

## Does Teaching Factory Matter for Vocational School Students?

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**Abstract:** This research aims to understand the planning, implementation, relevance to student competency skills, as well as supporting and inhibiting factors of the teaching factory. This study involved a qualitative descriptive to gain a better understanding of the phenomenon and incorporated with observation technique, interviews, and documentation. The data in this research was divided into two: primary and secondary data. The primary data were collected from selected informants, and the secondary data was gathered from supporting documents in this research. The collected data further analyzed using the triangulation technique for validity and data reduction to provide a conclusion. The findings indicate that planning is realized by creating an organizational structure that manages the teaching factory. In addition, in planning students to practice in the teaching factory lab and carry out the tasks in the lab, for relevance to the competency skills in the classroom according to the existing basic competence which relevant to the existing practice in the teaching factory lab for the supporting factors, the facilities and infrastructure are already supportive. The human resources are adequate, and the inhibiting factor in terms of assistance from teachers in the lab is still lacking.

**Keywords:** *Teaching factory, Online business, Marketing, Students' activities*

### INTRODUCTION

Preparing students after graduation is a global challenge, and the schools respond to this issue by providing several relevant programs (Maryanti et al., 2020; Apriana et al., 2019). This situation also occurs for vocational schools graduates to meet the qualification and requirement for job vacancies (Suleman, 2018). For vocational school graduates, the skills for job preparation must be mastered, which impacts more high competition among students who are already qualified to compete in the world of work (Hasan & Pardjono, 2019). Therefore, education in vocational schools should be more advanced in providing insight to the students.

Vocational schools are required to develop the quality of human resources to adapt to the current industrial developments (Stachova et al., 2019). In addition, improving the quality of education is one of the efforts that vocational schools should provide to improve students' self-potential (Romlah & Latief, 2021). This enhancement should be programmed by implementing learning programs that have adapted to the progress of science and technology that is currently developing. Therefore, students are required to have quality and competent potential and compete in the business and industrial world.

Vocational school is an institution that produces a skilled and competent workforce in their fields and so that they can compete in today's increasingly advanced global world (Wheelahan & Moodie, 2017). Similarly, vocational schools are expected to prepare graduates who can adapt to the abilities needed by the business world, both business and industry. Vocational school graduates must keep pace with the current developments by increasing the effectiveness and efficiency of

production (Lent, 2018). Vocational school graduate students must be competent and have the qualities needed by the industrial world today and must be in accordance with the demands needed in the industrial world (Samani, 2018).

Vocational schools need to provide the necessary facilities and infrastructure for the learning process in the form of productive educators as well as adequate workshops and laboratories (Dewi et al., 2018). The industry also has a role in providing input and encouragement for implementing the curriculum in vocational schools and providing work practice facilities for vocational school students according to the expertise program (Murniati et al., 2016). A preliminary study by Sulistiani and Yulianto (2018) suggests that efforts to accept graduates of vocational schools in the world of work or industry can be carried out in ways such as: providing adaptive abilities which include applied mathematics and science skills, strengthening abilities entrepreneurship, enhancing basic ICT skills, and implementing teaching factories.

According to Yoto and Marsono (2020), the teaching factory is developing the production unit, namely the application of the industrial partner system in the existing production unit in the vocational schools. The production unit is a business development in vocational schools to increase school income and can be used for equipment maintenance, human resource development, and to provide real work experience as well as actual work in an industrial company (Diwanggoro, 2020). Implementing the teaching factory is to combine business and educational concepts relevant to and follow the real work atmosphere. SMK Muhammadiyah 2 Malang is a good representation of a vocational school that has implemented teaching factory-based learning. Learning that uses a teaching factory is usually in the area of expertise in online business and marketing, and this learning continues to this day and is proliferating (Maryanti et al., 2020). In order for the teaching factory to run smoothly, before implementing this learning, schools must prepare carefully and structure what is needed. When there are obstacles, the school is obliged to find the right solution so that this learning will run smoothly and develop rapidly.

Therefore, there is a greater understanding of the evaluation and assessment of the development of the teaching factory learning method. In addition, it is also a benchmark to see the development of students who used to be before the teaching factory learning model and after the implementation of the teaching factory learning model whether there was an increase or not. This study is different from previous studies because this study refers to students' understanding after the implementation of the teaching factory learning model.

## **METHODS**

This research adopted qualitative descriptive research to gain a better understanding of the phenomenon. In this study, we involved the interview method, documentation and looked at the documents on the development of the teaching factory at SMK Muhammadiyah 2 Malang. SMK Muhammadiyah 2 Malang is a good representation of a vocational school that has implemented factory-based learning teaching. Additionally, SMK Muhammadiyah 2 Malang has implemented the teaching factory program at the school was still relatively new, so researchers

conducted research there to see developments in the implementation of learning methods using the teaching factory that had been effectively implemented in SMK Muhammadiyah 2 Malang. The selection of respondents by the researchers was taken from the online business and marketing class and the teaching factory management teacher. Respondents were taken from the second-year study students considering better understanding and understanding the implementation of the teaching factory learning method.

Data analysis in research researchers used three steps in analyzing data, namely data reduction, data presentation and drawing conclusions. Data reduction summarizes the results of research, sorting out the main things and focusing on essential things and discarding what is not needed (Silverman, 2020). After reducing the data, the next step is to present the data. In qualitative research, data presentation can be done in the form of brief descriptions, charts, relationships between categories, flowcharts and the like. In presenting the data, the results of interviews and observations made by researchers who have focused on important results are described in the form of a description or chart of research results to facilitate researchers in concluding. The third is drawing conclusions, namely the results of data that have been processed and analyzed, then conclusions are made whether the teaching factory method applied is effective or not. The delivery of conclusions is in the form of a narrative of the results of the research.

## RESULTS & DISCUSSION

**Table 1.** The results obtained in research and observation

No.	Indicator	Teacher	Students
1	Consumer communication	Communication made by students to consumers is good, polite and courteous. Therefore, the assessment is taken when students face consumers during the buying and selling process or when there are consumers who complain, then we value the attitudes and ways of speaking of students to these consumers.	<p><b>Student (S.1)</b> Students are taught to communicate well, in class learning is also adapted to the theory and how to respond to complaints well.</p> <p><b>Student (S.2)</b> We are taught how to communicate well and students are also taught how to solve problems if there are consumers who ask or complain.</p> <p><b>Student (S.3).</b> The main thing is to communicate if there are customers who ask about such products, then we need also use smile, greet, manners so that it looks polite to consumers.</p> <p><b>Student (S.4)</b> During class learning about business communication, we are taught about recommending products, doing smile, greet, manners to consumers, and responding to complaints that are</p>

			good, so in the evaluation process we have to practice it all. Then it is assessed by the teacher
2	Product Setup	The evaluation carried out was assessed from whether students had applied the FIFO (First in First Out) method well and neatly arranged the product.	<p><b>Students (S.1)</b> Here to organize our products using the FIFO method so that the first item that goes in is the first one out. In the evaluation, we are taught to arrange the product properly, neatly and must be in accordance with the method applied.</p> <p><b>Student (S.2)</b> We are judged by the way we arrange the products well, then which products are the most popular at school, so we arrange them on the front so that they are easily seen by consumers.</p> <p><b>Student (S.3).</b> The product arrangement uses the FIFO method and we are required to arrange the product that comes first then it is the first one out. If there is a product that has been around for a long time and is approaching the expiration date, we will arrange the product in the discount product section.</p> <p><b>Student (S.4).</b> We classify products from types of food, beverages, cakes, soaps. In addition, we must continue to apply the FIFO method.</p>
3	Operate Cash Register	This is assessed from students whether they are capable of operating cash registers or cash registers, product labeling, product barcodes, and also entering stock items into computers.	<p><b>Student (S.1)</b> We must enter the stock of goods on the computer, then we check whether there are goods that want to run out or have run out. In addition, it also runs a cash register and product barcodes.</p> <p><b>Student (S.2)</b> We are judged by running the cash register, continuously entering new products into the computer so that later it can be scanned</p> <p><b>Student (S.3)</b> We are judged by our responsiveness in serving consumers at the cashier so that consumers do not wait too long,</p>

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			then we enter new items into the computer.
			<b>Student (S.4)</b> In practice, we are fluent or not in running and operating the cash register, besides that we are also taught to pay cash and non-cash because here also use the point system and some use ATMs.
4	Sales Report	Sales reports are carried out every day so students are required to calculate the amount of money that comes in, money goes out (buying products that run out) and the most important thing is that students have to calculate the income for that day. which will be given to the school treasurer.	All students answered almost the same, namely regarding the calculation of expenses and income as well as the profit/loss earned that day.
5	Check Items	Stock Students are required to check the stock of goods/products both on the computer and on the shelf whether it is correct or something is missing. Therefore, we assess the performance of students in checking the stock of goods and if there is a problem, we will see how they solve the problem. It is a value for students.	All students answered in the practice that was carried out which included checking the stock of goods on the shelves and on the computer whether they were appropriate. If there is a difference in the stock of goods on the shelf and the computer, the student must find a solution and find out where the error lies, whether there is a missing product or from a computer that entered the wrong stock.

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### **The Implementation of *Teaching factory***

The implementation of the teaching factory starts from the planning process, and the implementation of the teaching factory that the researchers obtained include: a) The first teaching factory was formed in 2018, b) the capital used in establishing a teaching factory is partly from the government and partly funds from schools, c) In the formation of an organizational structure The teaching factory consists of advisors, coordinators, secretaries, treasurers, coordinators I/II/III, and promotion/procurement/shipping/general sections, d) time management system in the implementation of teaching factories implemented by students of SMK Muhammadiyah 2 Malang, namely day four students from the first year and second-year study. They were starting from the first hour to the last hour of class. The schedule has been determined by the manager of the teaching factory, e) Students who are on picket are required to serve consumers well, arrange products neatly, operate the cash register correctly and always cooperate well between picket groups.

### **Relevance of Teaching Factory**

The relevance in implementing the teaching factory at SMK Muhammadiyah 2 Malang is as follows: first, the progress that students acquire in implementing the teaching factory is increasing, marked by the increase in the values of the subjects at school. Second, students' knowledge about the world of work is increasing with the existence of a teaching factory lab, and third, students can calculate from the capital and profits they obtain while on duty in the lab. This knowledge can be applied in everyday life.

### **Supporting and Inhibiting Factors Teaching Factory**

Factors that support the implementation of the teaching factory are adequate and very helpful facilities such as shelves, refrigerators, cash registers, storefronts. Furthermore, the raw materials for products made by the SMUD'S MART lab are easy to obtain and support from the community by placing wet cakes for sale at the SMK and coming to buy goods at the vocational schools. Meanwhile, the inhibiting factor in the implementation of the teaching factory at SMK Muhammadiyah 2 Malang is the absence of employees who accompany students when doing picket in the SMUD'S MART lab. Then the arrangement of goods must be in accordance with the FIFO (First in First out) method, but sometimes there are students who just arrange so that the newly arrived items are placed at the front of the line raw materials that run out are sometimes a barrier, and product marketing is sometimes a lot of obstacles, especially from competitors.

### **Planning of Teaching Factory**

Planning is a basic process in deciding the goals and methods used to achieve these goals (Freeman & Lewis, 2016). Likewise, the teaching factory, which is a production-based learning model, requires a plan that is in the production unit itself. Planning is an activity carried out to achieve goals that are effective and efficient. The concept of planning itself includes vision, mission, goals, and long, medium and long-term programs.

The vision and mission of SMK Muhammadiyah 2 Malang is a guide for all activities carried out by schools in the learning process. The vision is an expectation that the school wants to achieve, while the mission is an effort/action taken to realize the school's vision. According to Cahyaningrum and Agus (2020) teaching factory is an industrial-based learning system that utilizes production units as a place to run a business or production process. Therefore, in planning the implementation of the teaching factory, it is highly recommended that students can learn in real terms in accordance with the current situation in the industry.

### **The Implementation of Teaching factory**

The implementation of the teaching factory at SMK Muhammadiyah 2 Malang has been running properly, which is already generating profits as the purpose of the teaching factory and helping the student learning process by making the teaching factory a medium of practice and student business learning to improve the entrepreneurial spirit as the goal of vocational school in using this learning model. In the implementation of the teaching factory of vocational schools, in order to

achieve the objectives, supervision is needed. Supervision is carried out by the principal and the head of the development team to measure how much of the implementation of the teaching factory program has been achieved and has not been implemented. The supervision carried out by the head of the development team must be considered properly so that the implementation of the teaching factory can achieve the specified goals.

To support the implementation of the teaching factory program at SMK Muhammadiyah 2 Malang, a collaboration, for example, was held with PT Ramayana Lestari Sentosa Tbk. A teaching factory is the same as a business laboratory. Marketing students can practice skills and abilities according to the field taken, and this is in accordance with the aim of vocational school in establishing a teaching factory, namely as a business center in schools. The teaching factory as a business laboratory is one of the supports for the student learning process. Hofstein (2017) states that one of the roles of the school laboratory is as a place to train skills and abilities as well as habits in finding problems encountered and a thorough attitude in doing things.

The learning system by combining the industrial curriculum structure with the school curriculum must be carried out correctly and in accordance with the vision and mission. Therefore, after the combination of these curricula, when implementing the practice in the field, students do not feel foreign to the industrial world. The practical implementation system by applying clear and concrete results means that each individual student must be able to produce both in the form of producing goods and services. That is the benchmark that the teaching factory is successful or not achieved by every student. In addition, one of the functions of the teaching factory laboratory is as a balance between theory and practice of science and uniting theory and practice carried out in the laboratory (Kirillov et al., 2015). In addition, facilities and infrastructure are important factors for the success of the implementation of the teaching factory. The infrastructure provided by the vocational schools for the teaching factory laboratory is a business center room, showcase, refrigerator, freezer, storefront, cash register, barcode, calculator, scales, cup sealer, and cash register.

Regarding the feasibility of implementing a teaching factory at SMK Muhammadiyah 2 Malang, it has been feasible in the learning carried out and the practice implemented. This can be seen from the development of the teaching factory from the beginning of its implementation to the present, which has experienced a significant increase. The teaching factory, which is usually called SMUD'S MART, has a shape similar to a large retail business, starting from store interiors and tools that are usually used in business activities. After the implementation of the teaching factory, then an evaluation process is held from students. To find out whether the implementation of the teaching factory learning model has been successful or not. In the research conducted, the researchers got the data used to evaluate the teaching factory learning model as follows.

### ***Relevance of Student Competence with the Implementation of Teaching Factory***

In the implementation of the teaching factory, students have begun to develop in terms of academic value and knowledge. With SMUD'S MART, students can feel real work from the beginning to the end of calculating the profit earned. It is hoped

that one day the students will work, they will already know the ins and outs of the industrial world. Students are also taught to sell their products to the public via the internet or door to door. The teacher's reference in assessing whether the student has started to increase is measured using the profit obtain or not. If the profit earned increases, the student has developed insight.

As the statement from the student (S.4) "after the teaching factory, the value we acquire is increasing and the experience I acquire is also increasing. Because every subject taught in our department has something to do with our teaching factory." In addition, students (S.1) also added, "The subjects taught in class are, on average, related to the process of implementing the teaching factory that we do during picket. Therefore, from the subjects that explain the procedures for arranging good things, we also practice them in the lab. The insight we have is not always about theory but also about what we do in the world of work that we also feel."

### ***Supporting and Inhibiting Factors***

There are two factors that must be considered by the school in implementing the teaching factory in SMK, namely the supporting factors for the implementation of the teaching factory and the inhibiting factors for the implementation of the teaching factory. The supporting factors of the implementation of the teaching factory are the existing business capital and SMK Muhammadiyah 2 Malang received assistance from the government for the process of implementing the teaching factory. The obstacle is that the capital provided is still insufficient to meet good laboratory standards, so the school adds capital using cash from the school. According to Buttice et al. (2017), business capital is not only money but also in the form of materials other than money, including business premises, equipment, human resources, and others.

Human resources become supporters in the implementation of the teaching factory at SMK Muhammadiyah 2 Malang because students in a vocational school are required to carry out practices that have been scheduled by the teacher. Proper manpower planning in business ventures can reduce costs, thereby increasing income/profits (Chowdhury et al., 2015). Thus, it hampers the student learning process because of the limited assistance of students when practicing in the laboratory. Facilities and infrastructure are the most important supporting factors for the implementation of teaching factories in vocational schools. Schools have provided facilities and infrastructure so as to support the learning process and student practice well. Therefore, students can learn well and practice without equipment barriers.

## **CONCLUSION**

This study aimed to analyze the effectiveness of teaching factories in SMK to improve the competence of students majoring in marketing. The findings indicate that the teaching factory planning process in vocational schools affects the organizational system in schools. An organization consisting of teachers and principals, and other staff. They have their own responsibilities in managing the teaching factory. Furthermore, the process of implementing the teaching factory in SMK is able to



improve students' abilities and expertise in carrying out practical tasks such as cleaning rooms, arranging products, serving consumers, operating cash registers, and calculating sales reports. The teaching factory is also used as a place of learning for students to practice doing practical fieldwork activities. Relevance, the implementation of a teaching factory in vocational schools improves student learning outcomes and knowledge of the industrial world. Students studying theory in class can practice it in the SMUD'S MART lab so that the competencies obtained by students can be maximized by implementing this teaching factory learning model. Supporting and Inhibiting Factors consist of human resources, business capital, facilities, and infrastructure that have supported the implementation process, while in terms of inhibiting the implementation of teaching factory in terms of student assistants in the laboratory, which still inadequate.

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