

# artikel

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## Evaluation of the Implementation of Industrial Practice Learning in Automotive Students

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**Abstract.** The objectives of this study include 1) evaluating the weaknesses of industrial practice by students, 2) Knowing the work procedures implemented by the university in terms of observation, implementation and evaluation, and 3) strategies to improve the quality of industrial practice in the study program. The method in this research is descriptive research with cluster random sampling technique. The selection of this population is all universities in Central Java and Yogyakarta automotive engineering education study programs, as well as samples from this study 3 universities. The result of the research is clearly seen that between study programs and industry running independently, the study program ignores the competencies that exist in the industry, as well as the industry without offering what should be learned later in the industry. It is the responsibility of the study program coordinator to revitalize industry practices, that the study program must ask what to learn in the industry or offer competencies that must be learned in the industry. There are a number of steps that must be taken in improving the quality of industrial practices, he said, by 75% stating that there must be an update in learning in industry, 83% should have guidelines for learning industrial practices, for 67% there are guidance for guidance for instructors in the field, amounting to 75% there are guidance guidelines for supervisors.

**Keywords:** automotive, evaluation, industrial practice, students,

### 1 Introduction

Education is believed to be able to instill knowledge, skills, and values with which humans can enhance their ability to live [1] [2]. The concept of human capital states that education, training, or other forms of human investment instill knowledge, values, skills, which are useful in humans so that humans can increase their learning and productive capacity, which allows them to pursue higher education. [3]

According to the National Education System Law [4], national education aims to develop the potential of students to become human beings who believe in, and devote to God Almighty, have good character, are healthy, knowledgeable, creative, independent, and become democratic citizens and citizens to be responsible. Education is a tool to improve life, the chain of arrangement of the ecosystem. Future investment education and a bridge leading to the tranquility of life and an absolute after life, the main capital of the caliphate of man. Even education is a miniature of civilization, a symbol of the establishment of a nation.

Indonesia's National Education aims to improve the quality of whole people, namely people of noble character, advanced personality, resilient, intelligent, creative, skilled, disciplined, having professional work ethic, responsible, productive, healthy, physically and

spiritually. To achieve these national education goals the quality of the learning process must be pursued with knowledge and improvements as needed through educational innovation.

Vocational education (vocational), has a distinctive value that is the relationship between the acquisition of knowledge [5], skills and attitudes with work values (positions), especially related to the expertise needed by the workforce. Of the three aspects are obtained together and mutually reinforcing one another. If one of these is ignored it will affect the success of vocational education [6].

Vocational education is education that is oriented towards the development of learning processes and outcomes [7] [8]. Not only the need to learn in school, but the quality of graduates becomes a benchmark for the success of vocational education.

If it is studied in depth such as the concept of dual system education that through actual industrial practice is not just doing the obligation of the curriculum of study programs at tertiary institutions, but more so that industrial practice can add insight into the world of work [9] [10], can train mental work, even can prepare the actual abilities of students before they graduate who eventually plunge into the world of work [1]. Learning in industry is not just about completing the curriculum, but rather that students can be educated how to interact with superiors, coworkers and clients to train soft skills that must be present in every student.

From the implementation of industry practices that have been running to date in vocational education teacher candidates for automotive expertise, it is necessary to study in depth the process of implementation in the field. The aim is to see the extent of the weaknesses and strengths of industrial practices in accordance with the principles of work based learning.

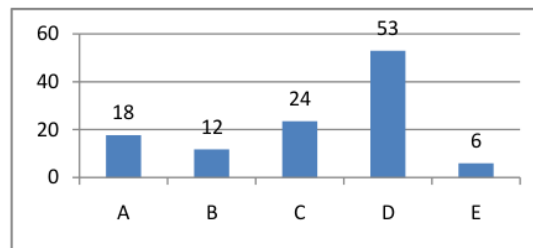
## 2Method

The method in this research is descriptive research. This research took place at Semarang Veterans University, Taman Siswa Yogyakarta University, and Muhammadiyah University Purworejo. The population in this study are universities in Central Java and Yogyakarta Automotive Engineering Education Study Program. The sampling technique in this study was cluster random sampling with consideration of the Study Program for organizing an automotive engineering education program. Data collection techniques are done through documentation and using a questionnaire. The questionnaire is used to gather information about evaluating the implementation of industry practices that have been running. The questionnaire was distributed to lecturers and students of automotive engineering education study programs. The data analysis technique used is to use quantitative descriptive, describing the results of a questionnaire in the form of weaknesses and strengths of industry practices that have been running so far. Furthermore, communicative data is processed with the expected amount and obtained a percentage [11].

The collected data were analyzed with quantitative descriptive analysis techniques revealed in the distribution of scores and percentages against the specified rating scale categories [12]. After serving as a percentage, the next step is to describe and draw conclusions about each indicator and question.

### 3Results and Discussion

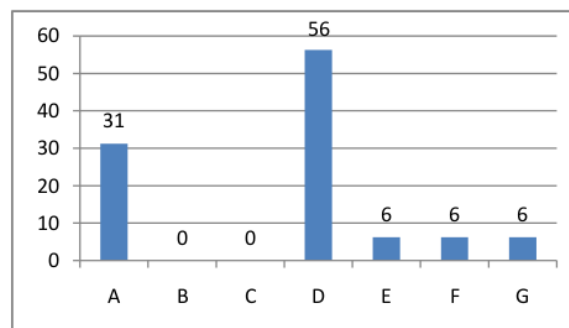
From the results of the research conducted there are a number of things that have become a lack of industry practice so far, including factors from students, study programs, management, and learning in the industry. For a more complete explanation, see the following diagram:



**Fig 1.** Lack of industrial practice from students

Note: A. Less serious in carrying out industrial practices, B. Does not understand the flow of implementation of industrial practices, C. Discipline is reduced after from industrial practice, D. Does not prepare practice before industrial practice, E. Difficulties in preparing reports

From the results of the questionnaire distributed, it turns out that 53% stated that the study program in general did not prepare practice before leaving Industrial Practice. There are 18% of students less serious in carrying out industrial practices, and there are 24% of reduced discipline after the practice of industry [2]. In addition there are 12% who do not understand the flow of industry practice and 6% of difficulties in making reports.

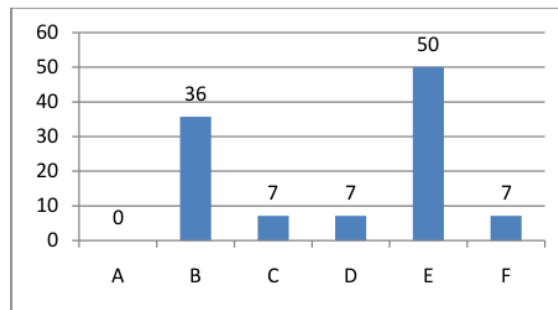


**Fig 2.** Lack of industry practice from the study program

Note: A. Does not establish cooperation with the business world and the industrial world, B. Does not conduct monitoring to the industry, C. Does not make guidelines for the implementation of industrial practices, D. Does not make a learning program preparation for

industrial practice, E. Does not facilitate computers in making PI, F. Cooperation exists but there are not many industries that are invited to collaborate, G. Lack of communication

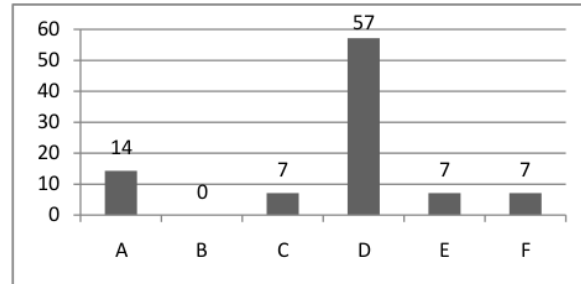
From the results of the scattered instruments from the most dominant study program is not collaborating with the business world industry 31%, this shows that indeed most study programs do not establish cooperation [13], there are 56% stated that the STDU program has not made a report industry practices, this can be a constraint that can lead to lack of orderly administration. 6% is less facilitating industrial practices, and lack of communication between lecturers and students.



**Fig 3.** Lack of industry practices from industry

Note: A. Does not want to accept students of industrial practice, B. Does not provide clear guidance to students, C. Only asks students to look at the industry, D. Some industries only allow students to help mechanics pick up tools or wash vehicles / spare parts without look at the ability of students, E. Does not offer industrial practice programs to study programs, F. In work sometimes exceeds what they should

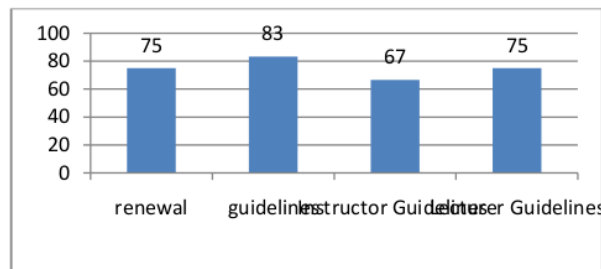
From the results of a questionnaire about the lack of industry practices in terms of industry it can be seen that 50% stated that the industry does not offer programs to the industry, meaning that the industry does not explain to the study program the activities to be carried out by students in the industry [14] [15]. This can also be triggered because most of the study programs do not follow up on the acceptance of participants, what will industry practices be like. This can cause many students to change the place of PI because it does not fit into the situation, or the activities carried out by Industry Practices participants. In addition there are 36% of the industry does not provide clear guidance to students.



**Fig 4.** Lack of industrial practice from management elements

Note: A. Not aware of the procedures for placing PI students in industry, B. There are no committees in PI, C. There is no clearly documented administration of PI, D. There is no competency agreement that must be studied at school and those that want to be studied in industry, E there is no clear location / workshop that is used as a minimum requirement for a student PI place, F. The certificate making is not finished immediately

From the questionnaire above stated that 57% of the lack of management is the absence of an agreement between the competencies that must be learned in the study program and those that will be studied in the industry. Here it is clearly seen that between study programs and industry running independently, study programs ignore competencies in the industry, as well as industry without offering what they should learn later in the industry. It is the responsibility of the study program coordinator to revitalize industrial practices, that the study program must ask what should be learned in the industry or the industry offers competencies that must be learned in the industry [16].



**Fig 5.** Strategies to improve learning industry practices

There are several steps that must be taken in improving the quality of industrial practice purchases, including 75% stating that there must be renewal in learning in industry, 83% must have guidelines for learning industrial practices, for 67% there is guidance for guidance for instructors in the field, amounting to 75 % there are guidance guidelines for the supervisor. If the renewal in the implementation of industrial practice will be able to improve the quality of the workforce, in this case prospective teachers of automotive engineering education [17].

#### 4Conclusion

From the results of this study, the results include: 1) Weaknesses in industry practice 53% stated that the study program in general did not prepare practice before leaving Industrial Practice. There are 18% of students less serious in carrying out industrial practices, and there are 24% of disciplines reduced after the existence of industrial practice. In addition there are 12% who do not understand the flow of industry practice and 6% of difficulties in making reports. 2) Weaknesses in terms of the implementation of industrial practices 57% lack of management is the absence of an agreement between the competencies that must be learned in the study program and those that will be learned in the industry. Here it is clearly seen that between study programs and industry running independently, study programs ignore competencies in the industry, as well as industry without offering what they should learn later in the industry. This is the responsibility of the study program coordinator to revitalize industry practices, that the study program must ask what should be learned in the industry or the industry offers competencies that must be studied in the industry. 3) There are several steps that must be taken in improving the quality of the practice of industry. , as much as 75% stated that there must be renewal in learning in industry, 83% must have guidelines for learning industrial practices, as much as 67% there are guidance guidelines for instructors in the field, by 75% there are guidance guidelines for supervisors.

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