

Teaching Factory Implementation and Students' Entrepreneurial Motivation

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ABSTRACT

This study aimed to evaluate the implementation of the Teaching Factory and examine students' entrepreneurial motivation in vocational education. A mixed-methods approach with a concurrent embedded design was employed using the Context, Input, Process, and Product (CIPP) evaluation model. Qualitative data were collected through interviews, observations, and documentation involving the school principal, Teaching Factory coordinator, teachers, and students, while quantitative data were obtained through an entrepreneurial motivation questionnaire administered to 37 students. The findings showed that the Context component was supported by the school's vision, mission, and institutional policies. The Input component demonstrated support from teacher competencies, an industry-aligned curriculum, learning facilities, and industry partnerships, although limitations in practical equipment remained. The Process component involved a systematic work cycle comprising planning, production, quality control, marketing, and financial management. In the Product component, students' entrepreneurial motivation reached 77.45% and was categorized as high. The integration of qualitative and quantitative findings showed that Teaching Factory provided authentic workplace-oriented learning experiences that connected vocational competencies with production and business practices. These findings suggest that Teaching Factory supports the development of students' entrepreneurial motivation through their direct involvement in authentic work and business-related activities.

Keywords: *Teaching Factory, entrepreneurial motivation, vocational education, program evaluation, authentic learning*

ABSTRAK

Penelitian ini bertujuan mengevaluasi implementasi *Teaching Factory* dan mengkaji motivasi berwirausaha siswa pada pendidikan vokasi. Penelitian menggunakan pendekatan *mixed methods* dengan desain *concurrent embedded* dan model evaluasi Context, Input, Process, dan Product (CIPP). Data kualitatif diperoleh melalui wawancara, observasi, dan dokumentasi yang melibatkan kepala sekolah, koordinator *Teaching Factory*, guru, dan siswa, sedangkan data kuantitatif diperoleh melalui angket motivasi berwirausaha terhadap 37 siswa. Hasil penelitian menunjukkan bahwa komponen Context didukung oleh visi, misi, dan kebijakan sekolah. Komponen Input menunjukkan dukungan kompetensi guru, kurikulum yang selaras dengan kebutuhan industri, fasilitas pembelajaran, dan kemitraan industri, meskipun masih terdapat keterbatasan peralatan praktik. Pada komponen Process, pembelajaran dilaksanakan melalui siklus kerja yang mencakup perencanaan, produksi, *quality control*, pemasaran, dan pengelolaan keuangan. Pada komponen Product, motivasi berwirausaha siswa mencapai 77,45% dan berada pada kategori tinggi. Integrasi temuan kualitatif dan kuantitatif menunjukkan bahwa *Teaching Factory* menyediakan pengalaman belajar autentik yang menghubungkan kompetensi vokasional dengan praktik produksi dan kegiatan bisnis. Temuan ini menunjukkan bahwa *Teaching Factory* mendukung berkembangnya motivasi berwirausaha siswa melalui keterlibatan langsung dalam pengalaman kerja dan aktivitas bisnis yang autentik.

Kata kunci: *Teaching Factory, motivasi berwirausaha, pendidikan vokasi, evaluasi program, pengalaman belajar autentik*

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INTRODUCTION

Vocational education plays a crucial role in preparing a workforce that is competent, adaptable, and capable of contributing to national economic development. Through vocational education, students are equipped with practical skills relevant to the needs of the workforce. As vocational education institutions, vocational high schools (SMKs) play a strategic role in preparing graduates who not only possess technical skills but also have the capacity to create business opportunities independently. Ideally, SMK graduates should be prepared not only as job seekers but also as job creators. However, many SMK graduates still prioritize seeking employment over starting their own businesses. One factor contributing to this condition is that entrepreneurship learning has not yet fully provided students with authentic experiences in running a business. Entrepreneurial motivation is therefore an important factor in encouraging students to develop the courage, self-confidence, and determination needed to consider entrepreneurship as a career option. Such motivation may be shaped by learning experiences, the educational environment, and instructional approaches that provide opportunities for students to engage directly in authentic activities.

In response to these challenges, the Teaching Factory has been implemented as a learning approach that integrates production-based learning with authentic workplace practices. In vocational education, learning experiences involving actual production processes and business management can provide students with opportunities to understand entrepreneurial practices more directly. Through this approach, students not only learn theoretical concepts but also participate in activities ranging from production and business management to customer service. Teaching Factory is therefore expected to bridge the gap between education and industry while providing experiences relevant to the development of students' entrepreneurial orientation. This is consistent with research findings indicating that the implementation of the Teaching Factory learning model and learning motivation significantly influence the entrepreneurial spirit of vocational high school students (Gunawan A. W., 2024). As a production-based learning model, Teaching Factory can also develop technical skills while fostering students' entrepreneurial spirit through simulations of real-world industrial processes (Directorate of Vocational Education, 2017).

Previous studies have demonstrated the potential of Teaching Factory implementation to develop students' competencies and support their entrepreneurial interest and motivation. Research has indicated that the implementation of the Teaching Factory learning model has a significant effect on the entrepreneurial readiness of vocational high school students (M. Hasanah, 2023). Furthermore, another study found that Teaching Factory learning positively affected students' entrepreneurial interest, with a reported contribution of 63.3 percent (Syahdita, 2025). These findings suggest that Teaching Factory-based learning provides contextual learning experiences that connect vocational learning with actual business and workplace practices.

Despite these findings, previous studies have predominantly focused on outcomes such as students' technical competencies, work readiness, production

outcomes, entrepreneurial readiness, and entrepreneurial interest. Research that examines Teaching Factory implementation comprehensively while simultaneously considering students' entrepreneurial motivation remains relatively limited. Consequently, there is still a need to understand how the institutional context, available resources, and implementation processes of Teaching Factory are associated with the entrepreneurial motivation demonstrated by students. This constitutes the research gap addressed in the present study.

Based on this gap, a comprehensive evaluation of Teaching Factory implementation is needed to understand both how the program is implemented and the entrepreneurial motivation demonstrated by students participating in the program. Therefore, this study focuses on Teaching Factory implementation and students' entrepreneurial motivation. Rather than examining entrepreneurial motivation solely as an outcome, the study evaluates the institutional context, supporting resources, implementation processes, and program outcomes as interconnected components. The findings are expected to provide an empirical overview of Teaching Factory implementation and offer recommendations for developing more effective and sustainable Teaching Factory-based vocational education.

The evaluation of Teaching Factory implementation in this study uses the CIPP evaluation model. Conceptually, the CIPP model consists of four main components—Context, Input, Process, and Product—each of which provides different yet complementary information in program evaluation. Context evaluation identifies the needs, opportunities, and issues underlying a program. Input evaluation assesses the strategies and resources used to support program implementation. Process evaluation examines how the program is implemented, while Product evaluation assesses the outcomes generated by the program (Stufflebeam & Coryn, 2014).

The four components of the CIPP model are operationalized in this study as follows: (1) Context, including the alignment of the school's vision and mission, internal policies, and national regulations; (2) Input, including the availability and quality of the synchronized curriculum, teacher/instructor competencies, production facilities, and active partnerships with the business and industrial sectors (DU/DI); (3) Process, including the implementation of the complete production cycle—planning, production, quality control, marketing, and financial management—by students in the Teaching Factory unit; and (4) Product, focusing on the level of entrepreneurial motivation among students participating in the Teaching Factory.

RESEARCH METHODS

This study employed a mixed-methods approach using a concurrent embedded design (Creswell & Plano Clark, 2018). Qualitative data served as the primary strand for evaluating the Context, Input, and Process components of the CIPP model, while quantitative data supported the Product component by examining students' entrepreneurial motivation. Both types of data were collected concurrently and integrated at the interpretation stage using a joint display.

The study was conducted at SMKS Teknologi Plus Padang, particularly in the Visual Communication Design program. Participants were selected purposively based on their knowledge, experience, and direct involvement in Teaching Factory activities. Qualitative informants included the school principal, Teaching Factory coordinator, teachers, and selected students. The quantitative sample consisted of 37 students who had participated in Teaching Factory activities. Data were collected over three weeks in June 2026 through interviews, observations, documentation, and an entrepreneurial motivation questionnaire.

The entrepreneurial motivation questionnaire measured five indicators: desire to become an entrepreneur, self-confidence, risk-taking, creativity, and positive perceptions of entrepreneurship. The questionnaire used a four-point Likert scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (4) (Sugiyono, 2017). The initial 25-item instrument was validated by three experts and pilot-tested with 28 students. Expert validation yielded an average score of 84.29%. Empirical validity testing using Pearson Product-Moment correlation resulted in 21 valid items, while four items were excluded. The final 21-item instrument demonstrated high internal consistency, with a Cronbach's Alpha of 0.892.

Qualitative data were analyzed using the interactive model of Miles, Huberman, and Saldaña (2014), involving data reduction, data display, and conclusion drawing/verification. The credibility of qualitative findings was strengthened through source triangulation and technique triangulation by comparing information obtained from different informants and across interviews, observations, and documentation. Quantitative data were analyzed descriptively using actual scores, ideal scores, mean scores, and percentages. Finally, qualitative and quantitative findings were integrated through a joint display to identify convergence across the CIPP components and generate an overall interpretation of Teaching Factory implementation and students' entrepreneurial motivation.

RESULTS AND DISCUSSION

1. Teaching Factory Implementation across the Context, Input, and Process Components

a. Context

The Context evaluation showed that the implementation of the Teaching Factory was supported by the school's vision, mission, and institutional policies. The program was positioned as part of the school's strategy to bridge vocational learning with the competencies required by business and industry. This orientation was reflected in the school's emphasis on producing skilled, competitive, disciplined, and work-ready graduates. The findings also showed that Teaching Factory implementation was supported by national vocational education policies and translated into internal operational mechanisms, including Standard Operating Procedures (SOPs) that regulated production activities and quality control. The relevance of the program was also reflected in its adaptation to actual industry practices. The school continuously aligned its local curriculum and

production activities with market demands, while students experienced project-based activities that resembled professional work environments. These findings indicate that Teaching Factory was not implemented merely as an additional practical activity but was integrated into the school's vocational education orientation. From the CIPP perspective, Context evaluation is intended to identify the needs, opportunities, and conditions underlying a program (Stufflebeam & Coryn, 2014). Therefore, the alignment between institutional objectives, school policies, and industry needs provides an important foundation for the sustainability of Teaching Factory implementation.

b. Input

The Input evaluation revealed that Teaching Factory implementation was supported by teacher competencies, an industry-oriented curriculum, production facilities, and partnerships with business and industry. Teachers involved in the program continuously developed their competencies through industrial training, collaborative learning, and independent professional development. The curriculum was also adapted toward order-based learning, in which learning materials and production procedures were designed around actual customer orders and industry-related work processes. However, several limitations were identified in the availability of production facilities. Comparable implementation constraints have also been identified in vocational school settings, where limitations in infrastructure and technical readiness can affect the implementation of contextual learning activities (Wiranata et al., 2024). Some graphic-design computers had limited capacity, several finishing processes still relied on manual equipment, and the availability of production materials was occasionally unstable. Nevertheless, the Teaching Factory continued to operate through the optimization of existing facilities and systematic equipment management. Industry partnerships also supported curriculum alignment, product quality standards, and exposure to actual market demands. These findings show that Teaching Factory implementation requires the interaction of human resources, curriculum, facilities, and industry partnerships. This is consistent with Mbakwa et al. (2023), who emphasized that successful Teaching Factory implementation is influenced by school-industry collaboration, adequate production facilities, and teacher competence in managing production-based learning. Thus, the limitations identified in facilities do not negate the overall support provided by the Input component, but they indicate areas that require further strengthening.

c. Process

The Process evaluation showed that Teaching Factory activities were implemented through a structured production cycle. The process began with planning and preparation, including curriculum alignment, preparation of learning materials, equipment checking, and the assignment of students to

production roles based on their competencies. During production, students were involved in analyzing customer needs, preparing designs, completing production tasks, and following quality-control procedures before products were delivered to customers. Marketing activities targeted internal school needs, local communities, and partner micro, small, and medium enterprises, while financial transactions were recorded and managed to support subsequent production activities. Teachers played the role of facilitators and consultants rather than merely delivering technical instruction. They guided students in making design decisions, monitored product quality, and provided feedback before production was finalized. This facilitative and adaptive role is consistent with previous studies emphasizing teachers' roles as facilitators in learner-centered learning and the importance of active teacher engagement in adapting learning to contextual conditions (Montessori et al., 2025; Tiara et al., 2026).

Program monitoring was also conducted continuously through SOPs, quality-control sheets, and teacher supervision to identify technical problems and maintain professional production standards. The production process provided students with learning experiences that closely resembled actual workplace practices. Students were required to respond to customer needs, meet production standards, manage deadlines, collaborate with others, and take responsibility for the quality of their work. This finding is consistent with the concept of work-based learning, in which vocational learning becomes more contextual when students engage directly with activities resembling authentic workplace situations (Billett, 2011). Thus, the Process component indicates that the main strength of the Teaching Factory lies not only in the production of goods and services but also in creating an authentic learning environment that connects vocational learning with professional work practices.

2. Students' Entrepreneurial Motivation as the Product Component

The Product component focused on students' entrepreneurial motivation after their participation in Teaching Factory activities. Based on responses from 37 students, the overall entrepreneurial motivation score reached 77.45%, which was categorized as high. All five indicators were also within the high category, although their achievement levels varied.

Table 1. Students' Entrepreneurial Motivation by Indicator

No.	Indicator	Actual Score	Mean Score	Percentage	Category
1	Desire to become an entrepreneur	571	15.43	77.16%	High
2	Self-confidence	441	11.92	74.49%	High
3	Risk-taking	476	12.86	80.41%	High
4	Creativity	457	12.35	77.20%*	High

5	Positive perception of entrepreneurship	462	12.49	78.04%	High
Overall entrepreneurial motivation		2,407	65.05	77.45%	High

Source: Research data, 2026.

The results indicate that risk-taking obtained the highest percentage (80.41%), followed by positive perceptions of entrepreneurship (78.04%), desire to become an entrepreneur (77.16%), creativity (77.20%), and self-confidence (74.49%). Despite these differences, all indicators remained within the high category. The relatively high score for risk-taking suggests that students had developed a willingness to face uncertainty and challenges associated with production and business activities. Their direct involvement in completing customer orders, meeting production standards, and dealing with practical problems provided opportunities to encounter situations that required decision-making and responsibility. In contrast, self-confidence obtained the lowest percentage, indicating that students may still need greater opportunities to manage business activities more independently, particularly in customer interaction, marketing, and business decision-making.

This interpretation is also consistent with the qualitative findings, in which students expressed increased confidence in taking external projects and identifying business opportunities related to their vocational competencies. At the individual level, most students were concentrated in the high and very high categories. Of the 37 respondents, 16 students (43.24%) were categorized as very high, 15 students (40.54%) as high, five students (13.51%) as moderately high, and one student (2.70%) as low. No student was categorized as very low. These results show that entrepreneurial motivation was generally strong among students participating in the Teaching Factory, although variation remained among individual students.

The qualitative findings provide further context for these quantitative results. Students described Teaching Factory as an environment that exposed them to actual production demands and business-related experiences. One student reported having the confidence to undertake independent video-production and digital-promotion projects for local micro and small enterprises, while another student described plans to combine employment in the creative industry with gradually developing an independent editing and design business. These experiences suggest that Teaching Factory may support students in connecting vocational competencies with realistic entrepreneurial opportunities.

These findings are consistent with previous studies reporting that Teaching Factory experiences can strengthen entrepreneurial interest and motivation through direct involvement in production, customer service, marketing, and business management activities. Al Hakim (2024), for example, found that production and customer-service activities provided students with real business

experiences that encouraged entrepreneurial interest. Similarly, Hariati et al. (2022) emphasized that the effectiveness of Teaching Factory in supporting entrepreneurial motivation depends on the completeness of students' experiences across the business cycle, from production to business management. Accordingly, the Product findings suggest that Teaching Factory provides a learning environment associated with relatively strong entrepreneurial motivation among participating students. However, because the study did not employ a pretest posttest design, the findings should be interpreted as describing the level of entrepreneurial motivation and students' reported experiences rather than demonstrating a measured increase over time.

3. Iteration of CIPP Findings

The integration of qualitative and quantitative findings showed that the four CIPP components were interconnected in explaining Teaching Factory implementation. The Context, Input, and Process components were primarily supported by qualitative evidence from interviews, observations, and documentation, whereas the Product component combined qualitative evidence with quantitative data on students' entrepreneurial motivation.

Table 2. Joint Display of Teaching Factory Evaluation

CIPP Component	Main Findings	Integrated Interpretation
Context	School vision, mission, policies, and program objectives supported Teaching Factory implementation.	Institutional support provided a relevant foundation for the program.
Input	Teachers, industry-aligned curriculum, facilities, and industry partnerships supported implementation, although equipment limitations remained.	Resources were generally supportive but still required strengthening.
Process	Teaching Factory was implemented through planning, production, quality control, marketing, and financial management.	The process provided authentic workplace-oriented learning experiences.
Product	Students reported positive entrepreneurial experiences, while entrepreneurial motivation reached 77.45% (High).	Qualitative and quantitative findings converged in indicating strong entrepreneurial motivation among participating students.

The integrated findings indicate that Teaching Factory implementation was supported not only by institutional policies, human resources, curriculum, and facilities, but also by the quality of students' authentic learning experiences.

Students' direct involvement in production and business-related activities enabled them to connect vocational competencies with workplace and entrepreneurial practices. This suggests that the contribution of Teaching Factory lies in the interaction between institutional support, learning resources, production processes, and students' active engagement in authentic work experiences.

Conclusion

This study shows that Teaching Factory implementation at SMKS Teknologi Plus Padang is supported by interconnected Context, Input, Process, and Product components. Institutional policies, teacher competencies, an industry-aligned curriculum, learning facilities, and industry partnerships provided the foundation for program implementation, while production-based learning offered students authentic workplace-oriented experiences. The Product component showed that students' entrepreneurial motivation reached 77.45%, which was categorized as high. Risk-taking obtained the highest achievement, while self-confidence remained the lowest-rated indicator, suggesting that students still need broader opportunities to engage independently in customer interaction, marketing, business decision-making, and business management. The integration of qualitative and quantitative findings indicates that Teaching Factory provides an authentic learning environment that connects vocational competencies with workplace and entrepreneurial practices. Its contribution appears to lie not only in production activities, but also in students' direct involvement in real work processes, customer-oriented tasks, quality control, and business-related experiences. Therefore, further development of Teaching Factory should strengthen practical facilities, industry partnerships, and students' involvement in broader business activities so that entrepreneurial learning becomes more comprehensive.

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