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The Evaluation of Industry Practical of Mechanical Engineering in Vocational Education: A CIPP Model Approach

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Abstract. The learning system is not only studied on campus but also practicing in the world of work. Industry Practical aims to enable students to develop their skills in accordance with the real world of work. To know the success of the implementation of industry practical program then held evaluation. The evaluation of the program in this study used the CIPP evaluation approach (Context, Input, Process, Product). The purpose of this research is to know the extent of achievement and success of industry practical program at vocational school in Bandung with descriptive research method using mix method approach. The sample in this research is students majoring in mechanical engineering in the city of Bandung who have done industry practical.

1. Introduction
Implementation of vocational education is currently entering an important stage, the stage where vocational education graduates will be at stake in the workforce in the Asian region. Efforts must be made to make the arrangements and improvements as much as possible in the vocational education sector, both arrangement in the pattern of recruitment, development of education and training programs, innovation of education and training process, evaluation and certification development.

One of the efforts undertaken among others is by cooperating with the business world / industry intensively so that together develop the program and curriculum of education and vocational training and its supporting tools are education and training standard, competency standard, test standard and certification.

In the 2013 curriculum there are some things that need to be focused on Prakerin / Industry practical, such as areas of expertise must be in accordance with global needs, the addition of life and career skills, the need to involve users (in this case related industries) in preparing curriculum, project-based learning and schools open for students for longer periods of lessons, balance of hard skills and soft skills and also the need to establish a conducive school culture [1,2,3,4].

The purpose of Industry practical implementation is to prepare students to become productive people, able to work independently, to fill the existing job vacancy in Business World and Industrial World (DUDI) as middle-level worker, in accordance with the competence in the program of expertise of choice, to equip the students to be able choose a career, tenacious and persistent in competing, adapt in the work environment and develop a professional attitude in the field of expertise of interest and
equip learners with science, technology, and art in order to develop themselves in the future either independently or through higher education.

If the Industry Practical goes according to the stated goal, then it will affect job creation and reduce unemployment. The dual system has proved its success, as it is shown by its ability to react quickly and effectively to the many changes in the economy and in the Society, and the fact that youth unemployment is low [5]. The number of unemployment is influenced by the quality of human resources while the quality of human resources is influenced by the education system. In Industry Practical Learners get enough knowledge in school and gain sufficient skills from industry.

In an advanced company Industrial practice is implemented by applying the Practice participants together with the employee themselves. The positive aspect of education undertaken at the factory is that education is close to the reality of Practice, education can be quickly adjusted to new requirements arising in the labor market, and lower tuition costs compared to institutional costs others because learners come to work [6].

It is a classic problem for SMK education in Indonesia in general that the link and match between the output of vocational education with the business world / industry (DU / DI) as the user of SMK education output has not been achieved. One of the problems lies in the quality of SMK graduates who are not in accordance with the standard of skills required by the labor market. Various efforts have been made but until now the implementation of Industry Practical is still not optimal benefits because of many obstacles encountered in the field.

There are five main issues that tend to hinder the success of training programs are: (1) Training is not intended to refer to a specific purpose, (2) The purpose of the training program is not clearly identified, (3) The instructor is not prepared or the material does not fit the training objectives, (4) Training participants are not interested in joining the program, (5) There is no provision for evaluating the results of training results [7].

One of the competencies of the vocational education expertise in Bandung that carries out Prakerin's activities is on mechanical engineering skills. Mechanical engineering specializes in discussion or learning about mechanical engineering matters. The industrial practice work program that students have done needs to be evaluated to see the suitability between the planned program and its implementation. This is intended as a basis for preparing a follow-up program that must be done on the achievement of student competence as well as on Industry Practical program.

The effectiveness of the implementation of the program is not only seen from the students only factors but other factors must also be considered. For example, teachers, curriculum, facilities and infrastructure, teaching and learning activities in schools, industry practical, industrial relations or partner institutions and other factors. Based on the existing problems, it is necessary to evaluate the Industry Practical program of mechanical engineering competence. Evaluation to be conducted is evaluation of student, productive teacher, Industrial Practical guidance teacher, curriculum, infrastructure, teaching and learning activity at school, practice activity in industry.

2. Objective
This research aims to see how far the achievement and achievement of Industry Practical program in terms of context, input, process and product.

3. Research Methodology
This research was conducted to evaluate the implementation of industry practical program vocational school students in Bandung. Therefore, this research is included in the type of evaluation research with descriptive method with mix method approach. This research data is obtained through questionnaire given to the student and teacher mentor after prakerin done. In addition to using questionnaires, research data also obtained through observation, interviews and documentation. This research is population research, where there are 91 respondents and to support the respondent's answer the researcher also conducted interview with 5 speakers consisting of vice principal of public relations, head of study program and productive teacher.
The conceptual framework refers to a set of related concepts to each other logically with respect to the phenomena [8]. Conceptual frameworks are used as a guide for conducting research [9]. For example, to identify a research question. Research questions are built within a conceptual framework [10].

Prakerin programs that have been done by students need to be evaluated to see the suitability between the program and its implementation. This is intended as a basis for the preparation of follow-up programs that must be done both to the achievement of student competence and to prakerin program.

To carry out this research, the researcher has developed a conceptual framework based on the Stufflebeam model evaluation study [9], while the evaluation used is CIPP as shown in the following figure:

![Figure 1. CIPP evaluation](image)

According to the figure above, there are four dimensions that must be considered in the implementation of prakerin program that focuses on educational goals and learning outcomes for vocational school students in Bandung Indonesia in terms of context, input, process and product dimensions [12,13].
4. Results and Discussion
The results showed that the average aspect of the context in program is 32.54% which is included in very good category. The average that occurred on the input aspect of 48.07% included in either category. Aspects of the process in program showed an average of 33.65% included in either category.

While for average aspect of product in program equal to 24.79% which is included in high category.

There is a positive relationship between the results of the evaluation Context, Feedback, Process together to the evaluation of the Product, contribution relationship = 82.1% the remaining 17.9% contribution of other factors; a positive relationship between context evaluation and product evaluation = 0.656 occurs strong relationship; the relationship between input evaluation with product evaluation = 0.449 occurs a strong enough relationship; the relationship between process evaluation and product evaluation = 0.895 occurs a very strong relationship.

5. Conclusions
Prakerin programs that have been done learners need to be evaluated to see the suitability between the program and its implementation. Components of the organization Industry practical include students, productive subject teachers, mentors, and mentors from DUDI. When compared to other scoring models, CIPP contains context, Input, process and product dimensions can be researched using four dimensions or using any combination of CIPP dimensions. This depends on the program requirements. The CIPP appraisal model is more emphasized to collect information in order to facilitate decision-making. This is intended as a basis for the preparation of follow-up programs that must be done both to the achievement of competence of students and to Prakerin program. This information will also be used as a guide to further improve the program both on planning, structuring, implementation and outcome. Consequently, future decisions will be made whether to proceed, modify, add or discontinue the program.

References