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Entrepreneurship Development Based on Teaching Factory in Fashion Design Skill Program at Vocational High School

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Abstract. Vocational education development must be based on the required skills from the workplace to create creative and skilled laborers with Indonesian government programmed a BMW (*Bekerja, Melanjutkan studi, dan Wirausaha*, or working, further studying, and being entrepreneurs) program for this matter. This study aimed to explore entrepreneurship learning based on teaching factory for students with fashion design skills in vocational high schools. This research used a descriptive method and qualitative approach. The data was analyzed using the interactive model and was validated using triangulation and member checking. The finding showed that entrepreneurship learning based on teaching factory in vocational high schools was conducted through the development stage, implementation, and evaluation. The effect was a 20% increase in graduates' absorption in industries and entrepreneurship. Thus, it can be concluded that entrepreneurship learning based on teaching factory in vocational high schools significantly influenced graduates to work.

Keywords: Learning preparation, learning implementation, entrepreneurship, teaching factory

INTRODUCTION

The total of foreign workers in Indonesia has increased over the years (Lee & Wie, 2015); hence, it created competition among job seekers, among others are vocational high school graduates. The competition is not limited to domestic workers but also foreign workers. Snihur, Lamine, and Wright (2018) stated that high competition and limited job opportunities would decrease the graduates' absorption in the world of work.

According to Botke, Jansen, Khapova, and Tims (2018), the condition above resulted from the low hard and soft skills of vocational high school graduates. A survey from 460 companies in Java, Sumatra, Kalimantan, and Sulawesi showed a mismatch between vocational high schools' competency levels and requirements. It meant that the pragmatic philosophical basis of "theory is right if it works" did not well realized.

Therefore, the government brought the 21st-century educational concept through the curriculum. Tindowen, John, and Cangurangan (2017) argued that 21st-century skills are vital in determining success in higher education, the workplace, and every field as in Table 1.

Table 1. The 21st-Century Skills Characteristics

Characteristics	Implementation
Critical Thinking	Students' ability to analyze complex problems, investigate unclear questions that have no answers, evaluate the information source from every point of view and conclude following the evidence and logic.
Communication	Students' ability to manage thinking, data, and finding to share effectively through media, written or oral.
Collaboration	Students cooperate to solve a problem or answer a question, work effectively and respectfully, arrange a purpose, and be responsible together in finishing a task.
Creativity	Students can synthesize, analyze, then compile or present their lesson in a new way and original finding.

Source: Tindowen, John, & Cangurangan (2017)

Another factor that influence is vocational high school graduates' mindset that focuses on being job seekers. Reflecting on the previous period, their mindset was mostly only as job seekers; they rarely became job makers. According to Lopus et al. (2019), vocational students' entrepreneurship spirits were 15.30%. Moreover, in 2017, of 1.4 million graduates, only 2.5% became entrepreneurs. It indicated that their entrepreneurial interest is lacking and need improvements.

An ideal condition of a country in development is if it has at least 2% entrepreneurs compared to the total population. In contrast, entrepreneurs in Indonesia are only 0.18% of the total (Hadi et al., 2015). This number is very far from the ideal expected conditions for maintaining the stability of the social strata in society. Besides, as predicted in 2025, the bonus demographic is also a challenge in Indonesia's working world. Productive ages would dominate the population and could be the biggest unemployment if poorly managed. It could occur due to the imbalance between the ready-to-work population and available job opportunities.

The current condition received particular attention in developing entrepreneurs in Indonesia, such as developing entrepreneurship in vocational graduates. The solution is to develop soft and hard skills 21st-century for students to prepare them for entering the working world and improving their entrepreneurship spirits so that they can be job seekers and job makers through teaching factory.

METHODS

This research method is descriptive with a qualitative approach. The stages in qualitative research are an initial survey to collect data, an initial mapping analysis, and an in-depth analysis to develop a theory (Davidson, Edwards, Jamieson, & Weller, 2019). Qualitative research identifies phenomena's characteristics, structure, and events in a natural context. Next, the characteristics are combined to form a mini theory or conceptual model. Qualitative research requires open behavior to understand how people handle their situations. According to Jarvie (2012), researchers are demanded to be active and highly skilled in qualitative research. This study collected data through participant observations in public vocational high schools in Malang, Indonesia. Then, the analysis used interactive and validation used triangulation and member checking (Thoma & Ostendorf, 2018).

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RESULTS AND DISCUSSIONS

The results were grouped into three: (1) preparing the learning development through the teaching factory concept; (2) implementing a school program based on the teaching factory; and (3) evaluating entrepreneurship development based on the teaching factory on vocational high school graduates. Below is the description.

Preparing the Learning Development through Teaching Factory Concept

Preparation is the initial stage that must be done before conducting a program. This development preparation was performed during the learning process using strategies from various learning models to attract students to improve their 21st-century skills. Figure 1 displays the development preparation of learning through teaching factory concepts for fashion design student skills in vocational high schools.

Figure 1 shows the initial step to preparing the learning development: teachers observe students' 21st-century skills. This observation was done before the learning process to be the teachers' initial idea. Then, the learning process could use several models, approaches, and methods, such as problem/project-based learning, scientific inquiry, and discussion. During the process, students were accustomed to performing critical analysis, expressing their opinion, cooperating, and training to create something new. After, in the post-learning, teachers still observed students' skills as a comparison for their development.

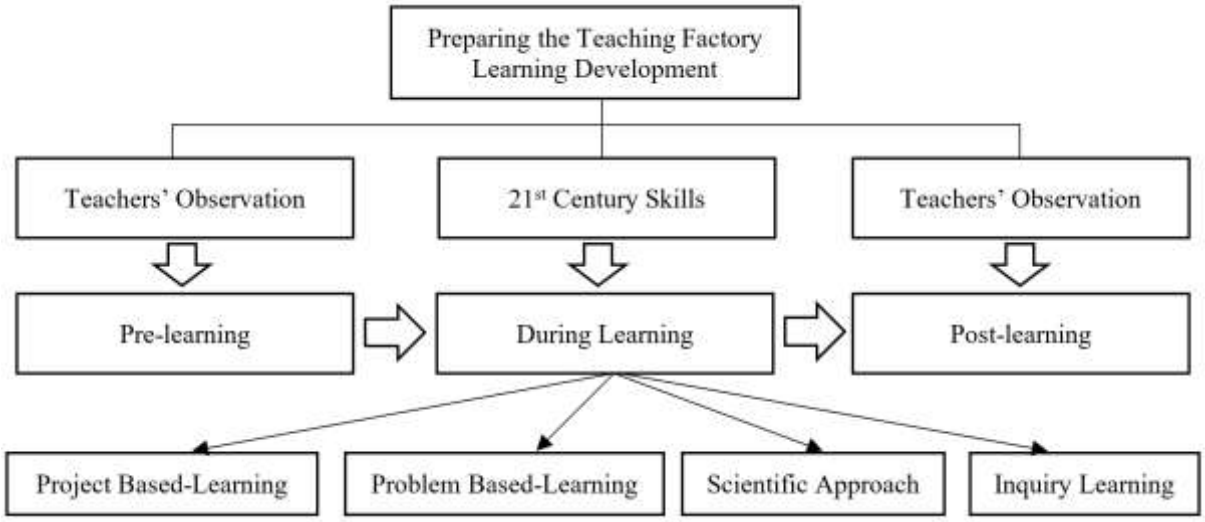

Figure 1. The Development Preparation of Learning through Teaching Factory Concept for Fashion Design Student Skills in Vocational High Schools

The teaching factory is a two-way knowledge communication channel because it is a fundamental learning concept to bridge the competency gap between knowledge from school and industrial needs (Stavropoulos, Bikas, & Mourtzis, 2018). One of many ways to improve entrepreneurship interest is by increasing the understanding and interest of society in entrepreneurship (Bauman & Lucy, 2019). Entrepreneurship must be pushed with courage, tenacity, and determination (Yamakawa et al, 2016).

Implementing School Program Based on Teaching Factory

Schools conducted the implementation. It was a program with a critical analysis concept of social needs in society that could be solved by specific product development. This program made schools cooperate with industries to realize it, not only limited in conceptual but also in practice and implementation in society. The realization provided students with 21st-century skills to master. Figure 2 displays the school program implementation based on a teaching factory for fashion design students in vocational high schools.

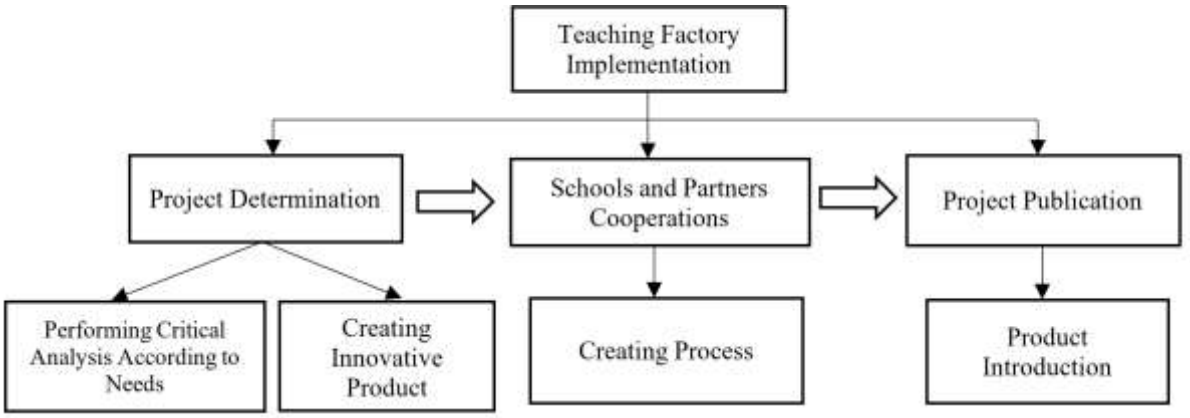

Figure 2. The Implementation of the School Program Based on Teaching Factory for Fashion Design Students in Vocational High Schools

The implementation of the teaching factory, according to Figure 2, was started with project determination. Students, guided by teachers, determined their project of creating innovative products to solve society's needs for the creative industry. This activity improved the critical thinking and creativity

of students. Schools cooperated with specific partners to realize the designed product. During the process, students were trained to collaborate with others. Then, in the publication stage, students were required to publicize the product verbally or written. The oral publication was done in a grand fashion show, while the written publication was done as scientific work. These processes could add communication skills.

Evaluating Entrepreneurship Development Based on Teaching Factory

Evaluation of teaching factory implementation is vital, especially in vocational education (Misbah et al, 2019). In this study, the evaluation of entrepreneurship development based on a teaching factory for fashion design students in a vocational high school ran smoothly. Based on the evaluation results, the entrepreneurship concept arose based on two things: the strength and opportunity of students. Students born from 1995 to 2010 are commonly called Gen Z. Wibawanto (2015) mentioned that Gen Z is a generation born in 1995 – 2010 from Gen X and Gen Y. Gen Z is an intelligent generation in which activities are spoiled with technology. They also have more entrepreneurship spirit than Gen Y. Thus; graduates have the strength to develop entrepreneurship or be job makers in all skills.

Opportunity is related to business. This generation knows three market types: traditional, modern, and online. Their characteristic of being tech-savvy should support them in being directed into that field. Technology and their mindset must be utilized as maximum as possible to develop their entrepreneurship spirit.

CONCLUSION

Vocational education development to create skilled laborers must be based on the 21st-century skills that the working world needs. In the education and teaching context in vocational high school, 21st-century skills consist of critical thinking, creativity, communication, and collaboration that all students must embody to work. Job maker is a paradigm in vocational education that is representative enough to be nurtured in students. Developing entrepreneurship could be done through teaching factory.

Teaching factory implementation in Public Vocational High School 3 Malang ran smoothly from preparing the learning development through the teaching factory concept, implementing a school program based on a teaching factory, and evaluating entrepreneurship development based on a teaching factory for vocational high school graduates. Graduates' absorption before the teaching factory was 45%, but after the teaching factory was 65%, with students working in industries and becoming entrepreneurs.

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