

## **Implementation of Teaching Factory to Improve Entrepreneurial Competence of Vocational High School Students**

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### **ABSTRACT**

According to data from the Central Statistics Agency (BPS), the unemployment rate in Indonesia in 2020 is still high at 9.77 million people or around 6.26% of the total productive age or labor force. When it was viewed from the level of education, it turned out that vocational high school graduates occupied the top position as a contributor to the unemployment rate in Indonesia, it was 13.55%. This high number of unemployed because the competence possessed by Indonesian human resources was still low or because there were not enough job opportunities to accommodate all graduates of the workforce. To overcome this, the government through the Ministry of Education and Culture, the Directorate of Vocational High School Education (SMK) was trying to find solutions to overcome these problems. This paper discussed a literature review about the teaching factory program in Vocational High Schools as one of the programs suggested by the government to be implemented in Vocational High Schools. Teaching factory was a learning activity where students directly carried out production activities in the form of goods and services in the school education environment, with the aim of training work competencies and having competencies for entrepreneurship. With the implementation of this program, it was expected that Vocational High School graduates were able to create jobs and at the same time opened up job opportunities for others and thus the unemployment rate in Indonesia could be suppressed.

**Keywords:** *Teaching Factory, Entrepreneurial Competence, Vocational High School*

### **INTRODUCTION**

Labor conditions in Indonesia are still characterized by a high unemployment rate. Based on data from the Central Statistics Agency (BPS) (2020:9), according to education level completed, of the 9.77 million unemployment rates, 13.55% were vocational high school graduates, 9.86% high school graduates, 8.08% diploma graduates, 7.35% university graduates, 6.46% junior high school graduates, and 3.61% elementary school graduates. Based on the data above, it can be seen that the main contributor to the open unemployment rate is Vocational High School graduates, it was 13.55%. Unfortunately, because Vocational High School graduates should be able to get job opportunities more easily. This high number of unemployed can be caused because the competence possessed by Indonesian human resources is still low or because job opportunities are indeed not sufficient to accommodate all graduates

of the workforce produced by schools and universities.

This high unemployment rate also affects the Human Development Index. According to the Human Development Index data released annually by the United Nations Development Program (UNDP), Indonesia is ranked 107th out of 189 countries in the world. When it is compared to neighbouring countries in Southeast Asia, Indonesia is in the fifth rank. As illustrated in table 1 below, Indonesian HDI is lower than Singapore, Brunei Darussalam, Malaysia and Thailand.

For all aspects evaluated, Indonesia clearly lags far behind Singapore, which has a very high HDI predicate and is ranked 11th in the world. When it is compared to Brunei, it is still lagging behind. In fact, for all aspects, Indonesia is still inferior to Malaysia. (CBNC Indonesia 2020) The Human Development Index (HDI) is a measuring tool that can reflect the status of human development. The United Nations Development Program (UNDP) since 1990 has used HDI to measure a country's efforts to achieve human development and publish it in its annual Human Development Report (HDR). HDI is a composite index that covers three areas of human development that are considered very basic, which are used as indicators, including: 1) Lifespan; Human Development, or efforts to increase choices for the population, obliged to be the first seek to enable people to live long and healthy lives. 2) Knowledge; Apart from lifespan, knowledge is also widely recognized as a fundamental element of human development. Considering the availability of data, knowledge is measured by two indicators, including the literacy rate and the average length of schooling. 3) Decent Standard of Living; The basic element of human development that is widely recognized is a decent standard of living. Many alternative indicators can be used to measure this element. Taking into account the availability of international data, UNDP chose the adjusted Gross National Income (GNI) per capita as an indicator of a decent standard of living (Faqihudin, 2010:6).

To overcome the problems mentioned above, the policy made by the Indonesian government is to improve the quality of Human Resources through entrepreneurship-oriented education with the aim of expanding employment opportunities. The Directorate General of Vocational High School Education (Directorate of PSMK) takes part by trying to improve the competence and entrepreneurial spirit of Vocational High School graduates. As a vocational education unit at the secondary education level, Vocational High School has the main goal of preparing students to be able to work, either independently or to fill existing job vacancies as middle-level workers in accordance with their competencies (Law on National Education No. 20/2003). ). Vocational High Schools are required to be able to equip their graduates with a set of competencies that are in accordance with the needs of the Business/Industry World (Setiawan & Maruanaya, 2021:1). The development of Vocational Schools is currently starting to move from a local labor market orientation to the international labor market, as well as preparing graduates with the provision of entrepreneurial character which requires industry-based learning and entrepreneurship through factory teaching.

Teaching factory is a learning activity where students directly carry out production activities in the form of goods and services in the school education environment. The goods or services produced must have quality so that they are worthy of sale and accepted by the public or consumers (Siswanto, 2011: 4). With Teaching Factory students will get more time in doing

practice. Students can learn more optimally to develop their potential through real experiences. The company atmosphere created in teaching factory learning is expected to further improve students' competence, not only ready to enter the workforce but also ready to create their own employment or entrepreneurship.

## **LITERATURE REVIEW**

### **Entrepreneurship**

Entrepreneurship according to the Instruction of the President of the Republic of Indonesia (INPRES) No. 4 of 1995 in Winarno (2011:20) is the spirit, attitude, behavior and ability of a person in handling businesses and or activities that lead to efforts to find, create, implement new ways of working, technology and products by increasing efficiency in order to provide better services and or get a bigger profit.

Meanwhile, Fahmi (2014:2) defines entrepreneurship as a science that examines the development and development of the spirit of creativity and dares to take risks for the work done to realize the results of the work. what has been done has not had the value of attention in the market. An entrepreneur has two roles, namely as an inventor and as a planner. As inventors entrepreneurs discover and create new products, new technologies and ways, new ideas and new business organizations. Meanwhile, as planners, entrepreneurs play a role in designing new businesses, planning new corporate strategies, planning ideas and opportunities within the company.

According to Timmons & Spinelli in Aprilianty (2021:312) entrepreneurship is a way of thinking, studying, and acting that is based on business opportunities, a holistic approach, and a balanced leadership. The entrepreneurial process demands a willingness to take calculated risks so that they can overcome obstacles to achieve the expected success. In general, entrepreneurs use their ingenuity to take advantage of limited resources. An entrepreneur must be able to develop new products or new ideas and build a business with a new concept. This of course requires a certain amount of creativity and an ability to see patterns and trends that apply to being an entrepreneur. Several other entrepreneurial personalities such as self-confidence, results-oriented, leadership, hard work, and many more, will support the formation of human resources capable of managing a business.

The essences of entrepreneurship according to Gitosardjono (2013: 206) are: a. Entrepreneurship is the ability to create something new and different. b. Entrepreneurship is a value that is embodied in behaviour that is used as a resource, driving force, goals, strategies, processes and business results. c. Entrepreneurship is a process of doing something creative and innovative that is useful in providing added value. d. Entrepreneurship is a process of applying creativity and innovation in solving problems and finding opportunities to improve and develop business life.

The essential values of entrepreneurship according to Suryana (2014:39) consist of:

a) **Confident**

Self-confidence is a combination of one's attitudes and beliefs in dealing with tasks or work. Self-confidence is a strong foundation for improving one's initiative and work. Confident people have the ability to complete work in a systematic, planned, effective,

and efficient manner.

### Leadership

The nature of leadership does exist in each individual and this trait must also be attached to the entrepreneur. An entrepreneur is someone who will lead the course of a business, an entrepreneur must be able to lead his work because leadership is a key factor in being a successful entrepreneur.

b) Oriented to the future

Future-oriented people are people who have perspective and foresight. Despite the possible risks, he remains steadfast in seeking opportunities and challenges for future renewal. Foresight makes entrepreneurs not quickly satisfied with existing initiatives and works.

c) Dare to take risks.

Willingness and ability to take risks is one of the main values in entrepreneurship. Entrepreneurs who do not want to take risks will find it difficult to start or take the initiative. An entrepreneur who dares to take risks is someone who always wants to be a winner and win in a good way.

d) Creativity and innovation

Innovation and creativity lead to new concepts of thinking and acting. Creativity is the ability to create ideas and find new ways of looking at existing problems and opportunities. While innovation is the ability to apply creative solutions to existing problems and opportunities to make people's lives more prosperous. So, creativity is the ability to think new and different, while innovation is the ability to act in something new and different.

e) Oriented to tasks and results

Someone who always prioritizes tasks and results is a person who always prioritizes the values of achievement motives, is oriented to success, perseverance and fortitude, determination to work hard, has a strong drive, is energetic, and takes initiative.

Based on the above definition, it can be concluded that entrepreneurship is a person's ability to handle businesses and or activities that lead to efforts to find, create, apply new ways of working, technology and new products creatively and innovatively, courage to face risks, oriented to success, perseverance and fortitude and determination to work hard.

## **Teaching Factory**

### **Definition of Teaching Factory**

The teaching factory concept is a form of development from a vocational school into a production school model. Teaching Factory requires the Vocational School that implements it to have a business unit or production unit as a place for student learning. In the business or production unit, students directly practice by producing goods or services that can be sold to consumers (Siswanto, 2011: 3).

According to Hadam, Rahayu & Ariyadi (2017:106) the concept of teaching factory-based learning emphasizes a more demand-oriented education, equips students with entrepreneurial

character (technopreneurship) and involves the Business/Industry World as the main partner. Through the teaching factory pattern, optimizing educational collaboration with industry has an impact on the learning process that is increasingly oriented to industrial needs. Cooperation that is built systematically and based on a win-win solution makes Teaching Factory a liaison between the world of education and the World of Business/Industry that will encourage technology transfer to improve the quality of teachers and soft skills for students.

Meanwhile, according to the Directorate of Vocational High School Education (2009), the teaching factory is used as a model to empower Vocational Schools in creating graduates who are entrepreneurial and have competency skills through developing collaboration with relevant industry and business entities. In addition, the teaching factory aims to improve the quality of learning through a vehicle for learning by doing. Learning with an approach like this will foster an entrepreneurial spirit for students.

Based on the theories above, it can be concluded that the teaching factory is an entrepreneurial-oriented learning concept, which bridges the needs of industry and the competencies taught in schools by opening a business unit in the school as a place of practice for students.

### **The Purpose of Teaching Factory**

The objectives of implementing the teaching factory in SMK According to Hadam, Rahayu & Ariyadi (2017:109) include:

- 1) Developing the character and work ethic (discipline, responsibility, honesty, cooperation, leadership, etc.) needed by DU/DI and improving the quality of learning outcomes from just equipping competence (competency-based training) to learning that equips ability to produce goods/services (production-based training).
- 2) Improving the competence of teachers and students
- 3) Encouraging the creation of a quality culture in schools,
- 4) Creating an industrial culture in schools,
- 5) A vehicle for creativity and innovation for students and teachers, a means of developing entrepreneurship in schools
- 6) Internships and shelters for graduates who have not found work in the industrial or business world.

Siswanto (2015) argues that the teaching factory has several objectives, including: 1) Improving the competence of Vocational High School graduates. 2) Improving the entrepreneurial spirit of SMK graduates. 3) Improving the competence of Vocational High School teachers. 4) Producing products in the form of goods or services that have added value. 5) Increasing school income sources. 6) Increasing cooperation with industry or relevant business entities.

### **Model of Teaching Factory**

According to Zainal Nur Arifin (2014), there are three teaching factory models known in the Indonesian vocational education system:

### Model 1

Vocational schools or vocational institutions provide space for industrial partners to build teaching factories in local institutions. The teaching factory is actually a replica of a real mini factory, where vocational students learn to assemble and produce goods for industrial partners, with a vocational school or vocational institution that is responsible for managing the teaching factory.

### Model 2

Vocational schools or vocational institutions build a teaching factory together with industrial partners, with teaching factories located inside or outside the school location. Teaching factories operate as a separate business unit from a vocational school or vocational institution, and the management of a teaching factory is different from that of a vocational school or vocational institution. This model focuses on the needs of vocational programs. It is also more expensive to build and operate compared to the previous model.

### Model 3

The teaching factory takes the form of special cooperative classes between industrial partners and a vocational school or vocational education institution. Thus, students practice their skills in two places, it is in laboratories owned by Vocational High Schools or vocational institutions, and in actual factories owned by industrial partners. The operational costs for this special class cooperation can be paid in full or in part from the company's industrial partners

## **Teaching Factory Components**

Teaching factory-based learning must be based on several important elements that support the ongoing learning process. Elements of the teaching factory that have been initiated by GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) or the German Society for International Cooperation in Hadam, Rahayu & Ariyadi (2017:113) include block schedules, Jobsheet Learning Program Plans, Products, and Vocational High School graduates. It can be explained that the teaching factory can be implemented with a block system learning model that is supported by the Learning Program Plan and worksheets. The existence of the Learning Program Plan and this worksheet is the basis for making products according to requests from industrial partners. The learning process in the teaching factory is in the process of making this product. The success of making a product that is in accordance with industry demand is the key to producing competent SMK graduates as described in the teaching factory scheme below: The schematic in Figure 1 above is a schematic of the basic components that must exist in teaching factory-based learning. Each school can flexibly complete the components that are deemed necessary for the success of teaching factory learning. In addition to those described in Figure 1, there are also alternative teaching factory-based learning components that can be run. The components that must exist in a teaching factory according to Hadam, Rahayu & Ariyadi (2017:115) are:

- 1) Competency standards

The competency standards used in the implementation of the teaching factory are the

competencies needed in the industrial world. Competency-based teaching in industry is expected to make students ready to face the demands of the industrial world.

2) Instructor/Teacher

Instructors/teachers are those who have academic qualifications and also have industry experience. They are able to transform knowledge and *know how* as well as *supervise* the process to be able to present *finished products on time*.

3) Students

The classification of students in the teaching factory process is based on academic quality and talent and interest. Students with a balance between academic qualities and skills/aptitudes/interests get a large percentage to enter this program. Students who are lacking in these two things are recommended to take the easiest part.

4) Learning Media

The learning media used in the teaching factory process uses production work as a medium for the learning process. Production work can be in the form of industrial orders or standard products. This product must be understood in advance by the instructor as a medium for competency development through product functions, dimensions, tolerances, and completion times.

5) Equipment and tools

Some things to note: a. Maximum maintenance of equipment and equipment. b. Investment for teaching factory activities. c. Utilize to facilitate the development of student competencies d. together with the completion of production work at the highest quality level. e. Supervision of ineffective equipment and supplies for the speed and accuracy of the production process.

6) Assessment of learning achievement Assessment of learning achievement

The teaching factory assesses competent students through product completion. The assessment standard used must refer to the industry that issued the component/equipment.

7) Recognition of competence

The teaching factory assesses the competence of students using the National Competency Assessment, where certified assessors make observations on the ability of students to complete work assignments under the National Competency Standards Agency.

8) Department of Production Unit (UPJ)

As a forum for production results from the teaching factory so that they can be distributed to the community. In addition to partner industries, this production can be managed by the department of production unit (UPJ) so as to be able to grow technopreneurs for vocational students.

## **CONCLUSION & RECOMMENDATION**

The high unemployment rate in Indonesia, which is dominated by Vocational High School graduates, encourages the Government through the Directorate of Vocational High Schools, Ministry of Education and Culture to seek solutions in order to overcome the problems

mentioned above. One of the flagship programs launched by the government is the Teaching Factory. Teaching factory is a learning activity where students directly carry out production activities in the form of goods and services in the school education environment. The goods or services produced must have quality so that they are worthy of sale and accepted by the public

or consumers. Students are able to learn more optimally to develop their potential through real experiences. The company atmosphere created in teaching factory learning is expected to further improve students' competence, not only ready to enter the workforce but also ready to create their own employment or entrepreneurship. With the competencies obtained through the teaching factory program, it is hoped that the vocational school graduates can be creative and innovate to create new jobs, so that the unemployment rate in Indonesia can automatically be overcome. Therefore, it can be said that the factory teaching program is very suitable to be applied in every Vocational High School in Indonesia.

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