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# TEACHING FACTORY LEARNING MANGEMENT TO IMPROVE THE QUALITY OF FASHION STUDENT' PRODUCTS AT SMK NEGERI 1 SANGATTA UTARA

**Sakia Darajat[1], A Azainil[2], Akhmad[3], U Haryaka[4], GM Widyatmike[5], L Komariyah[6]**

[1,2,3,4,5,6]Faculty of Teacher Training and Education, Mulawarman State University, Indonesia

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**ABSTRACT**

The quality of products produced by students has not fully met the standards and needs of the business and industrial world. Therefore, the implementation of Teaching Factory learning as a production-based learning approach in vocational schools is needed. This study aims to describe the management of Teaching Factory learning in improving the quality of student products in the Department of Fashion Design and Production at SMK Negeri 1 Sangatta Utara. This study used a descriptive qualitative approach with a case study method. Data were collected through observation, interviews, and documentation. Data analysis followed the Miles and Huberman model, including data reduction, data display, and conclusion drawing. Research informants consisted of the principal, vice principal for curriculum, head of department, production unit coordinator, productive teachers, and students. The results show that Teaching Factory learning management is implemented based on the 7M components: Man, Money, Material, Machine, Method, Market, and Minute, integrated into management functions of planning, organizing, implementing, and supervising. Planning is carried out through curriculum synchronization with industry needs and the application of a block system. Organizing involves clear task distribution, while implementation engages students in the full production process according to industry procedures. Supervision is conducted through monitoring and quality control with industry partners. The implementation of Teaching Factory improves product neatness, technical precision, production time efficiency, and conformity with market standards. Thus, it contributes positively to improving the quality of student products.



***Corresponding Author:***

Sakia Darajat
Faculty of Teacher Training and Education
Mulawarman State University
sakiadarajat61@guru.smk.belajar.id

## 1. INTRODUCTION

Vocational education has a strategic role in preparing human resources who are competent, productive, and ready to face the demands of the world of work. Based on Law Number 20 of 2003 concerning the National Education System, Vocational High Schools (SMK) aim to prepare students to have work competencies according to certain areas of expertise. Therefore, the learning process at vocational schools not only emphasizes the mastery of knowledge, but also on the development of practical skills, professional attitudes, and the ability to produce products in accordance with the standards of the business world and the industrial world (DUDI).

Along with the development of technology and industry dynamics, vocational education is required to continue to make adjustments so that the graduates produced have competencies that are relevant to the needs of the job market. However, the reality is that there is still a gap between the competence of vocational school graduates and the demands of the world of work. Data from the Central Statistics Agency shows that the open unemployment rate of vocational school graduates is still relatively high compared to graduates of other levels of education. This condition shows that learning at vocational schools has not been fully able to bridge the needs of the industry with the competencies possessed by graduates. One of the learning approaches developed to overcome this gap is the Teaching Factory. Teaching Factory is a production-based learning model that integrates learning activities with real work processes that follow industry standards. Through this approach, students not only learn basic theories and skills, but also engage directly in the production activities of goods or services that have economic value and certain quality standards. Thus, Teaching Factory learning can provide a more authentic work experience and increase students' work readiness.

The implementation of the Teaching Factory in vocational schools aims to create a learning environment that resembles the actual industrial conditions. In the process, students are involved in all stages of production starting from planning, product manufacturing process, quality control, to product marketing. This production-based learning is expected to be able to improve technical skills, professional work attitudes, and the ability to produce quality products that are in accordance with market needs. Therefore, the Teaching Factory not only functions as a learning strategy, but also as a means of developing students' competencies comprehensively. The success of the implementation of the Teaching Factory is greatly influenced by effective learning management. Learning management includes planning, organizing, implementing, and supervising activities that are carried out systematically to achieve learning goals. In the context of the Teaching Factory, learning management is very important because the learning process not only involves practical activities, but also integrates various resources such as labor, materials, equipment, production methods, working time, and market opportunities. Good management of these various components will determine the success of learning as well as the quality of the products produced by students. Various studies show that the implementation of the Teaching Factory can make a positive contribution to improving student competence and the quality of practical learning in vocational schools. The Teaching Factory allows students to gain a more contextual learning experience because the learning process is carried out through real production activities. In addition, cooperation between schools and industry is also an important factor in supporting the success of the Teaching Factory program, especially in curriculum alignment, production standards, and product quality control. However, most of the previous research has focused more on aspects of the implementation of the Teaching Factory program, partnerships with industry, and improving student competence in general. Research that specifically examines the management of Teaching Factory learning in relation to improving the quality of student products in certain skill programs is still relatively limited. In fact, product quality is an important indicator in production-based learning because it shows the extent to which students are able to apply technical skills according to industry standards.

SMK Negeri 1 Sangatta Utara is one of the vocational schools that has implemented Teaching Factory learning in the Department of Fashion Design and Production. This program actively involves students in the fashion production process which is carried out based on orders from the community and partners. Through these activities, students gain a more real learning experience as well as the opportunity to develop technical skills in the field of fashion design and production. However, the quality of products produced by students still needs to be continuously improved in order to fully meet industry standards and market needs. Based on these conditions, a more in-depth study is needed on how Teaching Factory learning management is implemented in improving the quality of student products. Analysis of aspects of planning, organizing, implementing, and supervising learning is important to find out the extent to which the learning management system can support the successful implementation of the Teaching Factory. Therefore, this study aims to describe and analyze the learning management of Teaching Factory in improving the quality of products of students of the Department of Fashion Design and Production at SMK Negeri 1 Sangatta Utara. The results of this research are expected to contribute to the development of Teaching Factory learning management in vocational schools and become a reference for vocational schools in improving product quality and student competencies through production-based learning.

## 2. RESEARCH METHODS

This study uses a descriptive qualitative approach with a case study method to explore Teaching Factory learning management in improving the product quality of students of the Department of Fashion Design and Production at SMK Negeri 1 Sangatta Utara (John W. Creswell & J. David Creswell, 2021; Robert K. Yin, 2018). The focus of the research is directed to answer the questions of "how" and "why" the implementation of the Teaching Factory can improve student competence.

Data were obtained through participatory observation, semi-structured interviews, and official documentation, with the main instruments of the researcher, supported by observation sheets, interview guidelines, and document checklists (Sugiyono, 2022). Informants were selected using purposive sampling:

school principals, vice principals of curriculum, Teaching Factory coordinators, department heads, productive teachers, and students.

Data analysis following the interactive model of Miles, Huberman, & Saldaña (2014) includes data reduction, presentation, and verification. The validity of the data is guaranteed through triangulation of sources and techniques, as well as member checks, to ensure the credibility and reproducibility of research results.

## 3. RESULT AND ANALYSIS

### Research Results

This study uses a descriptive qualitative approach to describe the learning management of Teaching Factory in improving the quality of products of students of the Department of Fashion Design and Production at SMK Negeri 1 Sangatta Utara. Data was obtained through interviews with school principals, vice principals for curriculum, department heads, productive teachers, students, as well as supporting documents such as curriculum, block schedules, activity reports, and industry MoU. The results of the research are presented based on the management aspects of 7M (Man, Money, Materials, Machine, Method, Market, Minute).

### Learning Planning

Teaching Factory planning is carried out through synchronization of the curriculum with industry needs as well as teacher and student apprenticeship programs (MAN). Financing activities utilizes BOS and BOSDA funds for practice materials, equipment maintenance, and production activities (Money). Practical materials are adjusted to the needs of projects or orders to meet industry standards (Materials). Machinery and equipment are prepared and maintained periodically (Machine). The learning method uses Project-Based Learning (PjBL) with a block system so that students can follow the production process in its entirety (Method). Product marketing starts from the school environment and the surrounding community (Market), with practice time setting through a block system according to the academic calendar (Minute).

### Learning Organisation

Organizing is carried out through the formation of a production unit structure and the division of students into work teams according to the stages of production with the guidance of productive teachers (Man). Fund management is carried out in a coordinated manner between the school and the department (Money). Practical materials are managed through a procurement and distribution system according to production needs (Materials). The use of the machine is scheduled alternately and maintained periodically (Machine). The work process follows industrial SOPs from design to finishing (Method). The production unit also manages product marketing as a means of learning entrepreneurship for students (Market), with practice time setting through a block system (Minute).

### Learning Implementation

The implementation of the Teaching Factory is carried out through real production with the active involvement of students and teachers. Students work in a production team with the guidance of a teacher (Man). Funds are used according to production needs (Money). Practical materials are used efficiently (Materials), while machines are used according to work safety procedures (Machines). The Project-Based Learning method is applied to produce products that are according to consumer orders (Method and Market). The block system supports product completion on target time (Minute).

### Learning Supervision

Supervision is carried out through academic supervision and evaluation of the learning process (Man). The use of funds is monitored to maintain accountability (Money). The quality of materials and their use is supervised through the recording of materials. Machinery and equipment are maintained and monitored for their use (Machine). The student work process is supervised according to industry SOPs (Method), while product quality is also checked by industry partners (Market). The time discipline in the block system is also monitored (Minute).

### Supporting and Inhibiting Factors

Supporting factors include teacher competence, student internship experience, government funding support, availability of materials and equipment, and real production-based learning. Inhibiting factors include limited practice materials, equipment maintenance, limited product marketing, and limited practice time.

### Data Validity Test

The validity of the data is carried out through triangulation of sources and techniques by comparing the results of interviews, observations, and documents so that the research findings are considered consistent and reliable.

### Discussion

The results of the study show that the learning management of the Teaching Factory in improving the quality of products for students of the Department of Fashion Design and Production at SMK Negeri 1 Sangatta Utara can be analyzed through the 7M (Man, Money, Material, Machine, Method, Market, Minute) approach. This approach illustrates how production-based learning management is able to integrate pedagogical and managerial aspects so as to support the improvement of the quality of student products. At the planning stage, the Man element involves the collaboration of principals, teachers, and students in the division of tasks according to competencies (Sunaryo, 2022). The Money element is focused on managing the practice budget efficiently (Wibowo, 2021; Slamet, 2023). Materials are prepared according to product needs (Triatmoko & Slamet, 2021), while machines are utilized and maintained to be optimal (Sudira, 2021; Directorate of Vocational Schools, 2022). The method uses production-based learning or project-based learning that is in line with the needs of the industry (Dasna, 2024; Thomas, 2000). The market is directed to the internal needs and external orders of the school, while the Minute is regulated through a block system so that the practice runs effectively (Wibowo, 2021). These findings are in line with the research of Wibowo and Sohidin (2025) and Kautsar et al. (2022).

In the organizing and implementation stages, Teaching Factory learning is carried out through a clear division of roles between principals, teachers, and students. Students work in teams according to the stages of production as per the industrial work system, while the management of materials, machinery, and funds is carried out in a coordinated manner and follows industrial SOPs (Mulyasa, 2020; Heizer, Render, & Munson, 2020; Directorate General of Vocational Education, 2021). The project-based learning method allows students to be directly involved in the production process to produce products that meet consumer needs. This is in line with research by Ugama et al. (2020) and Heriyati (2023) which shows that Teaching Factories are able to improve technical competence, work attitudes, and product quality of students.

The supervision stage, learning and production process are monitored continuously through teacher performance supervision, supervision of the use of funds, machine maintenance, and checking the quality of materials and products (Wibowo, 2021; Slamet, 2023; Nurrohmawati, 2023). The products produced also go through a quality control process before being marketed by involving teachers and industry partners (Wibowo & Sohidin, 2025). In addition, there are supporting factors such as teacher competence, funding support, availability of materials and equipment, production-based learning methods, and market opportunities (Dasna et al., 2024; Kristanto et al., 2023). Meanwhile, inhibiting factors include limited practice materials, machine maintenance, limited product marketing, and limited practice time (Nurrohmawati et al., 2023; Stuart et al., 2021). Overall, the implementation of 7M-based Teaching Factory learning management has been proven to support the improvement of the quality of student products in vocational education in the fashion sector.

## 4. CONCLUSION

The results of the study show that the management of Teaching Factory learning at SMK Negeri 1 Sangatta Utara contributes to improving the quality of products for students of the Department of Fashion Design and Production through 7M (Man, Money, Material, Machine, Method, Market, Minute) based management. Planning is carried out systematically through synchronization of the curriculum with industry needs, funding management, provision of materials and equipment according to standards, implementation of project-based learning, market planning, and timing with a block system. Organizing is carried out through a clear division of tasks between the principal, vice principal, department head, teachers, and students, so that the production process runs in a structured manner.

The implementation of learning is carried out through real production activities that follow industry SOPs and are oriented to market needs, thus providing contextual work experience for students. Supervision is carried out on an ongoing basis through learning supervision, resource management, and product quality control involving industry partners.

Supporting factors include teacher competence, funding support, availability of materials and equipment, production-based methods, and block systems. Meanwhile, inhibiting factors include limited practice materials, machine maintenance, student regeneration, limited product marketing, and limited practice time. Overall, the Teaching Factory's learning management has been quite effective in improving the quality of student products, although it still needs to be strengthened in several aspects of management and policies.

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