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Teaching Factory Learning Model at Vocational High Schools in Gorontalo to Answer the Challenges of the Industrial World

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ABSTRACT
This study aims to describe the Teaching Factory Learning Model in Vocational High Schools to Respond the Challenges of the Industrial World. This research is a research with literature review method. The results of this study indicate that the application of the teaching factory learning model can improve (1) Skills, students can develop competencies according to their fields, so that they can provide the skills needed in the industrial world. (2) Collaborative, students are accustomed to group work in completing products, so they can work with teams in the industrial world. (3) Creative, fostering student creativity through learning by doing. (4) Entrepreneurship, preparing graduates to become entrepreneurs and fostering an entrepreneurial spirit. (5) Readiness to find a job, helping students prepare themselves to become workers and helping to establish cooperation with the world of work. The presence of a teaching factory is a link and match solution and builds synergies for vocational high schools to collaborate with companies, so as to answer the current challenges of the industrial world.

Keywords: *Industrial World, Learning Model, Teaching Factory Learning Model, Teaching Factory.*

1. INTRODUCTION

The progress of a nation is greatly influenced by quality Human Resources (HR), this is in line with the President's 2020-2024 Vision and Mission, known as Nawa Cita, the first of which is Improving the Quality of Indonesian Humans [1]. Education is one of the strategic areas that can improve the quality of human resources. National education, especially vocational education, has an important role in carrying out the program, by contributing to preparing highly competitive and competent human resources to improve human quality. Vocational education is oriented to the world of work which produces nationally competitive graduates [2]. Vocational High School is an education that aims to prepare students to be able to work, either independently or to fill job vacancies as workers in accordance with their competencies [3]. Vocational High Schools are expected to be a solution to unemployment by providing them with life skills, various types of skills and knowledge so that they can become creative, innovative and productive HR assets. Entering the era of revolution 4.0, the learning process in Vocational Schools puts forward learning technology that is innovative, creative, critical thinking and productive practice, this is a concept of an educational method that is oriented towards management of student management in learning in harmony with the needs of the industrial world [4] Therefore, to optimize its implementation, one of the ways is through the application of real industry-oriented learning, namely Teacing Factory. [5]. Teaching Factory is used as a model to empower SMKs in creating graduates who are entrepreneurial and have competency skills through collaboration with relevant industries and business entities. Learning with a learning by doing approach will foster an entrepreneurial spirit for students [6]. The concept of a teaching factory in vocational education is a solution to meet the needs of a student learning atmosphere that is similar to the world of work in the industry where they will work after completing their studies. Teaching is integrated in the productive learning of factories that produce goods according to the demands of certain competencies. Material relating to the teaching factory is implemented as closely as possible with the working atmosphere in the industry. Time discipline, work tolerance, speed, originality, and work attitude are really implemented in teaching and learning activities in these subjects. So all educators must

contribute to achieving the vision and mission of the school through the lessons they teach. [7]. Teacing Factory learning is a production/service-based learning concept in Vocational Schools that refers to standards and procedures that apply in industry, and is carried out in an atmosphere that occurs like in industry, this is in accordance with the characteristics of vocational education, namely: 1) preparing students to enter employment , 2) based on the needs of the world of work "demand-market-driven", 3) mastery of competencies needed by the world of work 4) student success in "hands on" or world of work performance, 5) close relationship with the world of work 6) responsive and inspiring towards technological advances 7) learning by doing and hands on experience [8]. Teaching factory is a production/service-based learning concept that serves to bridge the gap between knowledge and skills acquired in schools and in industry [9]. Teaching Factory Learning can be interpreted as learning that provides services or products based on established procedures and standards in the industrial world and is applied according to the situation in the industry [10]. Learning programs in Vocational Schools through the application of TEFA are considered to be able to provide solutions in preparing competent outputs that are ready to work or determined by the business world, the government has made a breakthrough by presenting concept learning oriented to the Business World/Industry World (DU/DI). The learning process by applying the TEFA learning model fosters an entrepreneurial spirit for students, this is in line with research conducted by [11] which states that the Teaching Factory learning model can become land or a place for vocational students to practice entrepreneurial learning, and can increase the potential owned, thus building the entrepreneurial potential of SMK and fostering the character of successful entrepreneurs. One of the supporting factors for the growth of students' entrepreneurial spirit is the learning steps starting from the initial product design to marketing and supporting facilities similar to the Business World Industry, the following are the steps for learning production according to [12]: 1) designing products, 2) making prototypes, 3) validating prototypes, 4) organizing work/learning, 5) scheduling work/learning (block system), 6) carrying out production, 7) evaluating production results, 8) marketing production results.

Based on the observations of SMKs in Gorontalo that have implemented the Teaching Factory are:

Table 1. Name of Schools implementing TEFA

School Name	Address
Telaga Gotong Royong Private Vocational School	Rambutan, 96139, Tomulabutao, Dungingi, Tomulabutao, Kec. Dungingi, Kota Gorontalo, Gorontalo 96138
4 Gorontalo State Vocational High School	Jl. Madura, Kel. Pulubala, Kec. Kota Tengah, Pulubala, Gorontalo, Kota Gorontalo, Gorontalo 96127

Telaga Gotong Royong Private Vocational School through Crafts and Entrepreneurship subjects has implemented the teaching factory learning model which is going well, this is in line with the results of research that has been conducted by [13] which states that there is a significant influence from the application of the teaching factory learning model on interest in entrepreneurship. students, and 4 Gorontalo State Vocational High Schools have implemented a teaching factory design and textile production which has produced a product that is unique to the Gorontalo region, namely karawo.

Based on the exposure of the study, this research seeks to describe the Teaching Factory Learning Model at Vocational Schools in Gorontalo to Respond to the Challenges of the Industrial World. The development of the industrial world is increasingly demanding human resource competence, the sophistication of the tools that we now encounter requires workers to continue to hone their skills.

2. METHOD

This paper uses a literature review approach. According to [14] a systematic literature review is looking for a subject by using an in-depth review system and looking for reference sources through reputable journals. The stages of the research include: 1) Identifying potential problems 2) Gathering information on SMKs in Gorontalo that apply TEFA 3) Explain the TEFA learning model in response to industry challenges.

3. RESULT

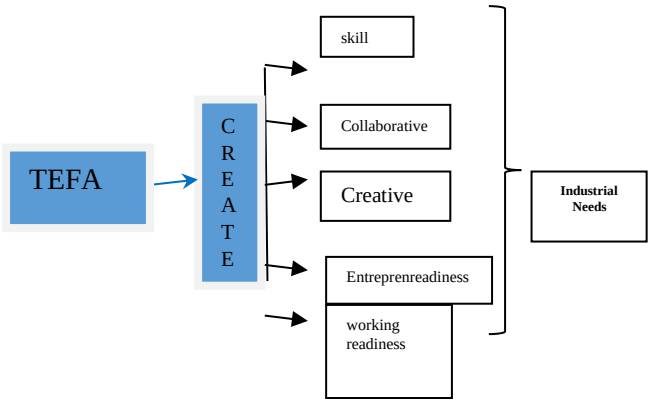
The application of the teaching factory learning model can improve skills, students can develop competencies according to their fields, so they can equip the skills needed in the industrial world. This is in line with research conducted by [15] which states that the 6-step teaching factory model consists of two groups of soft skill and hard skill activities aimed at increasing student competency in productive subjects. In the learning process students are directed to participate in activities according to predetermined procedures, students are taught, trained and directed to develop abilities and personalities through various processes [16].

The learning model is in accordance with 21st century skills, namely the teaching factory learning model which creates Collaborative, students are familiarized with group work in completing products, so they can work in teams in the industrial world. This is in line with research conducted by [17] which leads to collaborative learning when learning in teams, students will discover the skills

of planning, organizing, negotiating, and making agreements regarding the product to be completed.

Learning models that produce products cannot be separated from the creative ideas of students. According to the research that has been conducted, it is said that the creativity of students has a significant influence on TEFA learning, because students have the ability to think creatively and the ability to generate many ideas from their thoughts, so that they can create superior quality and competitive products. The application of TEFA fosters student creativity through learning by doing. Entrepreneurship, preparing graduates to become entrepreneurs and fostering an entrepreneurial spirit. Based on research conducted by [18], it shows an increase in various aspects of entrepreneurial character, including achievement motivation, future orientation, leadership in entrepreneurship, business networking, and having a responsive attitude as well as being creative and innovative in dealing with change after applying the teaching factory learning model. , so that TEFA is able to provide a job-seeking readiness effect for students, helping students prepare to become a workforce and helping to establish cooperation with the world of work. The presence of a teaching factory is a link and match solution and builds synergy for Vocational Schools to collaborate with companies, so they are able to respond to the challenges of today's industrial world.

The following is an overview of TEFA responding to industry challenges:



4. CONCLUSION

The results of this study indicate that the application of the teaching factory learning model can improve (1) Skills, students can develop competencies according to their fields, so that they can provide the skills needed in the industrial world. (2) Collaborative, students are accustomed to group work in completing products, so they can work with teams in the industrial world. (3) Creative, fostering student creativity through learning by doing. (4) Entrepreneurship, preparing graduates to become entrepreneurs and fostering an entrepreneurial spirit. (5) Readiness to find a job, helping students prepare themselves to become workers and helping to establish cooperation with the world of work. The presence of a teaching factory is a link and match solution and builds synergies for vocational high schools to collaborate with companies, so as to answer the current challenges of the industrial world.

AUTHORS' CONTRIBUTIONS

The author's contributions to this paper include:

1. Esta Larosa, as the main author who compiled this paper.
2. Sri Ayu Ashari, Ihsanulfu`ad Suwandi, Hasanuddin, Sunardi, helped find references related to this paper.

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