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An Evaluation of the Implementation of the Teaching Factory Learning Model in Vocational High Schools

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ABSTRACT
The Teaching Factory (TEFA) learning model is a production or service-based learning model in vocational high schools that refers to standards, procedures, and environments found in industries. Many schools, particularly in West Java, have implemented and operated teaching factories. In the continuity of a program, there needs to be a process used to assess the level of program implementation, known as evaluation. The research conducted applied the CIPP evaluation concept consisting of the Context, Input, Process, and Product components. This research was carried out in several vocational high schools in several districts in West Java. The aim of this study was to determine the extent to which the implementation of the TEFA learning model was evaluated through the CIPP components. Data collection in this research was carried out through questionnaires, interviews, observations, and documentation. The research results showed that the implementation of the TEFA learning model, the Context component, falls into the category of very suitable for the relevance of implementation with the program's objectives, school vision, and mission. The Input component falls into the category of being suitable with school management, infrastructure, but is not yet supported by human resources. The Process component falls into the category of being less suitable with the learning pattern and marketing. The Product component falls into the category of being suitable with student competencies and products but is not relevant to the products expected by user communities. All components of the CIPP TEFA learning model have been implemented, but improvements are needed in technology development, curriculum alignment, resource management, and product marketing.

Keywords: *Tefa, CIPP, Factory.*

1. INTRODUCTION

Vocational High Schools (SMK) are secondary education institutions that prepare students mainly for working in specific fields. This is stated in Article 15 of the Republic of Indonesia Law number 20 of 2003 [1]. Graduates of SMK are prepared for three things: 1) SMK graduates are prepared to work in the business and industrial sectors (DUDI). 2) SMK graduates are prepared to continue their education to the next level through vocational education programs to improve their skills in specific fields. 3) SMK graduates are prepared for entrepreneurship.

The government's efforts to improve the quality of human resources are carried out through various educational programs, one of which is the priority program to realize the vision of the formation of character-based humans and ecosystems with the teaching factory (TEFA) learning model development program [2]. Based on Government Regulation No. 41 of 2015, the TEFA learning model in vocational schools is referred to as a school-based production facility based on actual working procedures and standards to produce products that are in line with the industry and not profit-oriented.

The ideal conditions for implementing the TEFA learning model in vocational schools, according to the Directorate of Vocational High School, include aspects such as learning, human resources, facilities, practical activities, collaboration networks, products/services, transparency, and legal aspects [3]. The ideal conditions cover various aspects, such as in the learning aspect where the assessment system is based on the TEFA learning model, and the learning system uses block and continuous schedules. The human resources aspect includes teachers, non-educational staff, and other supporting staff in implementing socialization, preparing human resource development plans,

implementing industrial internships, preparing SMK work results application, mapping teacher teaching according to the learning model, and conducting monitoring and evaluation (Monev) of teacher's teaching [4].

According to research conducted by Slamet, the current condition of vocational high schools (SMK) shows that SMK graduates have not produced superior human resources with creative, innovative, adaptable, technology-savvy, skilled, and multiple intelligence traits [5]. Data from Badan Pusat Statistik (BPS) as of February 2017 showed that the majority of SMK graduates were unemployed, with a total of 10 percent out of 7.01 million unemployed individuals. This is unfortunate considering that SMK graduates are prepared to be ready to work and become entrepreneurs, but empirical data shows the opposite, with the majority of SMK graduates becoming unemployed. One of the factors contributing to unemployment is that SMK graduates do not yet possess the competencies required by the industry and are unable to create their own businesses. One way to address this problem is through the Teaching Factory policy program [6].

There are several evaluation models in the field of education, such as the gap model, formative evaluation model, summative evaluation model, CIPP model, measurement model, adaptation model, education system evaluation model, and others [7]. The CIPP model is consistent with program evaluation and prioritizes planning and implementation guidance in development efforts [8]. The success of the TEFA learning model in schools can be achieved if the components of TEFA implementation have high achievement values. These components include context, input, process, and product in evaluating the program as a whole. Through evaluation, institutions can determine which components have high or low achievement values and make decisions to maintain what has been achieved or improve what has not been fulfilled [9].

Based on observations in the form of interviews conducted with teachers and principals in several vocational schools (SMK) in Bandung and surrounding areas that implement the TEFA program, several obstacles were found. These include a lack of knowledge and competence in productive and business school, suboptimal production and marketing management, and a failure to utilize ICT in the production and learning process. Therefore, an evaluation research on the implementation of the Teaching Factory policy using the CIPP evaluation model in vocational high schools (SMK). The purpose of this research is to determine the level of suitability of TEFA implementation using the CIPP evaluation model in SMK.

2. METHODOLOGY

This research uses the CIPP evaluation model (Context, Input, Process, Product). Data collection was done through observation, interviews, and questionnaires based on the researcher's developed instrument in Table I. Observations, interviews, and questionnaires were conducted to obtain empirical data. Data analysis used a descriptive percentage system with qualitative criteria in Table II. This research was conducted in 10 vocational schools in West Java Province which TEFA implemented.

This research was conducted based on the TEFA learning model evaluation using the quantitative descriptive research method with the CIPP evaluation model by Daniel Stufflebeam [10]. The context component consists of the program background, vision, mission, and achieved objectives. The input component consists of facilities and human resources. The process component relates to the implementation of learning activities, such as learning patterns and marketing activities. The product component consists of the products produced and student competencies. The participants selected were involved in the implementation of learning activities, namely expert teachers in the processing field, production supervisors, school principals, and consumers.

Table 1. Instrument Evaluation CIPP Teaching Factory

No	Variable	Indicator
1	Context	Program objective of Teaching factory
		Program benefits of Teaching Factory
		Program participant criteria of Teaching factory
		suitability of implementation teaching factory with dudika
2	Input	Human Resources for Teaching Factory
		Finance administration of Teaching factory
3	Process	Management of Implementation og Teaching Factory
		Handling of teachers towards product problems
		Arrangement of time, space, and equipment for Teaching Factory implementation
		Student attendance in Teaching Factory learning
		Quality Control (QC) implementation
		The ability of teachers to manage Teaching Factory learning activities.
4	Product	The feasibility of Teaching Factory products in the market
		Product performance
		The suitability of Teaching Factory products in the industrial

Table 2. Qualitatif Criteria

No	Variable	Indicator
1	0% < Persentase ≤ 25%	Not Suitable at All
2	26% < Persentase ≤ 50%	Not Suitable
3	51% < Persentase ≤ 75%	Suitable
4	76% < Persentase ≤ 100%	Very Suitable

3. FINDINGS AND DISCUSSION

Based on the observation and interviews conducted at several vocational high schools in West Java that implement Teaching Factory (TEFA) in schools, the questionnaire data filled out by respondents was grouped into tables according to variables and indicators in the CIPP Teaching Factory evaluation instrument. The data was analyzed using a descriptive system.

The "context" variable obtained a percentage of 100 % on the indicators of the Teaching Factory program objectives, the benefits of the Teaching Factory program, the criteria for Teaching Factory program participants, and 87 % on the suitability of Teaching Factory implementation with the world of work.

1. The "input" variable with indicators of human resources in Teaching Factory at vocational high schools obtained 90%, and the indicator of financial administration in Teaching Factory obtained 76%.
2. On the process variable with each indicator, namely the indicator of the management of the Teaching Factory implementation at 78%, the indicator of teacher handling of product issues at 45%, the indicator of time, space, equipment arrangement for Teaching Factory implementation at 90%, the indicator of student attendance in Teaching Factory learning at 100%, the implementation of quality control (QC) at 75%, and the teacher's ability to manage Teaching Factory learning activities at 100%.
3. The product variable with each indicator, namely the indicator of the feasibility of Teaching Factory product in the market at 75%, the indicator of Teaching Factory product performance at 67%, and the indicator of the suitability of Teaching Factory product in the industrial world interaction at 53%.

3.1 Context Evaluation

The evaluation results on the context variable show that the implementation of Teaching Factory in several vocational high schools in West Java meets the criteria very well. All Teaching Factory are aware of the legal basis of the Teaching Factory program, which is Government Regulation Number 29 of 1990 article 29 paragraph 2, which states that "To prepare vocational high school students to become workers, production units that operate professionally can be established in vocational high schools" and Presidential Instruction Number 9 of 2016 on the revitalization of vocational high schools in order to improve the quality and competitiveness of Indonesia's human resources. Furthermore, the community has a positive view of the

objectives and benefits of the Teaching Factory program. The suitability of Teaching Factory with the Industry Partner has been accepted, but support from some partner companies is still not optimal and needs to be improved. Based on the data obtained, the implementation of the Teaching Factory program in vocational high schools in West Java is still very suitable in terms of the context variable.

3.2 Input Evaluation

The input variable provides information that not all teachers are capable of implementing the Teaching Factory program, and factors such as motivation and facilities are some of the reasons. However, the productive ability of teachers is in line with the understanding of the study fields, so the implementation of Teaching Factory can run. Regarding financial administration, some vocational high schools have budgets that have been prepared with accounting procedures, while some do not have school budgets that have been prepared with accounting procedures. Daily transaction records and financial reports are evidence of financial transactions carried out during the implementation of the Teaching Factory program, which is accountable by the head of the Teaching Factory program to the school. The results obtained show that the implementation of the Teaching Factory program meets the criteria very well

3.3 Process Evaluation

The process management of the Teaching Factory program in vocational high schools in West Java was carried out by evaluating the planning, implementation, and supervision of the Teaching Factory program. The planning, implementation, and supervision of the Teaching Factory program have been appropriate. In the planning of the program, there is a document for the Teaching Factory program planning, although it is not yet complete overall. In the implementation of the program, teachers have a very vital role and must accompany students during the Teaching Factory activities, but the ability of teachers to handle problems is still categorized as not good, especially in terms of slow response. The supervision of the Teaching Factory program on the production/service results tends to be carried out by the implementing students and responsible teachers, so the concern for product results in terms of quality control is still very low. Therefore, the process variable in the implementation of the Teaching Factory program in some vocational high schools in West Java is still categorized as meeting the criteria.

3.4 Product Evaluation

The result of the evaluation on the Product variable shows that each school has competitiveness with products that already exist in the market, but there are also schools that have developed Teaching Factory products that can compete in the market, while some others are still not in line because they are just starting to run the Teaching Factory system. Most of the vocational schools visited try to imitate products made by industries or other workplaces that already exist in the market. If the Teaching Factory product is in line with market needs and has added value, then the product can sell. However, creating such conditions is very difficult to do. The form of Teaching Factory that is in line with industrial needs is through cooperation with other parties, for example in the field of vehicle service, electrical equipment service, while producing a product such as making LED lights or chemical-based goods in the industry is all less competitive in terms of price and marketing ability.

Overall, the evaluation results of the Teaching Factory program using the CIPP model obtained a criterion of suitability with a percentage of 74%, but there are several things that need to be adjusted in the implementation of the Teaching Factory program aimed at maximizing the policy of the Teaching Factory program and its results to be in line with the expectations of all parties, which can serve as a learning tool and also as a means of generating school income.

4. CONCLUSION

The evaluation result of the implementation of the Teaching Factory policy program in vocational schools in West Java using the CIPP model obtained criteria that are in line with an average percentage of 74.9% from the context, input, process, and product variables. The implementation of the Teaching Factory needs to be adjusted in several schools, such as ensuring that teachers have the appropriate abilities in their fields to run the Teaching Factory, establishing an organizational structure for the Teaching Factory that is formalized with certification documents, and producing products that can compete with the industrial world. The most crucial aspect that needs to be developed is the collaboration between schools and industries to form a professional and profitable teaching factory. To achieve the goal of the Teaching Factory, which is to cultivate an entrepreneurial spirit in students, in addition to preparing them for employment and continuing their education, adjustments are necessary.

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