

From Classroom to Catwalk: How Teaching Factory Management Cultivates Student Entrepreneurship and Career Readiness

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DOI: <http://doi.org/10.33650/al-tanzim.v10i4.14737>

Received: 07 March 2026

Revised: 20 June 2026

Accepted: 29 July 2026

Abstract:

This study aims to describe the implementation of Teaching Factory (TEFA) in increasing entrepreneurial interest and work readiness of students in the fashion design expertise program. This research is motivated by the gap between the competencies of Vocational High School graduates and the needs of the Business World and Industry, especially in the creative fashion industry sector. The novelty of this research lies in the study of TEFA implementation through a qualitative case study approach that integrates the theories of Experiential Learning, Constructivism, and Work-Based Learning in the simultaneous development of entrepreneurial competencies and student work readiness. This study uses a qualitative method with a case study design. The research subjects consisted of school principals, vocational teachers, students, and industry partners. Data were collected through in-depth interviews, participant observation, and documentation, then analyzed using the Miles and Huberman interactive model with data validation through triangulation. The results of the study indicate that TEFA implementation is carried out through an industry-standard production process, from planning and product manufacturing to marketing. This program contributes to improving students' technical skills, work ethic, self-confidence, work readiness, and entrepreneurial interest. Supporting factors include school support, teacher competence, industry partnerships, and learning facilities, while the main barriers are limited learning time and differences in industry work standards.

Keywords: *Teaching Factory, Vocational Education, Student Entrepreneurship, Work Readiness*

Abstrak:

Penelitian ini bertujuan untuk mendeskripsikan implementasi Teaching Factory (TEFA) dalam meningkatkan minat kewirausahaan dan kesiapan kerja siswa pada program keahlian desain busana. Penelitian ini dilatarbelakangi oleh adanya kesenjangan antara kompetensi lulusan Sekolah Menengah Kejuruan (SMK) dengan kebutuhan Dunia Usaha dan Dunia Industri (DUDI), khususnya pada sektor industri mode kreatif. Kebaruan penelitian ini terletak pada kajian implementasi TEFA melalui pendekatan studi kasus kualitatif yang mengintegrasikan teori Pembelajaran Eksperiensial, Konstruktivisme, dan Pembelajaran Berbasis Kerja dalam pengembangan kompetensi kewirausahaan dan kesiapan kerja siswa secara simultan. Penelitian ini menggunakan metode kualitatif dengan desain studi kasus. Subjek penelitian terdiri atas kepala sekolah, guru vokasi, siswa, dan mitra industri. Data dikumpulkan melalui wawancara mendalam, observasi partisipatif, dan dokumentasi, kemudian dianalisis menggunakan model interaktif Miles

dan Huberman dengan validasi data melalui triangulasi. Hasil penelitian menunjukkan bahwa implementasi TEFA dilaksanakan melalui proses produksi berbasis standar industri, mulai dari perencanaan, pembuatan produk, hingga pemasaran. Program ini berkontribusi dalam meningkatkan keterampilan teknis, etos kerja, kepercayaan diri, kesiapan kerja, dan minat kewirausahaan siswa. Faktor pendukung meliputi dukungan sekolah, kompetensi guru, kemitraan industri, dan fasilitas pembelajaran, sedangkan hambatan utama berupa keterbatasan waktu pembelajaran dan perbedaan standar kerja industri.

Kata Kunci: *Teaching Factory, Pendidikan Vokasi, Kewirausahaan Siswa, Kesiapan Kerja*

Please cite this article in APA style as:

Handayani, R., Kusumaningsih, W., & M., N. A. N. (2026). From Classroom to Catwalk: How Teaching Factory Management Cultivates Student Entrepreneurship and Career Readiness. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 10(4), 1229-1244.

INTRODUCTION

Vocational education plays a strategic role in strengthening national competitiveness by preparing graduates with technical competence, adaptability, and entrepreneurial capability required in rapidly changing labour markets (Ajeniwani et al., 2024; Massi et al., 2026). The advancement of Industry 4.0, digital manufacturing, and industrial transformation has increased expectations that vocational schools should produce graduates who are not only job-ready but also capable of creating employment through entrepreneurship (Ahmad, 2025; Negi et al., 2026). However, vocational education continues to face criticism because graduate competencies often remain misaligned with industrial expectations. This mismatch affects labour productivity, economic development, and employment opportunities, particularly in developing countries where vocational education is expected to reduce youth unemployment (Alam et al., 2024; Paramole & Adeoye, 2024). Consequently, improving vocational learning quality has become an educational and economic priority. Developing authentic learning models that integrate industrial practice with entrepreneurial competence is therefore essential for producing graduates who are innovative, resilient, competitive, and capable of responding effectively to evolving workplace demands (Prokopenko et al., 2024; Seevaratnam et al., 2023).

Despite its employment-oriented mission, vocational education continues to experience low graduate employability. Statistics Indonesia (BPS, 2024) reported that Vocational High School (SMK) graduates had the highest open unemployment rate in Indonesia, at 8.6%, exceeding all other educational levels (Nurhaini, 2024; Pritadrajati et al., 2024). This situation reflects a persistent mismatch between competencies developed in vocational schools and labour market requirements. Previous studies have identified limited entrepreneurial orientation, inadequate soft skills, weak adaptability, and insufficient professional work ethic as major obstacles to graduate employment (Doan & Vu, 2026; Iwara, 2025). As industries increasingly require collaboration, problem-solving, innovation, and communication skills alongside technical competence, vocational education must move beyond conventional classroom instruction toward authentic learning environments that integrate industrial experience with entrepreneurship development (Ikenga & van der Sijde, 2024; Mohammed & Ozdamli, 2024). Such transformation is necessary to improve graduates'

employability and strengthen their readiness to compete in dynamic labour markets.

These challenges are particularly evident in Kendal Regency, where the unemployment rate reached 5.01%, exceeding the provincial average despite the presence of the Kendal Industrial Estate, one of Central Java's largest industrial investment centres (Manasika & Purnomosidi, 2025). This paradox indicates that industrial expansion alone cannot guarantee graduate employment without vocational education aligned with workplace expectations. Employers increasingly demand graduates possessing practical experience, discipline, communication skills, adaptability, and entrepreneurial initiative alongside technical competence (Lisah & Baharun, 2025; Urbancikova & Umarkhonov, 2024). These conditions highlight the need for vocational learning models that bridge schools and industry through authentic production experiences. In response, the Indonesian government has promoted the Teaching Factory (TeFa). This production-based learning model simulates industrial processes within schools while strengthening students' employability, entrepreneurial competence, and readiness for professional careers (Sutianah et al., 2024; Tanjung et al., 2025; Widiatna et al., 2025).

Teaching Factory (TeFa) has become a widely adopted approach for strengthening the alignment between vocational education and industrial needs (Imran et al., 2024; Widiatna et al., 2025). Based on Kolb's Experiential Learning Theory (2020), TeFa emphasizes learning through authentic production activities that enable students to develop knowledge, technical skills, and professional attitudes by participating directly in industrial processes (Widoyoningrum, 2025). In Indonesia, TeFa implementation is supported by Presidential Instruction No. 9 of 2016, Minister of Education and Culture Regulation No. 34 of 2018, and the Directorate General of Vocational Education Guidelines (2022) (Isbah et al., 2026). Students participate in complete production cycles, including receiving customer orders, production planning, manufacturing, quality control, marketing, and performance evaluation (Gupta et al., 2025). Consequently, Teaching Factory is increasingly recognized as an effective production-based learning model for reducing competency gaps while simultaneously strengthening entrepreneurial competence, employability, and collaboration between vocational schools and industry (Muharam et al., 2025; Sudarsono et al., 2026).

Previous empirical studies consistently demonstrate the positive contribution of Teaching Factory to vocational education. Anggitan (2024) found that Teaching Factory significantly improves students' work readiness by strengthening adaptability to organizational change, while Hasanah (2024) reported that integrating Teaching Factory with entrepreneurship education enhances entrepreneurial readiness (Anggitan, 2025; Langan et al., 2026). Likewise, Giatman (2026) showed that Teaching Factory supports curriculum alignment with industrial standards, teacher competency development, facility modernization, and students' practical skills (Janani et al., 2026). More recently, Junelti et al. (2026) concluded that Teaching Factory strengthens graduate employability through effective school-industry collaboration (Junelti et al., 2026). However, most previous studies rely on quantitative approaches that emphasize

learning outcomes while offering limited insight into how the Teaching Factory is planned, organized, implemented, and evaluated. Consequently, evidence on institutional management, stakeholder experiences, collaborative processes, and contextual challenges that support sustainable Teaching Factory implementation remains insufficient.

This study addresses these limitations by investigating the implementation of Teaching Factory in the Fashion Design Department of SMK Negeri 5 Kendal through a qualitative case study approach. Unlike previous studies focusing primarily on statistical relationships, this research examines program planning, organizational governance, industrial collaboration, production management, learning implementation, evaluation mechanisms, and contextual challenges experienced by school leaders, teachers, students, and industry partners. Collaboration between SMK Negeri 5 Kendal and PT AOI Central Java provides an authentic industrial environment where students produce workwear according to industrial standards and customer requirements. This setting offers valuable opportunities to understand how Teaching Factory simultaneously develops technical competence, entrepreneurial interest, professional work attitudes, and employment readiness. Accordingly, this study provides a comprehensive understanding of Teaching Factory implementation within Indonesian vocational fashion education.

Based on these considerations, this study addresses the following research question: How is the Teaching Factory planned, organized, implemented, and evaluated to enhance entrepreneurial interest and employment readiness among Fashion Design students at SMK Negeri 5 Kendal? This study argues that effective Teaching Factory implementation depends on systematic school-industry collaboration, authentic production-based learning, institutional readiness, and continuous evaluation rather than industrial practice alone. By examining the perspectives of school leaders, teachers, students, and industry partners, this research provides a comprehensive understanding of how the Teaching Factory contributes to improving the quality of vocational education. The findings are expected to enrich vocational education literature while offering practical recommendations for policymakers, vocational schools, and industry partners to strengthen sustainable collaboration and produce graduates who are entrepreneurial, competent, and industry-ready.

RESEARCH METHODS

This study employed a qualitative case study design to examine how the Teaching Factory (TeFa) program enhances entrepreneurial interest and work readiness among Fashion Design students. A qualitative approach was selected because the study aimed to explore participants' experiences, perceptions, and interactions within their natural educational environment rather than measure causal relationships statistically. The case study design enabled an in-depth investigation of Teaching Factory implementation in its real-life context, where educational processes and institutional conditions are closely interconnected. Through this approach, the research examined planning, organizing, implementation, evaluation, and school-industry collaboration while capturing

the perspectives of multiple stakeholders. The study was conducted through four interconnected stages: preparation, field data collection, interactive analysis, and report writing.

The research was conducted at the Fashion Design Department of SMK Negeri 5 Kendal, Central Java, Indonesia. The site was purposively selected because the school consistently implements the Teaching Factory through collaboration with PT AOI Central Java, a garment manufacturing company. Students participate directly in authentic industrial activities, including receiving production orders, preparing materials, operating industrial sewing machines, conducting quality control, packaging products, and meeting industrial production standards. This setting provides an appropriate context for examining Teaching Factory implementation in a real production environment. Moreover, Kendal Regency is a strategic vocational education context because it hosts the Kendal Industrial Estate and continues to experience relatively high unemployment among vocational graduates, making it relevant for investigating entrepreneurial development and graduate employability.

Data were collected between February and April 2026 through in-depth interviews, participant observation, and document analysis to ensure methodological triangulation. Participants were selected using purposive sampling and included the Principal, Vice Principal for Curriculum, Head of the Fashion Design Department, Teaching Factory Manager, productive teachers, participating students, and representatives of PT AOI Central Java. Data collection explored program planning, implementation, industrial collaboration, entrepreneurial development, work readiness, and evaluation. Observations were conducted in workshops, production units, classrooms, and collaborative industrial activities. Supporting documents included Teaching Factory guidelines, curriculum documents, production records, partnership agreements, learning modules, and assessment reports. Interviews were audio-recorded with participants' consent, while observations were documented using detailed field notes to strengthen the credibility of the findings.

Data were analyzed using the interactive model of Miles, Huberman, and Saldaña (2018), comprising data condensation, data display, conclusion drawing, and verification (Amin et al., 2024). Data condensation involved selecting, coding, categorizing, and simplifying interview transcripts, observation notes, and documentary evidence into themes relevant to the research objectives. The condensed findings were then presented through thematic matrices, narrative descriptions, and conceptual diagrams to facilitate interpretation across participants and data sources. Finally, conclusions were developed by identifying recurring themes, relationships, and explanatory patterns concerning Teaching Factory implementation. Continuous verification was conducted through iterative comparisons among interviews, observations, documents, and participant feedback until analytical consistency and data saturation were achieved, thereby ensuring the credibility, dependability, and trustworthiness of the research findings.

RESULTS AND DISCUSSION

Results

Planning for the Fashion Design Teaching Factory

Planning for the Teaching Factory (Tefa) in the Fashion Design Department at SMK Negeri 5 Kendal is operationally defined as a systematic managerial process that prepares institutional, physical, financial, and instructional resources before the implementation of industry-based learning. The planning process includes redesigning workshops according to garment industry standards, inventorying and procuring production equipment, scheduling production-based learning, identifying annual production targets, and allocating funds through the School Activity and Budget Plan (RKAS). The Principal explained that workshop preparation became the initial strategic priority by redesigning the production layout, improving lighting, ventilation, and electrical systems, reorganizing equipment to align with production workflows, and calculating the ratio of sewing machines to students. The researcher interprets these planning activities as demonstrating the transformation of a conventional school workshop into an authentic industrial learning environment that supports production efficiency, occupational safety, and students' readiness for industrial practice.

The Head of the Fashion Design Department emphasized that Teaching Factory planning was conducted collaboratively through departmental meetings involving productive teachers to identify operational equipment, determine procurement priorities, establish annual production targets, and prepare RKAS proposals funded through BOS assistance. According to the informant, planning decisions were made collectively to ensure that procurement reflected actual instructional and production needs. The researcher interprets this participatory planning mechanism as evidence-based educational management, in which decisions are grounded in operational realities rather than administrative assumptions. Teacher involvement strengthens the alignment between curriculum implementation, infrastructure development, production objectives, and financial accountability. Consequently, Teaching Factory planning functions not merely as an administrative process but as a strategic management mechanism that ensures institutional readiness and supports the sustainable implementation of industry-based vocational learning.

Furthermore, the planning of the Teaching Factory (Tefa) also involved aligning the production system with the competency standards required by the fashion industry. This alignment was carried out by mapping students' learning competencies, designing production activities that reflected real industry practices, and determining quality control mechanisms for each production stage. The Principal and department management viewed Tefa planning not only as preparation for producing goods but also as a strategy to develop students' entrepreneurial skills, professional attitudes, teamwork abilities, and problem-solving competencies. The researcher interprets this approach as a form of strategic vocational education management that bridges the gap between school-based learning and workplace demands. Through systematic planning, the Teaching Factory becomes an integrated learning model that simultaneously strengthens institutional capacity, improves the relevance of vocational education, and prepares graduates to compete in the dynamic fashion industry.

Organizing Institutional Governance

Organizing institutional governance in the Teaching Factory (Tefa) involves establishing organizational structures, assigning authority, and distributing responsibilities to ensure effective implementation of industry-based learning. The governance system is formalized through the Principal's Decree, which defines roles such as Principal, Tefa Manager, Treasurer, Quality Control (QC), Marketing and Logistics Division, and E-Commerce Promotion Division based on professional competencies. This structure strengthens accountability, coordination, and systematic management of production, finance, quality assurance, and marketing activities. The researcher interprets this governance model as competency-based organizational management that reduces role ambiguity and improves operational effectiveness. The Tefa Manager emphasized that role specialization enables each division to perform specific responsibilities while maintaining coordination throughout production processes. This model reflects manufacturing industry principles, where task distribution according to expertise enhances efficiency, communication, accountability, and workflow coordination. Therefore, institutional governance functions not only as an administrative structure but also as a strategic mechanism supporting sustainable and industry-oriented Teaching Factory implementation.

Table 1. Organizing Institutional Governance

Informant Position	Interview Excerpt	Indicator
Principal	"The Teaching Factory management was established through a Principal's Decree, and each member was assigned responsibilities according to their professional competencies."	Formal governance and competency-based role allocation
Tefa Manager	"Each division performs specialized duties while coordinating continuously to ensure production activities operate efficiently."	Functional specialization and inter-divisional coordination

Table 1 illustrates that two complementary organizational dimensions support institutional governance within the Teaching Factory. The first dimension concerns formal institutional governance, demonstrated by the Principal's emphasis on legal legitimacy through the issuance of the Principal's Decree and competency-based role assignments. This governance mechanism provides organizational clarity by defining the authority, responsibility, and accountability for each management position, thereby strengthening institutional commitment to implementing Teaching Factory activities.

Implementation of Industry-Culture-Based Learning

The implementation of industry-culture-based learning in Tefa translates institutional planning into authentic, industry-oriented learning practices. It encompasses four key components: continuous teacher professional development, industrial collaboration, workshop management, and production-based learning through commercial products. The Head of the Fashion Design Department stated that teachers engage in industrial internships, BNSP competency assessor certification, and upskilling programs to update their industrial knowledge and

align instructional practices with current industry standards. This professional development is interpreted as a crucial factor in maintaining curriculum relevance and enhancing teaching quality. In addition, the Tefa Manager highlighted that industrial partnerships involve product specification development, worksheet validation, guest practitioners, competency assessments, and graduate recruitment. Such collaboration positions industry partners as co-developers in curriculum implementation, production supervision, and quality assurance. Therefore, integrating teacher competency development with industry collaboration establishes an authentic Tefa learning ecosystem that strengthens students' technical competencies, entrepreneurial skills, professional work culture, and employment readiness.

Table 2. Implementation of Industry-Culture-Based Learning

Informant Position	Interview Excerpt	Indicator
Head of Fashion Design Department	"Teachers regularly participate in industrial internships, BNSP certification, and upskilling programs to ensure learning reflects current industrial practices."	Continuous professional development and curriculum alignment
Tefa Manager	"Industry partners participate in product planning, worksheet validation, guest teaching, competency assessment, and graduate recruitment."	Comprehensive industry partnership in Teaching Factory implementation

Table 2 demonstrates that two complementary strategic dimensions support the implementation of industry-culture-based learning. The first dimension concerns human resource development, reflected in continuous teacher participation in industrial internships, professional certification, and competency enhancement programs. These initiatives strengthen teachers' pedagogical and technical capacities while ensuring that vocational instruction remains responsive to technological advancement and industrial transformation. Consequently, professional development serves as the foundation for maintaining curriculum relevance and improving the quality of production-based learning.



Figure 2. Industry-Culture-Based Learning Framework

Figure 2 illustrates the sequential process of industry-culture-based learning implementation within the Teaching Factory. The process begins with continuous teacher professional development through industrial internships, certification, and upskilling programs, which enhance teachers' capacity to deliver industry-oriented instruction. This improvement is strengthened through

collaboration with industrial partners in curriculum validation, production planning, competency assessment, and graduate recruitment. These partnerships support workshop management and equipment readiness to ensure production activities meet industrial standards. The availability of adequate facilities enables students to engage in authentic garment production processes and develop market-oriented products. Ultimately, this process enhances students' entrepreneurial competence and employment readiness, demonstrating that Teaching Factory functions as an integrated learning system connecting teacher competency development, industry collaboration, operational preparedness, and authentic production experiences to improve vocational education outcomes.

Monitoring and Mitigating Deviations

Monitoring and mitigating deviations within the Teaching Factory (Tefa) refers to a systematic control process that ensures production activities, learning implementation, and organizational performance remain aligned with institutional objectives and garment industry standards. This controlling function is carried out through continuous supervision by school management, quality assurance teams, and industry representatives, supported by routine evaluations of production processes, product quality, student performance, facilities, and financial reports. The Principal explained that regular monitoring enables the identification of operational issues and the implementation of corrective actions without disrupting production activities. This approach reflects a proactive quality assurance system emphasizing early detection, rapid response, and continuous improvement. Furthermore, the QC Coordinator highlighted that monthly and quarterly reports are reviewed collaboratively by school management and industry partners to evaluate production achievements, quality standards, equipment conditions, and financial performance. These reporting mechanisms function not only as administrative tools but also as evidence-based decision-making systems that strengthen accountability, improve operational effectiveness, and maintain alignment with industrial expectations. Thus, Tefa's controlling operations operate as an integrated mechanism combining supervision, collaborative evaluation, performance reporting, and corrective action to sustain production quality and program continuity.

Table 3. Findings on Monitoring and Mitigating Deviations

Informant Position	Research Finding	Indicator
Principal	Continuous monitoring is conducted jointly with the internal quality assurance team to evaluate production activities, workshop operations, student performance, equipment utilization, and financial management. Monitoring results are used to identify operational problems and implement immediate corrective actions to maintain production continuity.	Continuous monitoring and corrective action
Quality Control (QC) Coordinator	Periodic production, quality, equipment, and financial reports are systematically reviewed by school management and industrial partners to evaluate performance, verify compliance with industrial standards, and formulate improvement strategies.	Performance reporting and quality assurance

Table 3 demonstrates that two mutually reinforcing dimensions support the controlling function within the Teaching Factory. The first dimension is continuous operational monitoring, reflected in the Principal's commitment to supervising production activities, workshop facilities, student performance, and financial management through routine evaluations. This monitoring system enables school management to detect operational risks early and implement timely corrective measures, thereby minimizing disruptions to production-based learning.

Discussion

The findings demonstrate that the Teaching Factory (TeFa) is organized around four integrated management functions: planning, organizing, actuating, and controlling. This finding is consistent with Artanti (2026), who argues that TeFa develops students' work readiness by exposing them to authentic industrial environments, and with Setiawan et al. (2026), who emphasize curriculum alignment through collaboration between vocational educators and industry (Putri et al., 2026; Setiawan et al., 2026). However, this study extends previous research by demonstrating that the effectiveness of TeFa depends not only on instructional practices but also on the systematic integration of institutional management functions that sustain industry-based learning (Andriani et al., 2026; Sudarsono et al., 2026).

The planning stage confirms that adequate facilities, workshop equipment, and sustainable financial planning are fundamental prerequisites for effective Teaching Factory implementation. These findings support Sutadji (2023), who highlights the importance of industrial-standard equipment in strengthening entrepreneurial competence and production effectiveness (Munandar et al., 2026). Nevertheless, the present study reveals a broader perspective by showing that planning also includes participatory needs assessment, workshop redesign according to industrial workflows, and budget integration through the RKAS. Theoretically, this broadens the concept of vocational planning from infrastructure provision to strategic resource management, while practically providing schools with a structured framework for long-term Teaching Factory sustainability (Hartini et al., 2025; Storonyanska et al., 2025).

The organizing findings indicate that institutional governance significantly contributes to the effective implementation of Teaching Factories through competency-based role allocation, formal organizational structures, and clearly defined responsibilities. While previous studies primarily discuss collaboration among teachers and school leaders, this study demonstrates that governance that adopts industrial-organizational structures improves coordination, accountability, and operational efficiency (Ahlström & Aas, 2024). This finding contributes to theory by positioning organizational governance as a strategic determinant of the quality of vocational education. Practically, it suggests that vocational schools should establish formal governance systems supported by legal authority, explicit job descriptions, and functional specialization to strengthen institutional performance (Green & Koebele, 2025; Schwede et al., 2025).

The implementation findings reinforce previous studies highlighting the importance of human resource development and industry collaboration in vocational education. Consistent with Heriyati (2023), partnerships with industry facilitate curriculum relevance and workforce preparation (Pratama et al., 2025). However, this study expands existing knowledge by demonstrating that implementation also depends on continuous teacher professional development, preventive facility maintenance, and commercially oriented production activities. These interconnected components transform the workshop into an authentic industrial ecosystem rather than merely a practical laboratory. Theoretically, the study advances understanding of the Teaching Factory as an integrated, production-based learning system, while practically guiding schools in developing sustainable industry partnerships and entrepreneurial learning environments.

The controlling function identified in this study aligns with Marsudi (2023), who emphasizes monitoring as an essential management activity for evaluating the implementation of education (Cahyani & Marsudi, 2024). Nevertheless, the present findings reveal that supervision extends beyond administrative evaluation through collaborative quality assurance involving school leaders, internal quality teams, and industry representatives (Rodliyah et al., 2024). Regular progress reports, production monitoring, and immediate corrective actions serve as continuous improvement mechanisms comparable to those in industrial quality management systems (John, 2023). This contributes theoretically by integrating quality assurance principles into vocational education management and practically encourages schools to establish evidence-based monitoring systems that support organizational learning and operational excellence.

Overall, this study contributes by proposing that the effectiveness of Teaching Factory implementation is determined by the integration of planning, organizing, actuating, and controlling within a unified industry-oriented management framework. Unlike previous studies that generally examine individual components of Teaching Factory, this research demonstrates how these management functions interact to create a sustainable vocational education ecosystem. Theoretically, the findings enrich educational management literature by introducing an integrated institutional governance perspective for Teaching Factory implementation. In practical terms, the study offers a comprehensive management model that may serve as a reference for vocational schools seeking to strengthen graduate employability, entrepreneurial competence, and institutional partnerships with industry.

CONCLUSION

This study demonstrates that the successful implementation of the Teaching Factory (Tefa) at school is primarily determined by the integration of the four management functions planning, organizing, actuating, and controlling which collectively create an industry-oriented learning ecosystem that strengthens students' technical competence, entrepreneurial capacity, and work readiness. The most important lesson from this research is that effective vocational education depends not only on industrial facilities but also on systematic institutional

governance, strategic partnerships, and continuous quality assurance. The study contributes theoretically by extending the application of the POAC management framework to Teaching Factory implementation, offering an integrated governance perspective that connects educational management with industry-based vocational learning. Nevertheless, this research is limited to a single qualitative case study in one vocational school, which may restrict the transferability of the findings. Future research is therefore recommended to employ comparative multi-site studies or mixed-methods approaches to validate this management model across vocational disciplines and institutional contexts and to examine its long-term impact on graduate employability and industrial competitiveness.

ACKNOWLEDGMENT

The authors sincerely express their deepest gratitude to the school, particularly the Principal, the Head of the Fashion Design Department, the Teaching Factory (Tefa) Manager, teachers, and all participants, for their invaluable support, cooperation, and willingness to provide access, information, and insights that made this research successful.

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