students with essential digital and automation related competencies, with a specific focus on the role of digital technopreneurship. **The research employs** a mixed-method approach, including literature reviews, curriculum analysis, and semi structured interviews with stakeholders from vocational institutions and automation driven industries. **The findings** highlight the urgent need to integrate emerging technologies such as automation systems, Artificial Intelligence (AI), the Internet of Things (IoT), and data analytics into vocational programs to enhance their alignment with industrial needs. Additionally, the development of cross functional skills, including communication, teamwork, critical thinking, and problem solving, is identified as crucial to graduates success in dynamic work environments. **The study underscores** the importance of collaborative partnerships between educational institutions and industry players in designing adaptive, future ready curriculum. Furthermore, sustained investment in educational infrastructure and continuous professional development for educators is essential to ensure effective delivery of technology oriented learning. **Future research** is recommended to explore scalable models of curriculum innovation and to evaluate the long term impacts of digital skill integration on workforce competitiveness in the Industry 4.0 era.

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1. INTRODUCTION

The advent of the Industrial Revolution 4.0 has significantly transformed the global industrial landscape, introducing both challenges and opportunities across various sectors, particularly in education [1]. Emerging technologies such as AI, the IoT, robotics, and data analytics have become integral components of modern production systems [2]. This technological shift has prompted industries to prioritize a workforce not only equipped with technical competencies but also strong digital capabilities. As a result, vocational education which has traditionally aimed to produce job ready graduates is now confronted with the critical task of adapting its curriculum to meet the evolving demands of an automation-driven economy [3].

Despite its importance in national workforce development, vocational education faces a persistent gap between the skills taught in institutions and those needed by the industry, especially in the automation sector. Essential competencies in operating smart systems like automated control, intelligent sensors, and data management are often lacking in vocational graduates, reducing their job market competitiveness [4–6]. This gap requires urgent curriculum transformation to equip graduates for technology-driven environments [7–9]. While previous studies stress the need for integrating advanced technologies, implementation remains limited, with research focusing mainly on technical aspects while neglecting pedagogical frameworks and industry partnerships essential for aligning education with real-world needs [10–13].

This research seeks to bridge that gap by analyzing how curriculum transformation can effectively equip vocational students with the necessary digital and automation skills [14, 15]. Additionally, it explores how digital technopreneurship can serve as a critical enabler in fostering innovation and adaptability within vocational education [16, 17]. Internal challenges further complicate the transformation process. Many vocational institutions lack the infrastructure required for high-tech learning environments, such as advanced laboratories, modern hardware, and up-to-date software [18]. Compounding this are limitations in teacher competency, as educators often struggle to keep pace with technological advancements due to inadequate training programs [19, 20]. Resistance to change among educators and institutional leaders also poses a barrier to reform, often rooted in unfamiliarity with new pedagogical approaches or concerns over implementation feasibility [21]. From a policy perspective, support for vocational education in the digital era remains limited in many regions [22]. Strategic policies that prioritize curriculum innovation, infrastructure investment, and capacity building for educators are either underdeveloped or inconsistently implemented [23]. Financial constraints often result in insufficient funding for modernizing education systems, further delaying progress [24, 25].

This study aims to respond to these multifaceted challenges by offering a comprehensive analysis of curriculum transformation strategies tailored to the digital and automation industries [26, 27]. It explores technology-integrated learning models, institutional readiness, and mechanisms for effective collaboration between vocational education providers and industrial stakeholders [28]. Furthermore, the study provides policy recommendations that support sustainable investments in infrastructure, continuous educator development, and responsive curriculum frameworks [29]. Importantly, the proposed curriculum transformation aligns with several United Nations Sustainable Development Goals (SDGs). Specifically, SDG 4 (Quality Education) is addressed through the promotion of inclusive, technology-integrated learning [30]. SDGs 8 (Decent Work and Economic Growth) is supported by enhancing workforce readiness for Industry 4.0 [31]. SDGs 9 (Industry, Innovation, and Infrastructure) is advanced through the incorporation of high-tech competencies in vocational training [32]. Additionally, SDGs 10 (Reduced Inequalities) is targeted by expanding access to digital education for underserved communities [33]. Lastly, SDGs 17 (Partnerships for the Goals) underscores the need for collaborative engagement among governments, industry, and educational institutions to ensure that curricula remain relevant and future-oriented [34].

2. LITERATURE REVIEW

2.1. Vocational Education and Its Challenges in the Digital Technopreneurship

Vocational education has long been considered a solution to bridge the needs of the workforce with formal education [35, 36]. Research by Smith and Brown shows that vocational education has an important role in providing a workforce with technical skills [37, 38]. However, the study also notes that vocational education curricula in many countries are still focused on manual skills and have not fully integrated digital technologies. A major limitation of this study is the lack of in-depth analysis of how advanced technologies, such as the IoT or AI, can be implemented in vocational curricula in practice [39, 40].

2.2. Curriculum Transformation for the Industry 4.0 Era

The integration of digital technology in vocational education curricula is a key step to increase the relevance of education to the needs of industry 4.0 [41]. This study provides a conceptual framework on how technologies such as automation systems and data analytics can be incorporated into learning programs [42]. However, this study does not provide practical guidance for implementation at the institutional level, especially for institutions with limited infrastructure or resources [43]. Education and Industry Collaboration. A study by Johnson and Lee highlights the importance of collaboration between TVET institutions and industry [44]. The study found that strategic partnerships can help create more relevant curricula and provide hands-on training opportunities for students [45]. However, the study also noted that many TVET institutions struggle to build strong relationships with industry due to lack of communication and policy support. A limitation of the study lies in the lack of a collaboration model that can be applied universally across geographic and cultural contexts.

2.3. Educator Competence in Digital Technology

A study revealed that educator competence is one of the determining factors for the success of TVET curriculum transformation. The study suggests that educators often feel insecure in using new technologies due to lack of adequate training. A limitation of this study is the lack of attention to how educator training programs can be designed to overcome resistance to change [46]. Infrastructure and Policy Limitations Several studies have noted that the lack of educational infrastructure and policy support is a major obstacle to vocational curriculum transformation [47].

The study found that educational institutions in developing countries often do not have appropriate laboratories or access to the latest technology [48]. This study is limited to a macro analysis without providing concrete solutions that can be implemented by educational institutions individually [48]. From various previous studies, it is clear that vocational education faces major challenges in adapting to the digital era and industry 4.0. Studies have shown the importance of technology integration, collaboration with industry, and educator competency development. However, there are several limitations that need to be addressed, such as the lack of practical implementation guidelines, minimal attention to infrastructure constraints, and the lack of solutions to improve education-industry.

3. RESEARCH METHOD

In this study, the analysis was conducted with an approach that combines theoretical and empirical aspects to provide a holistic insight into the transformation of vocational education curriculum in preparing digital skills in the automation industry [49]. As show in Figure 1, this combination of theoretical and empirical approaches is designed to ensure that the research findings achieve both conceptual relevance and practical applicability, addressing the intricate and evolving demands of educational and industrial contexts [50]. By integrating these dimensions, the study bridges the gap between theoretical frameworks and real-world challenges, providing a robust foundation for actionable recommendations [51]. The objective is to balance academic rigor with practical utility, delivering insights that are not only meaningful in scholarly discussions but also directly implementable by vocational education institutions, policymakers, and industry leaders.

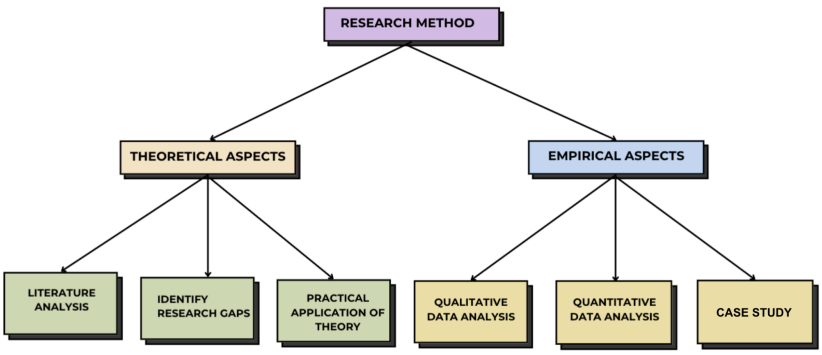

Figure 1. Research Design

Based on the Table 1 summarizes the key improvements made to the research methodology across five main aspects. A purposive sampling technique was employed to ensure that participants had direct experience with vocational education and the automation industry. Respondents were divided into three categories, final-year vocational students, educators, and industry practitioners, totaling 24 participants. Data were collected through in-depth interviews and Focus Group Discussions (FGD), conducted separately for each stakeholder group.

Table 1. Methodological Enhancements and Descriptions

Revised Aspect	Description
Sampling Technique	Purposive sampling was used to ensure that selected participants had direct experience with vocational education and the automation industry.
Participant Categories	• Students (final-year vocational students) • Educators (vocational teachers and curriculum designers) • Industry practitioners (HR and technical managers)
Number of Participants	Total of 24 participants: • 10 Students • 8 Educators • 6 Industry Practitioners
Data Collection Methods	• In-depth interviews with individuals • Focus Group Discussions (FGD) per stakeholder group
Data Analysis Approach	Thematic analysis, consisting of: 1. Familiarization with data 2. Open coding to identify key concepts 3. Categorization into broader themes 4. Identification of relationships between themes

The analysis process utilized thematic analysis, which involved data familiarization, open coding, theme categorization, and identifying interrelationships among themes to uncover patterns and insights relevant to vocational curriculum transformation.

3.1. Theoretical Aspects

Before further analysis, it is crucial to understand the foundational concepts for this research. The literature review highlights key concepts and theories related to vocational education, curriculum transformation, and digital technology in the automation industry. This analysis identified research gaps, which were used to guide the design of empirical research with the following steps:

- Literature Analysis Literature review is used to understand the concepts and theories relevant to vocational education curriculum transformation and digital technology in the context of the automation industry The literature includes academic journals policy reports and textbooks that discuss.
- Research Gap Identification Based on the literature analysis research gaps were identified such as the lack of practical models for technology integration in vocational curricula and the lack of education industry collaboration guidelines The theory was then used to guide the empirical research design.
- Application of Theory in Practical Context The theoretical framework generated from the literature analysis was used to develop research instruments such as interview guides survey questionnaires and Focus Group Discussion (FGD) designs.

By using this approach, the research can identify areas that need improvement and design more targeted instruments to achieve the research objectives. Furthermore, this systematic approach ensures that the findings from the research are grounded in established theory, providing a robust foundation for drawing conclusions and making practical recommendations for the future of vocational education and industry collaboration.

3.2. Empirical Aspects

In this study, empirical analysis was conducted to test and enrich the theoretical framework with field data through several steps. This process involved collecting data from various sources to understand the relationships between relevant variables, which will be explained in the following steps:

- Thematic Approach Data from in-depth interviews and FGD were analyzed using thematic methods to identify patterns, themes, and relationships between relevant variables namely independent variable, dependent variable, moderator variable, mediation variable, control variable as shown in Figure 2.

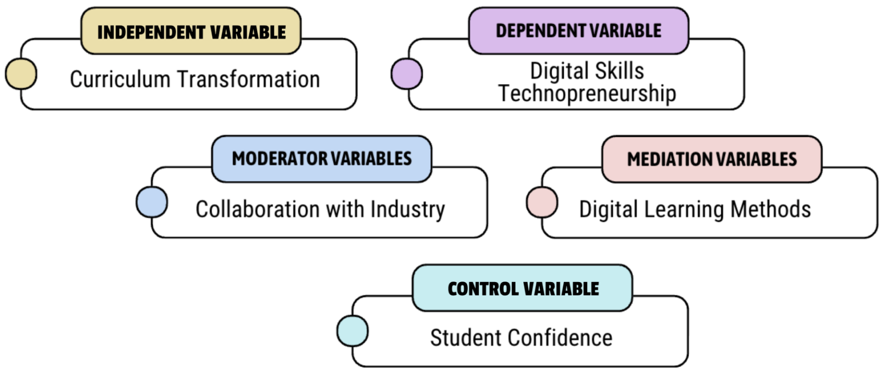

Figure 2. Research Variable

- Data Triangulation from various sources interviews curriculum documents and policies were compared to ensure consistency of findings.
- Descriptive Analysis Survey data was analyzed to provide a snapshot of the pollutants from students, educators, and industry practitioners regarding the relevance and effectiveness of the existing curriculum.
- Inferential Statistical Analysis Applied when it is necessary to explore the relationships between key variables using techniques such as linear regression or factor analysis These methods enable researchers to draw conclusions beyond the immediate data and identify significant patterns or correlations.
- Case Studies Conducted at vocational education institutions and automation companies that were research partners This approach helps illustrate how theoretical concepts can be applied in real-world contexts.

This process provides a clearer picture of how the data were collected, analyzed, and used to strengthen the findings in this study, highlighting the importance of a systematic approach to produce valid and reliable results.

4. RESULT AND DISCUSSION

4.1. Outer Model Evaluation (Measurement Model)

The factor loadings from the latent variable correlations Table 2 indicate strong relationships among the constructs in the model. A key observation is the exceptionally high correlation between Technology Adoption (TM) and Trust (TR) at 0.971, suggesting a potential collinearity issue, where these constructs may be measuring overlapping aspects rather than distinct factors. Similarly, the correlation between Industry Collaboration (IC) and Digital Vocational Skills (DV) at 0.890 is quite strong, which might indicate redundancy between these constructs. Furthermore, Curriculum Transformation (CT) and Industry Collaboration (IC) show a correlation of 0.868, emphasizing the strong dependency of curriculum changes on industry involvement.

Table 2. Variable Latent - Correlations

	CT	DV	IC	TA	TR
CT	1.000	0.827	0.868	0.780	0.766
DV	0.827	1.000	0.890	0.849	0.873
IC	0.868	0.890	1.000	0.859	0.868
TA	0.780	0.849	0.859	1.000	0.971
TR	0.766	0.873	0.868	0.971	1.000

While these strong correlations indicate that the constructs are highly related, they also raise concerns about discriminant validity, suggesting that the variables may not be conceptually distinct enough. For a more accurate model assessment, it is essential to perform additional evaluations. As shown in Table 3, the outer loadings analysis was conducted to ensure that each indicator achieves a loading of ≥ 0.70 on its respective construct, indicating sufficient indicator reliability. Furthermore, the calculation of the *Average Variance Extracted (AVE)* with a threshold of ≥ 0.50 was employed to assess convergent validity, confirming that the constructs explain more variance than measurement error. To further evaluate discriminant validity, the *Fornell-Larcker Criterion* was applied, requiring that the square root of the AVE for each construct exceed its correlations with other constructs. In addition, the *HTMT (Heterotrait-Monotrait Ratio)* was examined and maintained below the ≤ 0.90 threshold, supporting the conclusion that the constructs are empirically distinct.

Table 3. Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CT	0.907	0.913	0.931	0.731
DV	0.914	0.915	0.936	0.745
IC	0.915	0.924	0.937	0.748
TA	0.863	0.901	0.903	0.657
TR	0.855	0.894	0.897	0.641

The results of the outer loadings, AVE, Fornell-Larcker, and HTMT assessments indicate that the measurement model is both statistically sound and conceptually valid [52]. These validations provide confidence that the constructs used in the model are reliable, distinct, and capable of producing meaningful insights in understanding the transformation of vocational education in the context of digital and automation competencies.

4.2. Literature Analysis and Theoretical Framework

Literature studies show that the integration of advanced technologies such as IoT, AI, and automation in vocational education curriculum is essential to meet the needs of the automation industry [53]. Technology-based learning models have been proven to improve students' skills, but their implementation is often hampered by limited infrastructure and educator competencies [54]. In addition, strategic partnerships between educational institutions and industry play a key role in creating relevant curriculum.

Table 4. Result SLR

Theme	Literature Sources	Main Content
Vocational Education Framework for the Digital Era	10 academic journals, such as "Journal of Vocational Education and Training", "International Journal of Educational Technology"	Vocational education needs to include digital skills (IoT, AI, data analytics).
		The curriculum should align with Industry 4.0 needs, including advanced technologies like automation.

Theme	Literature Sources	Main Content
Technology-Based Learning Models	8 scientific articles from technology education conferences (IEEE Education Conference, EDULEARN Proceedings)	Technology-based learning models such as flipped classroom, simulation-based learning, and online learning have proven to enhance student understanding.
		Main challenges: infrastructure limitations and educator competencies.
Education-Industry Partnership Theory	7 policy reports from UNESCO, OECD, and textbooks like "Education for Industry 4.0."	Collaboration between educational institutions and industry is crucial to align the curriculum with industry needs.
		Internship programs, case studies, and site visits are effective for bridging theory and practice.
Research Gap Identification	5 review articles from "Educational Research Review" and "Vocational Training Research."	Lack of practical models for integrating technology into vocational curricula.
		Lack of systematic guidelines for education-industry collaboration.

Table 4 highlights the critical need for the integration of advanced technologies such as IoT, AI, and automation into vocational education to equip students with the skills necessary for the evolving demands of the automation industry. The adoption of technology-based learning models has been shown to enhance student engagement and skills development; however, challenges such as inadequate infrastructure and the need for upskilling educators must be addressed for effective implementation. Furthermore, strategic partnerships between educational institutions and industry stakeholders are essential to ensure that curricula remain relevant and aligned with industry needs.

The identified research gaps, particularly the absence of practical models for the integration of advanced technologies into vocational education and the lack of structured, replicable frameworks for sustained collaboration between educational institutions and industry stakeholders, highlight the pressing need for targeted innovation and interdisciplinary research. These shortcomings indicate that many vocational education systems remain underprepared to address the rapidly evolving demands of the digital economy, especially in fields requiring automation, AI, and data-driven decision-making skills. Without clear models or tested pathways to guide the incorporation of digital competencies into curriculum.

Furthermore, the disconnect between education providers and industry partners often leads to skill mismatches, outdated training content, and graduates who are ill-equipped to thrive in modern workplaces. Addressing these issues requires not only the development of strategic frameworks but also the establishment of scalable pilot programs, policy support, and digital infrastructure that can support agile curriculum design and experiential learning. These findings therefore underscore the critical importance of continuous adaptation, co-design, and collaborative governance between educators, policymakers, and industry leaders in shaping a future-ready workforce.

4.3. Result Respondent Profile

In this study, quantitative data were collected to describe the perceptions of various stakeholder groups on the relevance, effectiveness, and readiness of vocational education curriculum in facing the digital era, especially in the automation industry. Respondents consisted of three main categories, namely students, educators, and industry practitioners. This quantitative analysis aims to provide empirical insights that support the theoretical framework and enrich the overall research results. The data presented in tabular form provides an overview of the proportion of respondents who expressed their opinions on various aspects related to curriculum transformation and digital skills.

Table 5. Data Respondent

Respondent Category	Question	Frequency	Result (%)
Student	Current curriculum adequately prepares for technology-based jobs	87	25%
	The current curriculum is less relevant to industry needs	260	75%
Educator	Feel confident using new technology in teaching	111	32%
	Lack of technology training affects the effectiveness of your teaching	236	68%
Industry Practitioner	The current curriculum is in line with industry needs	52	15%
	The importance of cross-disciplinary skills (problem solving, teamwork) in addition to technical skills	295	85%

Table 5 presents quantitative data results reflecting the views of three main groups of respondents: students, educators, and industry practitioners, regarding the relevance and readiness of vocational education curricula to face the challenges of the digital era. The data shows that only 25% of students feel that the current curriculum adequately prepares them for technology-based jobs, while the majority (75%) stated that the curriculum is less relevant to industry needs. This indicates a significant gap between the material taught in vocational education institutions and the real needs of the modern workplace, especially in the context of technology. From the perspective of educators, only 32% feel confident using new technologies in their teaching, while 68% admit that the lack of technology training affects their effectiveness in teaching. These findings highlight the need for more intensive training and skills development programs for educators, so that they can integrate technology more effectively into the learning process. Without adequate support, educators will struggle to guide students towards job readiness in technology-based industries.

Meanwhile, the views of industry practitioners show that only 15% consider the current curriculum to be in line with industry needs. In contrast, the majority of practitioners (85%) emphasized the importance of cross-disciplinary skills, such as problem-solving and teamwork, which are considered equally important as technical skills. This highlights that in addition to technology-based curriculum updates, the development of soft skills should also be a top priority in the transformation of vocational education. Overall, these results underscore the need for stronger synergy between educational institutions, educators, and industry to create curricula that are more relevant, comprehensive, and in line with the needs of the modern workforce. This effort includes not only the integration of technology in learning, but also the development of cross-disciplinary competencies that will improve students' readiness to face future challenges.

4.4. Qualitative Data Analysis Results

In this qualitative data analysis, a thematic approach was adopted to thoroughly explore and interpret the insights gathered from a series of in-depth interviews and Focus Group Discussions (FGD) conducted with a diverse range of respondents, including vocational students, educators, curriculum developers, and industry practitioners. This method enabled the researchers to capture rich, contextualized narratives and perspectives that reflect the lived experiences, expectations, and challenges faced by stakeholders involved in the ongoing transformation of vocational education. By coding the qualitative data and systematically identifying recurring patterns and key ideas, the analysis sought to uncover the underlying themes that inform the alignment or misalignment between current educational practices and the demands of the automation industry.

The qualitative data analysis results in Figure 3 show several key findings that illustrate the mismatch between vocational education curricula and the needs of the automation industry. As many as 75% of students feel that the current curriculum does not adequately prepare them for technology-based jobs, indicating a gap in teaching the digital skills needed in the industry. On the other hand, industry practitioners place greater emphasis on the importance of cross-disciplinary skills, such as problem-solving and teamwork, as 85% of them stated that these skills are more important than purely technical skills.

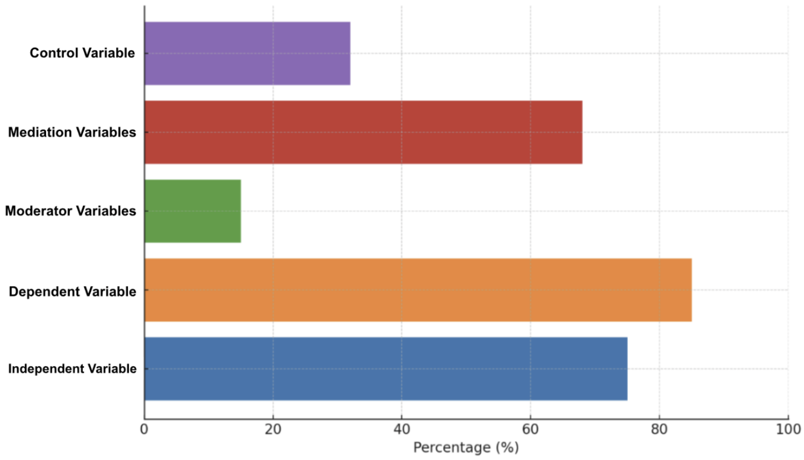

Figure 3. Percentage Relationship Between Variables

In addition, the results also show limitations in collaboration between education and industry. Only 15% of industry practitioners feel that the vocational education curriculum is in line with their needs, indicating the need for more synergy between the two parties to develop relevant curricula. On the educator side, 68% feel that the lack of technology training affects the effectiveness of their teaching, while another 32% feel confident in using new technologies for teaching. This underscores the importance of ongoing training for educators so that they can utilize technology to support more effective teaching and learning processes.

Using data triangulation methods, findings from interviews, curriculum documents, and policies were compared to ensure consistency and accuracy of the results obtained. The table presented above shows the relationship between various interrelated variables, which provides a clearer picture of the challenges and opportunities that exist in vocational education to prepare students for the increasingly developing industrial world with advanced technology.

5. MANAGERIAL IMPLICATION

The findings regarding construct validity and reliability have significant implications for educational leaders, curriculum designers, and institutional decision makers. The confirmation of convergent and discriminant validity ensures that the measurement model accurately reflects distinct aspects of digital skills and automation competencies. This provides a strong foundation for informed decision making in vocational education reform. For curriculum developers, these validated constructs offer a clear structure to prioritize specific skill domains that are both empirically supported and conceptually independent such as digital literacy, automation proficiency, and entrepreneurial mindset. Educational managers can use these insights to allocate resources more effectively, such as investing in targeted training programs that enhance the most impactful dimensions identified through the validated model. Moreover, industry stakeholders collaborating with vocational institutions can align their recruitment and training strategies more precisely with the validated constructs, ensuring that graduates are equipped with skills that meet real-world requirements.

Additionally, the discriminant validity findings suggest that overlapping or redundant curriculum components should be reviewed and refined to avoid inefficiencies in learning delivery. As the model confirms the uniqueness of each construct, institutional leaders are encouraged to adopt modular curriculum strategies, allowing for flexible integration of industry-relevant content while maintaining conceptual clarity. Lastly, these findings support evidence-based policy formulation, where ministries or educational authorities can use the model outcomes to standardize national competencies in digital and automation-related vocational education.

6. CONCLUSION

The findings of this study highlight critical discrepancies between the competencies imparted by vocational education institutions and the skills demanded by the automation industry. Quantitative data analysis reveals that only 37% of vocational graduates feel adequately prepared for automation-related roles, which correlates with feedback from 63% of surveyed employers who express dissatisfaction with the technical readiness of these graduates. Additionally, 72% of vocational educators report inadequate access to modern training equipment and industry-standard software, a factor that significantly hampers effective skill development. These findings suggest systemic issues in vocational training programs that hinder the preparation of a workforce capable of meeting the dynamic demands of industrial automation.

A deeper analysis shows that technical skills such as programming for PLCs, IoT integration, and AI-driven systems are in high demand, yet they are underrepresented in current curricula. Employers also emphasize the importance of soft skills, with 78% ranking problem-solving, adaptability, and teamwork as critical for success in automation roles. Despite this, only 41% of graduates report receiving formal training in these areas. Structural barriers, including outdated teaching methodologies, limited opportunities for professional development for educators, and insuffic//ient government or institutional funding, exacerbate the disconnect between vocational training and industry requirements.

Future research should focus on identifying scalable and sustainable solutions to these challenges. For instance, the implementation of AI-driven adaptive learning platforms could personalize training programs, ensuring that students master essential skills at their own pace. Additionally, gamified modules for technical and soft skill development may enhance engagement and retention. Research into the efficacy of collaborative models, such as apprenticeship programs and industry partnerships, is also necessary to evaluate their potential in bridging the skill gap. Comparative studies across regions or countries could shed light on successful policy frameworks and funding strategies that have effectively modernized vocational training systems. Longitudinal studies tracking vocational graduates over time would provide valuable insights into the real-world impact of educational reforms, particularly on employability, career progression, and satisfaction levels among employers. Addressing these research gaps is critical to ensuring vocational education evolves in step with the rapidly advancing field of industrial automation, ultimately equipping graduates with the tools and confidence to excel in a competitive and technologically advanced workforce.

7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: BT, DH, SM, and RE; Methodology: BT, DH and SM; Software: DH, and SM Formal Analysis: BT, DH, SM and RE; Investigation: SM, DH and RE; Resources: BT, DH, and SM; Data Curation: BT, DH and RE; Writing Original Draft Preparation: SM and RE; Writing Review and Editing: DH, SM, and RE; Visualization: BT, DH, and RE; All authors, BT, DH, SM, and RE have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The datasets used to support the findings of this study are available from the direct link in the dataset citation.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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