

## Evaluation of teaching factory policy implementation with CIPP evaluation model

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**Abstract:** The purpose of this study is to use the evaluation model of SMKN 1 Boyolangu Tulungagung Context, Input, Process, Product (CIPP) to determine the suitability of the application of Teaching Factory (TEFA) in overcoming job problems such as unemployment. This research was conducted using the CIPP assessment method by searching for data using observation, interviews, and questionnaire data collection. Data analysis used a descriptive percentage system. The survey results show that the assessment of the implementation of the Teaching Factory (TEFA) program conducted at SMKN 1 Boyolangu Tulungagung using the CIPP model, which is highly standardized and produces an average percentage of conformity of 89%. However, these results are issued with a note that teachers must have expertise in their respective operational fields in the Teaching Factory (TEFA).

**Keywords:** Teaching Factory, Learning, CIPP

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### INTRODUCTION

Preparing students to meet graduation targets is the responsibility of institutions with teaching curricula tailored to the needs of the world of work. There are principles that can be used as guidelines in conducting education, such as education will be efficient in proportion to the environment in which he must then work, meaning that education can be said to be successful or following standards if education provides a real picture related to the world of work that will be pursued, by students (Foster & Yaoyuneyong, 2016). SMK alumni have educated students who can work or be said to be graduates ready to work. Especially in the face of an industrial era that is all about digitization. Efforts must be made to compete in the 4.0 era (Sanders et al., 2016; Santos et al., 2017; Schallock et al., 2018).

Teaching Factory (TEFA), which is a vocational program, aims to produce graduates with high competence and ready to face the world of work. As is the case in China and Africa in terms of educational partnerships that prioritize cooperation in all education sectors for the two countries' progress (Niu, 2013). Learning carried out in Vocational Schools is currently limited to practice without thinking about the output of the results of the practice carried out by students who have attractiveness and selling power in the community or not (Mahmudi, 2011). Learning activity programs that only practice without thinking about the goods or services produced have a selling value is a form of independence development given to students in SMK in managing competence as a source of income. Focus on learning like this will further increase student motivation.

Evaluation is part of the activity of collecting data into information which is then used as a solution in decision making when problems occur in program implementation (Arikunto, 2014; Retnawati, 2013). Evaluation can also be said to provide data in the form of information that is used as a consideration for making decisions (Widoyoko, 2009). Evaluation can also be said to be a valuable activity because there is value in studying more about the sustainability of activities and being considered in carrying out activities that have benefits or the need for improvement so that in the future it can run according to the expectations that are the goals of achievement (Mulyadi et al., 2015). The

existence of an assessment in the evaluation becomes the achievement of activities in the context of decision-making (Gandhare & Akarte, 2022). This means that program evaluation is a series of activities collected to find differences in the achievement of activities that run according to the formulated strategy and look for differences in alternative selection decisions when decision-making is made.

The ideal conditions for implementing Teaching Factory (TEFA) in Vocational High Schools include the following aspects and sub-aspects (Naz & Murad, 2017). First is the Learning aspect. The teaching materials provided for SMK students are materials for student learning to make improvements in their learning methods. The existence of teaching materials is also a means to improve students' competence, where vocational graduates aim to be able to compete and adapt well to the work environment later. The competence of students taught in SMK is obtained through the Teaching Factory program. Second, Human Resources. The existence of competent human resources in SMK will produce graduates who can be competitive. These human resources are teachers who can see students' competence, formulate teaching materials and methods by the SMK curriculum, and produce graduates who are ready to work. The teacher's role is the pivot in the ongoing learning activities in SMK. Third, Facility. The facilities and infrastructure owned by Vocational High Schools, which are vocational schools, certainly have to learn support facilities that can provide a real picture of the world of work model to students. And fourth, Practical activities. Implement learning activities that are realized in practice based on standards, time, and results from practice.

There is cooperation or networking between schools and industry or DUDI (Business and Industry) to create an industrial culture in schools to create an industrial worldview for students. This is done so that students can adapt early to face the world of work because the basic students come from vocational schools that focus on one area of expertise through the Teaching Factory (TEFA) program.

The CIPP evaluation model is a model that contradicts the views related to the success of learning programs in education that affect program objectives, student character, and program implementation (Belinski et al., 2020). As is the case in China and Africa in terms of educational partnerships that prioritize cooperation in all education sectors for the two countries' progress (Niu, 2013). The CIPP model, which stands for context, input, process, and product, is a form of evaluation related to learning programs that have been improved in their implementation (Mahmudi, 2011). Strengths CIPP (Context, Input, Process, and Product) is a useful tool that can help evaluators raise important questions for evaluation (Aldapit & Suharyana, 2019; Hidayat et al., 2020; Mahmudi, 2011; Sulistyawati & Guntur, 2019). For each component of the CIPP, the evaluation can identify some questions about ongoing education (Rahayuningsih et al., 2018; Rentzos et al., 2015; Wakhinuddin, 2009). The models and questions are easy to explain to a lay audience.

An approach that has a management orientation with support for the evaluation results of learning programs such as operational activities, change, and growth. However, it is necessary to reconsider and be wary of the unpreparedness of the evaluation implementers in responding to issues that need to be considered in decision making (Kukuh, 2017; Stufflebeam, 2007; Wakhinuddin, 2009).

The concept of evaluation of the CIPP (Context, Input, Process, and Product) model was first proposed by Stufflebeam in 1965 as a result of his efforts to evaluate ESEA (the Elementary and Secondary Education Act) (Stufflebeam, 2007). Stufflebeam offers the concept with the view that the important purpose of the evaluation is not to prove but to improve. The CIPP approach is based on the view that the most important purpose of the evaluation is not to prove but to Mahmudi (2011).

The study results at the Tulungagung Vocational School in the Department of Computer and Network Engineering (ICT), which has a production unit with routine use by TKJ SMK students, but its function is not the same as the purpose of its manufacture. This is because the use of production units that are not optimal results in the output of graduates who do not have competence in their fields. The function of the existence of a production unit in SMK is a learning medium that can be developed in nurturing student competence by providing real practice in the world of work that will be taken by students when they become alumni (Widjajanti et al., 2019). The learning outcomes of SMK students can have value if they get recognition from the community for the products or services they have created.

SMKN 1 Boyolangu is one of the vocational schools in the district. Tulungagung implements Teaching Factory (TEFA) in their learning. The Teaching Factory (TEFA) program, a production unit at SMKN 1 Boyolangu, consists of 11 majors. Problems that occur in the implementation of learning

with the application of the Teaching Factory (TEFA) program appear to be less enthusiastic about students participating in learning activities so that they get less competence than students.

Teaching Factory (TEFA) activities carried out in learning cannot be separated from various problems. Therefore, an evaluation of the implementation of Teaching Factory (TEFA) activities needs to be done so that a solution can be found and treatment can be immediately carried out so that it does not become a fungus. The existence of this evaluation can be seen in the implementation of learning activities that have obstacles, and problem-solving strategies can be formulated for these obstacles. Improvements that need to be made become homework that must be done together to realize a Teaching Factory (TEFA) that can produce competent graduates.

### METHODS

The CIPP evaluation model (Context, Input, Process, Product) is a research used to collect data through observation by conducting interviews with respondents and distributing questionnaires based on instruments developed by researchers in Table 1. Observation through questionnaires and interviews is useful for supporting empirical data. Data analysis used a descriptive percentage system with qualitative criteria in Table 2. This research was conducted at SMKN 1 Boyolangu for six months, starting from July to December 2021.

The instruments used in this study were interview guidelines, observation instruments, and evaluation instruments to implement the Teaching Factory (TEFA) learning program.

Table 1. CIPP Evaluation Instrument

No.	Variable	Indicator
1.	Context	The objectives of the Teaching Factory program Benefits of the Teaching Factory program Criteria for participants of the Teaching Factory program The suitability of the implementation of the Teaching Factory with the business world and the industrial world The feasibility of Teaching Factory's products on the market Product performance from Teaching Factory The suitability of Teaching Factory products in the industrial world
2.	Input	Human resources in the Teaching Factory in SMK Financial administration in Teaching Factory
3.	Process	Management of Teaching Factory Implementation in Vocational High Schools Teacher handling product problems Setting the time, space, and equipment for the implementation of the Teaching Factory Student attendance in Teaching Factory learning Implementation of Quality Control (QC) Teacher's ability to manage teaching factory learning activities
4.	Product	The feasibility of Teaching Factory's products on the market Product performance from Teaching Factory The suitability of Teaching Factory products in the industrial world

Table 2. Percentage Range and Qualitative Criteria

No.	Interval	Criteria
1.	0% < percentage ≤ 25%	Very inappropriate
2.	26% < percentage ≤ 50%	Inappropriate
3.	51% < percentage ≤ 75%	Appropriate
4.	76% < percentage ≤ 25%	Very Appropriate

(Supriyantoko et al., 2020)

### RESULTS AND DISCUSSION

#### Result

Based on the results of observations and interviews at SMKN 1 Boyolangu through the implementation of the Teaching Factory (TEFA) by grouping the indicators and variables of the CIPP Teaching Factory evaluation instrument into a table where the questionnaire has been filled out by the school that is the respondent. Below are the results of data analysis obtained using a descriptive percentage system, including the following:

First, The percentage of 100% on the context variable through several indicators such as the benefits of the Teaching Factory program, the objectives of the Teaching Factory program, the suitability of the implementation of Teaching Factory in the Business and Industrial World (DUDI), and the criteria for the participants of the Teaching Factory program. Teaching Factory compatibility with DUDI has been accepted and supported by several partner companies SMK Negeri 1 Boyolangu. Parents and the community also provide implementation support. They are teaching Factory program, which aims to grow and develop students' entrepreneurial spirit. This shows that the implementation of the Teaching Factory program at SMK Negeri 1 Boyolangu is very appropriate for context variables.

Second, the percentage for indicators of input variables such as financial administration at Teaching Factory is 89%, and for human resources, indicators at Teaching Factory is 92%. The input variable produces information that not all teachers are able to implement the Teaching program Factory, teacher motivation factors, and facilities are one of the causes. However, the teacher's ability to be productive is in accordance with the field of study that is understood so that the implementation of Teaching Factory can run. Regarding financial administration, several SMKs have budgets that have been prepared using accounting procedures. Some do not yet have a school budget that has been prepared with accounting procedures. Recording daily transactions and financial reports is evidence of financial transactions carried out during the Teaching Factory program's implementation. The head of the Teaching Factory program is accountable to the school. The results obtained indicate that the implementation of the Teaching Factory program has very appropriate criteria.

Third, the percentage of process variable indicators, including teachers' handling of product issues and willingness to implement the teaching factory program, was 67%, the equipment layout, space and time of the teaching factory was 92%, and the attendance rate of students, teachers in the teaching factory learning activities The skills and quality control (QC) implementation rate is 100%, and the teaching factory implementation rate is 89%. Planning, implementation and supervision of the Teaching Factory program are appropriate. In the program, planning has a Teaching Factory program planning document, although it is not complete overall. Teachers play an active role in mentoring students when they carry out Teaching Factory activities in implementing the program. Teaching Factory supervision of the products/services implemented involving the school's internal stakeholders.

Fourth, the percentage of product variable indicators which include the suitability of the product at the Teaching Factory in the field of industrial interaction is 83%, the performance of the product resulting from the Teaching Factory program is 67%, and the feasibility of the product resulting from the Teaching Factory program is 100% in the market. The results of the Product variable evaluation show that each school has competitiveness with products that have been Yes, but there are schools that are pioneering Teaching Factory products to compete in the global market. In addition, for the quality of the products provided by the teaching factory, that is, providing services to students in industry, such as multimedia services, marketing, automobiles, etc. With students who are skilled in these skills, the product from Teaching Factory is in accordance with the needs of the world industry. However, some are still not appropriate because some schools are still just running the system from the Teaching Factory. Then if the results of the Teaching Factory product are in accordance with the needs in the world industry, then being able to compete with existing products, the products from the Teaching Factory can be marketed.

## **Discussion**

Evaluation of the context variable shows the results where the implementation criteria for Teaching Factory at SMKN 1 Boyolangu Tulungagung are very appropriate. The legal basis for the Teaching Factory program with the knowledge of Teaching Factory implementers according to Government Regulation no. 29 of 1990 article 29 paragraph 2, which reads, "To prepare vocational high school students to become workers, in vocational high schools a production unit that operates professionally can be established" on the other hand there is a presidential instruction no. 9 of 2016 concerning the revitalization of efforts to compete and improve the quality of human resources at vocational schools in Indonesia. The positive view of the community on the benefits and objectives of the Teaching Factory program, as well as the support and acceptance of the Teaching Factory by several partner companies of SMKN 1 Boyolangu by the Business and Industrial World (DUDI). The same support came from the parents of the students, who agreed on the purpose of implementing the Teaching Factory program to develop and foster an entrepreneurial spirit for students. This is what

proves the suitability of the context variable for the implementation of the Teaching Factory program at SMKN 1 Boyolangu Tulungagung.

The results shown by the input variables are facilities and motivation for teachers, which causes some teachers to have not been able to implement the Teaching Factory program. Through the productive abilities possessed by the teacher following the understanding of the field of study that supports the running of the Teaching Factory program. Some SMKs have budgets for financial administration that have been prepared according to accounting procedures, but some SMKs still do not have budgets that are structured according to accounting procedures. The accountability of the Teaching Factory program to schools is carried out through proof of transactions during the implementation of the Teaching Factory program using financial reports and daily records so that the implementation of the Teaching Factory program shows results with the appropriate criteria.

Based on the process evaluation results that occurred in the production unit of SMKN 1 Boyolangu Tulungagung on the Teaching Factory management process through an evaluation of the appropriate supervision, planning, and implementation of the Teaching Factory program. The suitability of the teaching factory at SMKN 1 Boyolangu needs to be reviewed accumulatively from four aspects: context, input, process, and product. Teaching factory match results selected accumulatively get the criteria very according to the average percentage of 89% of context, input, process, and product variables. The school's internal stakeholders are involved in supervising the Teaching Factory of the planned products/services. Although it is not comprehensively complete, there is a planning document for the Teaching Factory program. When students carry out the Teaching Factory program, teachers have a very active role in assisting students who participate in this program, so that the process variables in the implementation of the Teaching Factory program are carried out at SMKN 1 Boyolangu Tulungagung are following existing criteria.

Based on the results of the product evaluation that has been carried out, information is obtained that several schools are still pioneering to compete in the global market, and some are already competitive with their products. The products offered by the Teaching Factory program are product quality, such as service offerings to the industrial world, both marketing services, automotive, multimedia, and others. Students' competency skills affect the results of the Teaching Factory program that are in line with the needs of today's industrial world. Several schools are still just starting to run the Teaching Factory system, so the products produced are not following the needs that exist in the industrial world. If the products from the Teaching Factory program follow the needs of the industrial world, then the existing products can be marketed and compete in the global market. These results indicate that the product variable in the implementation of the Teaching Factory program conducted by SMKN 1 Boyolangu Tulungagung is very appropriate.

## CONCLUSION

The CIPP model in evaluating the implementation of the Teaching Factory program at SMKN 1 Boyolangu Tulungagung with input, product, process, and context variables obtained an average percentage result of 89%, which is under the criteria. The school should be committed and consistent in establishing sustainable relationships with relevant government agencies to pay more attention to the achievement of students' soft skills in the implementation of the "Teaching Factory", which is under the needs and demands of the community, the industrial world, and also the school's vision and mission. Managers need to seek other supporting factors by establishing financial investment cooperation for Teaching Factory workshops on a larger scale. The manager should further improve the quality and quantity of product performance resulting from work at the Teaching Factory. The school should provide material in the form of soft skills for students before carrying out Teaching Factory activities so that students have more confidence and have high creativity in running it.

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