

# Implementation Of The Teaching Factory Learning Model In Improving Students' Competence At State Vocational High School 1 Pacet

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**Submission date:** 18-Jul-2024 10:26AM (UTC+0700)

**Submission ID:** 2418516185

**File name:** LENCANA\_-\_Vol.\_2\_No.\_4\_Oktober\_2024\_hal\_57-69.pdf (807.68K)

**Word count:** 4762

**Character count:** 27434



## Implementation Of The Teaching Factory Learning Model In Improving Students' Competence At State Vocational High School 1 Pacet

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**Abstract.** This research aims to obtain a fact-based picture in the form of data and information regarding the implementation of the Teaching Factory learning model at SMK Negeri 1 Pacet. Qualitative research methods are used to produce a comprehensive presentation based on findings in the field. The efforts made in education are on the learning processes and models used to achieve educational goals. Vocational High Schools (SMK) are schools that aim to prepare students who are skilled and ready to enter the world of work. To realize this goal, one of the flagship programs is the Teaching Factory. Teaching Factory is an effort to present the real world of work in an educational environment. The objectives of this Teaching Factory are (a) increasing the competency of students (b) increasing the entrepreneurial spirit of graduates (c) producing value-added products (goods/services) (d) expanding the scope of recruitment opportunities for vocational school graduates, and (e) increasing collaboration with the business/industrial world. Based on the results of the research, it can be concluded that the implementation of Teaching Factory learning at SMK Negeri 1 Pacet on the Agribusiness Food Crops and Horticulture skills competency has gone well and can produce superior products and has been accepted as an industry standard by the market so that it can be used as a reference for other schools to implement Teaching Factory learning.

**Keywords:** Learning Model, Teaching Factory, Product, Block Schedule, Job sheet.

### BACKGROUND

Vocational High School (SMK) is a vocational education unit at the secondary education level which aims to prepare students to be able to work, either independently or to fill existing job vacancies as mid-level workers in accordance with their competencies (Law No. 20/2003). Vocational schools are required to be able to equip their graduates with a set of competencies that suit the needs of the workforce/industry. Thus, vocational education programs are more oriented towards developing students' abilities to be able to carry out certain types of work in industry. In its development, the orientation of vocational school education programs which only specifically prepare workers to be able to work in industry has had weaknesses, especially when linked to recent developments in Indonesian industry. However, many multinational companies operating in Indonesia are groups of companies or industries that are very easy to move (foot-loose industries). Its industrial activities are unable to form an industrial base, because its business operations are not linked to local industry, either as upstream or downstream industries.

In industrial conditions in Indonesia and individual skills resulting from vocational school education in Indonesia, there are currently very significant disparities. This is reflected in the comparison of workforce absorption of vocational and high school graduates from 2017

Received: Mei 12, 2024; Revised: Juni 18, 2024; Accepted: Juli 15, 2024; Online Available: Juli 18, 2024;

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to 2022. Based on data from the Central Statistics Agency. In 2017, the job absorption presentation of vocational school graduates was smaller than that of high school graduates, namely in 2017, high school employment was 91.68% and vocational school was 88.62%, in 2018 high school employment was 92.10% and vocational school was 88.82%, in 2019 high school employment was 92.22% and vocational school 89.64%, in 2020 the absorption of SMA was 90.14% and vocational school was 86.45%, in 2021 the absorption of SMA was 90.91% and vocational school was 88.87%, in 2022 the absorption of SMA was 91.43% and vocational school was 90.58% %.

Ideally, the percentage of job absorption for vocational school graduates is greater than that of high school graduates, because students are equipped with the skills to be ready to enter the world of work. Vocational school graduates are assumed to receive skills training, but are relatively unable to keep up with the rapid pace of industrial development in Indonesia. This condition can be caused because vocational school output tends to be oriented towards only building skills. Meanwhile, current conditions in the world of work require more general skill specifications, namely logical thinking skills (Ministry of Education and Culture, 2016:3; Rangunath, Mohan, & Venkateshan, 2013:221).

The implementation of vocational education programs must be reorganized so that they are truly oriented towards programs needed by society, even though society's need for vocational education programs is developing in line with changes in the political, economic, socio-cultural fields, as well as science and technology. In response to the various challenges above, there is a gap between vocational school graduates on the one hand and the needs of the industrial world on the other, so vocational high schools must be able to make breakthroughs in terms of curriculum development and learning.

In order to improve the quality of education, schools need to choose a learning model that can improve students' competence so that they are more competent and meaningful in learning. One approach to learning that is based on production and learning in the world of work is learning or known as the Teaching Factory (TEFA) learning model. This Teaching Factory supports quality education and training that is oriented towards school relations with the industrial and business world in order to increase competence. . Other reasons are the increasingly expensive costs of students' practical materials, equipment that must be maintained in standard condition, motivation to improve the welfare of the school community and create self-confidence and pride for graduates.

In general, learning with the Teaching Factory learning approach aims to train students to achieve punctuality, quality required by industry, prepare students according to their skill competencies, instill a work mentality by adapting directly to industrial conditions and situations, mastering managerial skills and being able to produce results. finished products that have industry quality standards.

Teaching Factory is considered capable of creating students and graduates who have high competence and are able to understand the problems and conditions that occur in the industrial world in a complex way because learning activities at school have been combined with activities in industry so that the competency gap in both fields can be bridged. This is in accordance with the opinion expressed by Wijaya et. al that the Teaching Factory approach program combines Production Competency-based Training (CBT) with training carried out at the students' place of study. Teaching Factory learning is a learning concept in a real atmosphere, so that it can bring students closer to the atmosphere of the business/industrial world. The government implements Teaching Factory learning as an effort to achieve the vision of creating vocational schools that can produce graduates with an entrepreneurial spirit who are ready to work, intelligent, competitive, and have national identity, as well as being able to develop local advantages and be able to compete in the global market. Teaching Factory as a learning approach is considered quite effective in increasing graduate competency.

There are several important reasons why learning in schools using Teaching Factory is necessary. A) can improve the competence of students and students, b) can encourage the creation of a culture of quality in schools, c) can create an industrial culture in schools, d) diversification of financial resources in schools, e) a forum for students as a place for teacher creativity and innovation , f) facilities for developing entrepreneurship in schools, g) internships and accommodation for graduates who have not yet found work in industry or the business world.

The implementation of the Teaching Factory to improve psychomotor competence is by 1) providing 1 student 1 media during practice, 2) conditioning the practice carried out by students so that they are able to produce quality products, (3) setting standards in accordance with those in the industry in each practice carried out. run by students, (4) provide more opportunities for students to practice the skills they have in Teaching Factory activities.

One of the goals of the Teaching Factory is to increase student competency. Increased competency is obtained by involving students in Teaching Factory activities. It is hoped that the implementation of the Teaching Factory in vocational high schools can increase the

competency of graduates so that they are able to be maximally absorbed into the industrial world and are able to become entrepreneurs. The absorption of vocational school graduates to be able to work in the industrial world and be able to become entrepreneurs will play a role in reducing the unemployment rate in Indonesia. One of the competencies that students must have is psychomotor competency. Psychomotor is a domain related to the ability to act or skill (skill) after a person receives and carries out certain learning experiences. So if learning uses the Teaching Factory learning model, it is hoped that it can increase student competence.

To find out initial information regarding the implementation of Teaching Factory learning at SMK Negeri 1 Pacet, I conducted a preliminary survey by interviewing teachers as those in charge of Teaching Factory who teach competency skills in Agribusiness, Food Crops and Horticulture. The conclusion of the interview results is that student learning in producing products/services is still ongoing. accompanied by a technician cannot be done completely by students independently.

## THEORETICAL STUDY

### Prior Research

Research conducted by Reni Muhitasari (2020) entitled Teaching Factory Learning Management in realizing the Entrepreneurial Spirit in Fashion Skills Competency Students at SMK Negeri 1 Sewon Bantul. The research results show that (1) Teaching Factory learning management is seen in (a) planning goals and targets to be achieved, needs analysis, strategic formulation to achieve goals and targets, required resources, implementation activities, and monitoring and evaluation plans, ( b) organizing by forming a team and organizational structure, setting schedules, coordinating with related parties, analyzing conditions and potential, preparing work steps, analyzing curriculum activities, analyzing student activities, (c) implementing learning in accordance with industry standards, (d) evaluating Teaching Factory learning achievement analysis does not yet exist; (2) supporting factors in Teaching Factory learning are that the practice space and tools are in accordance with industry standards, school management supports and collaborates with each other, teachers who are competent in their fields, become accessors, and have OJT experience in relevant industries, as well as the existence of opportunities and facilities to carry out Teaching Factory learning so that students' entrepreneurial spirit is realized.



Research conducted by Dyah Ayu Fladya Rizky (2018) entitled The Influence of Learning Patterns, industry support, and involvement in the management of production & service units on the success of students in participating in the Teaching Factory program at SMK. mResearch Results The results of this research show the following results: (1 ) there is a simultaneous influence of learning patterns, industry support, and involvement in UPI management on students' success in participating in the Teaching Factory program, namely with a contribution value of 65.6%; (2) there is an influence of learning patterns on student success in participating in the Teaching Factory program; (3) there is an influence of industry support on student success in participating in the Teaching Factory program; (4) there is an influence of involvement in production & service unit management on students' success in participating in the Teaching Factory program. The variable that has the highest influence is involvement in the management of production & service units, with a contribution of 32.4%.

This research has similarities, namely learning using the Teaching Factory model, only different skill competencies and research using quantitative, while the research I conducted used qualitative, but the similarities with Teaching Factory learning can increase student competency and produce goods/services. This section describes the relevant theories that underlies the research topic and provides a review of several relevant previous studies and provides a reference and basis for this research to be carried out. If there is a hypothesis, it can be stated unstated and does not have to be in a question sentence.

## RESEARCH METHODS

In this research, researchers used a qualitative approach with analytical descriptive research. According to Sugiono, qualitative research is research through researchers who are positioned as key instruments, data collection techniques are carried out in a combined manner and data analysis is inductive. Qualitative methods are methods used to research social sciences by collecting and analyzing data in the form of words, both spoken and written, as well as human actions without using calculations or quantities of the qualitative data that has been obtained and thus not analyzing numbers.

The type of research method chosen is analytical descriptive, while the definition of analytical descriptive method is a method that functions to describe or provide an overview of the object under study through data or samples that have been collected as they are without carrying out analysis and making conclusions that apply to the general public. In other words, analytical descriptive research takes problems or focuses attention on the problems as they

exist when the research is carried out, the research results are then processed and analyzed to draw conclusions.

With this descriptive qualitative research, researchers are trying to reveal the implementation of the Teaching Factory learning model in improving the competency of Pacet 1 State Vocational High School students, as it happens in the field, and tries to avoid the view of the researcher's subjectivity. The data researched and reported in this thesis are the results of observations, interviews and documentation.

## RESULTS AND DISCUSSION

Findings from accompanying informant II, Deputy Principal for Industrial Relations (WH) SMK Negeri 1 Pacet, sub focus I How is the Teaching Factory learning plan at SMK Negeri 1 Pacet competency in Agribusiness, Food Crops and Horticulture?

### Interview data (AW-WH)

As a reference for the implementation of the Teaching Factory at SMK Negeri 1 Pacet, namely the 2013 Education Unit Level Curriculum (KTSP) in accordance with what was issued by the Department of Education, the curriculum at SMK Negeri 1 Pacet is aligned with the business world and the industrial world. The aim of holding Teaching Factory learning at SMK Negeri 1 Pacet is to improve students' competence. The Teaching Factory cannot be separated from the business world/industrial world by establishing cooperation or partnerships with the business world/industrial world in the form of industrial visits, student street vendors, teacher internships, using industry as guest teachers and industry helping to guide Teaching Factory activities in schools.

To implement the Teaching Factory, a learning tool that is specifically designed to deliver student competency is needed. This tool is specially prepared and can involve industry in its preparation, such as determining what products will be made that are acceptable in the industry. As for these tools, first the teacher must map the products that will be made or produced in the form of goods/services, map the allocation of learning time dividing productive hours taught theoretically and practically, create lesson plans, job sheets, etc.

Teaching Factory learning consists of several components, namely learning using a block system, having job sheets and implementing industrial culture in schools. Blocking learning at SMK Negeri 1 Pacet is tailored to the needs of each individual's skills competency, such as the skills competency for Agribusiness, Food Crops and Horticulture using a three-month blocking system.

Making job sheets is carried out by subject teachers as a guide for students in learning so that students make goods/services more focused and precise. Industrial Culture in Teaching Factory learning is a very important factor because it produces, like activities in industry, this requires collaboration with industry so that the characteristics of students are in line with industry demands in terms of coming to work, wearing uniforms, using APKs, etc. The management of the Teaching Factory must involve all parties, in this case the business world/industrial world plays an important role in developing the Teaching Factory as a quality control in producing goods/services so that student competence meets the demands of the business world/industrial world.

#### **Observation Data (AO-WH)**

The observation data was collected to complete the results of interviews with accompanying informant II, deputy principal for curriculum at SMK Negeri 1 Pacet. Observe and analyze the role of schools with the business/industrial world at SMK Negeri 1 Pacet. SMK Negeri 1 Pacet prepares graduates who are ready to work or become entrepreneurs. This shows the school's seriousness in preparing students by equipping them with good knowledge, skills and attitudes in facing the business/industrial world.

Several breakthroughs to achieve students' increased competency by applying positive habits to students based on industrial culture such as character education programs which are implemented as a form of preparing students to face the business/industrial world. Apart from that, bringing in guest teachers from industry in developing education where Students can receive information directly from the resource person.

Observing the process of implementing Curriculum synchronization at SMK Negeri 1 Pacet. One of the collaboration programs with the business world and the industrial world is a curriculum synchronization program between schools and the business world and the industrial world so that industry provides input on things that need to be added to the curriculum to improve student competency.

#### **Documentation Data (AD-WH)**

Documentation data used to strengthen the results of interviews with accompanying informant II, deputy principal for Industrial Relations (WH) at SMK Negeri 1 Pacet, are:

#### **Collaboration with the business world / industrial world of SMK Negeri 1 Pacet**

In order to advance education at SMK Negeri 1 Pacet, it is necessary to collaborate with various institutions, both government institutions and other institutions that are relevant to the world of education. SMK Negeri 1 Pacet has a charter of collaboration with more than 100 business/industrial worlds, which is proof of cooperation.



The Agribusiness Food Crops and Horticulture expertise competency has 30 collaborations with Du/Di partners which include PKL collaboration, Curriculum Synchronization, Teaching Factory Development, Teacher Internships, Guest Teachers, graduate placements etc.

## CONCLUSIONS AND RECOMMENDATIONS

The process of achieving success in the Teaching Factory program involves several factors, not apart from the role of teachers, students and industry parties who are the keys to developing Teaching Factory learning implemented at SMK Negeri 1 Pacet. Based on the results of the analysis carried out through previous research with reference to the focus and sub-focus that have been determined and formulated, it can be concluded as follows:

1. Teaching Factory Learning Planning
  - a. The learning model applied by the Teaching Factory program refers to PP No. 41/2015 article 6 paragraph 1 uses two curricula, namely the 2013 curriculum and the applicable curriculum structure which has been synchronized with the business world and the industrial world.
  - b. The preparation of Learning Tools follows the provisions of the Ministry of Education and Culture which has the specificity of making skills assessment instruments which are made in the form of job sheets, integrated with the demands of basic competencies, products and availability of learning time, equipped with assessment rubrics and assessment formats.
  - c. The parties involved in the Teaching Factory program consist of all school members starting from the principal, deputy principal, head of expertise competency, teachers and the industrial/business world.
2. Implementation of Teaching Factory Learning
  - a. The Teaching Factory learning process model uses a curriculum that is synchronized with the industrial/business world, taking into account the domains of attitudes, knowledge and skills. 30% theory and 70% practical learning is carried out in a laboratory or greenhouse.
  - b. The product is a means for students to hone their skills. Through the implementation of the Teaching Factory learning model, the following benefits will be obtained: Increased efficiency and effectiveness in the delivery of soft skills and hard skills to students, increased collaboration with the business/industrial world through curriculum alignment, providing instructors,

transferring knowledge/technology, introducing industrial standards and culture, increasing the competence of educators and education staff through interaction with the business world/industrial world, changing the learning paradigm and work culture at SMK Negeri 1 Pacet.

- c. Food Crop and Horticulture Agribusiness Skills Competency (ATPH), is one of the skill competencies in the field of Agribusiness and Agrotechnology Skills. The aim of the Food Crops and Horticulture Agribusiness skills competency is to equip students with the knowledge, skills, attitudes to be competent in the basics of Plant Cultivation, Agribusiness Food Crops, Vegetable Plant Agribusiness, Fruit Plant Agribusiness, Ornamental Plant Agribusiness, Nursery and Plant Tissue Culture, Creative Products and Entrepreneurship.
- d. The main components of the Teaching Factory learning model according to the Teaching Factory technical guide consist of: Product, Block schedule, Job sheet. These three components are interrelated and inseparable from the planning stage to the implementation stage.
- e. The preparation of the block schedule must be able to deliver Corporate Culture achievements including honesty, self-confidence, discipline, responsibility, tolerance and cooperation. Block schedule settings are adjusted to skill competency needs. Food Crops and Horticulture Agribusiness skills competency using 3 month blocks.
- f. The organizational management implemented cannot be separated from the organizational structure to manage the implementation of the Teaching Factory. The Teaching Factory program requires managerialization, so that it can be implemented to prepare the essential components of the Teaching Factory.
- g. Evaluation of achievements involves various parties, especially the deputy principal in the field of facilities, to evaluate equipment to implement TEFA well, such as labs, workshops and simulation rooms with equipment adapted to industry. Input from industry is the key to evaluation after sending students to internship programs in industry. The implementation of career guidance and attitude development through morning assembly at religious events and cleanliness training for picking up rubbish is carried out to improve the quality of students at work.

#### A. Implications

Based on the results of this research, implications can be found covering two things, namely theoretical and practical implications. The theoretical implications relate to the implementation of Teaching Factory learning, while the practical implications relate to student competency and absorption in the world of work.

##### 1. Theoretical implications

Teaching factory is a process of learning skills or production-based skills that produce goods and services that meet market or consumer demands based on actual work procedures and standards.

##### 2. Practical Implications

The implementation of Teaching Factory learning has actually shown that it can increase the competency of students so that the quality of graduates is high quality and can be absorbed by the business world/industrial world in accordance with the needs of the industry.

#### B. Recommendation

Based on the results of research on the implementation of teaching factory learning at SMK Negeri 1 Pacet, the following recommendations can be made:

##### 1. Teaching Factory Learning Planning

- a. All school members should understand the same understanding regarding the development of the Teaching Factory model and be able to actively participate in supporting school activities
- b. It is best to carry out socialization, especially for school residents who have just joined SMK Negeri 1 Pacet.

##### 2. Implementation of Teaching Factory Learning

- a. Learning plans are made at the beginning of the school year and can be adjusted to certain conditions so that they do not interfere with the planned program.
- b. The block schedule has been made in such a way that there is a need for supervision and guidance from the implementation curriculum in the field.

### 3. Student competency

- a. Student competency is good. There needs to be an even distribution of students regarding competency in Agribusiness, food crops and horticulture.
- b. The role of technicians is still dominant in maintaining paprika cultivation. There needs to be trust in students to increase competence.
- c. Promotion should be carried out by all school members either through personal or institutional social media accounts to improve the Teaching Factory at SMK Negeri 1 Pacet.
- d. There is a need for broader cooperation, especially cooperation with international standards, because it is in accordance with the school's vision of absorbing graduates with international standards.

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