

# Analysis of the Competence of Expertise in the Internship Program in the Industrial Era 4.0 Vocational Education in Indonesia

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This study aims to analyse the suitability of expertise competencies through the fabric of cooperation between vocational and industrial education, information on where the Internship program is implemented, the role of educational institutions, and individual factors of students. The approach used in this research is a qualitative approach with a case study. The results of this study are: (1) Collaboration has not been established in a binding manner and is still on the proposal and application letter for the Internship program, reciprocity based on the specific task of the supervisor, (2) The role of the industry is appropriate for the Internship program based on the analysis of competency expertise; (3) The role of educational institutions in the provision of expertise competencies in terms of theory and practice is appropriate, in terms of monitoring and learning planning there needs to be improvements such as cooperation in a bound; and (4) Individual factors play a key role in apprenticeship learning, such as mastery of expertise competencies, and soft skills.

**Keywords:** *expertise competency, internship program.*



## INTRODUCTION

The emergence of the Industrial Revolution 4.0 in the industrial world makes everything completely digital, and the conventional system is increasingly far behind. When the Industrial Revolution 4.0 invaded, all human labour was replaced by digital machines. So, one question arises, where will the graduates of Vocational Education be prepared to work? Industrial Revolution 4.0 is a transformation effort to improve efficiency in each value chain by integrating digital capabilities and production lines in the industry that refers to enhancing automation, machine to machine and human to machine communication, artificial intelligence, and developing sustainable technology in the industry. The demand was inevitable, but must be welcomed by preparing as much as possible to appreciate the era. Implementation of the Industrial Revolution 4.0 requires new skills so that the preparation of Human Resources (HR) with competence by technological development is a non-negotiable necessity.

If the current government has made a strategy with making Indonesia 4.0, then so too with educational institutions, in particular vocational education, breakthroughs and innovations need to be encouraged. Industry challenges and opportunities where 4.0 promotes innovation and the creation of vocational education. The government needs to review the relevance of vocational education and employment to respond to the changes, challenges, and opportunities of the Industrial Era 4.0 while continuing to pay attention to the humanities.

The challenges of vocational education are increasingly involved with Industry 4.0. Vocational education is different from other types of knowledge learning and must have the following characteristics; 1) oriented to the performance of individuals in the world of work; 2) special justification for real needs in the field; 3) curriculum focus on aspects of psychomotor, affective, and cognitive; 4) benchmarks of success are not limited to school; 5) sensitivity to the development of the world of work; 6) require adequate facilities and infrastructure, and 7) there is community support [5].

Learning in vocational education has the main concepts and roles in developing student characteristics. Learning in achieving student competency can be obtained in a variety of activities in the learning process. The standard competence itself in learning is the minimum

level of ability that can be achieved is incompetence [12]. All events in the learning process that are known and can be done by students as a result of student education are a standard in learning competence [28].

The results of vocational education student learning activities can be known through students' mastery of a set of competencies that have been determined from cognitive, affective, and psychomotor aspects which are the results of normative, adaptive, and productive education programs, where mastery of a set of competencies can be seen from the ability of students to do a set of work, work on questions and assignments that can be measured through student achievement (student academic achievement) based on competency-based assessment.

Development of competency levels and work skills occurs at different levels in each individual, organisation, and broader society and is influenced by changes in the content and context of individual performance [19]. The development or improvement of vocational education student competencies is not purely accepted in schools but at the internship location that also has a role in improving student competency.

As explained by previous research, the importance of the internship program is as part of the educational curriculum that students must follow [23]. Preparing graduates for competition in the 21st century, schools must equip students with a set of 21st-century skills [16]. This shows that graduates are not enough to only have academic performance indicated by class points, but they must also be supported by practical experience needed by the job market. In recent years, various vocational schools in Indonesia have intensified apprenticeship programs to prepare graduates to be ready to enter the job market.

In this final year, most vocational high schools require their students to attend an internship program within one year as a prerequisite for graduation. This shows that graduates are not only needed to master the theory but must also have the practical experience needed by the job market. This not only applies to various vocational high schools in Indonesia but also occurs in different vocational high schools in developed countries. In the early 1980s, only 3% of students participated in the apprenticeship program before graduation; in 1999, more than 80% of advanced students joined at least one internship program. In the period 1980 to 1999, the

number of students involved in the apprenticeship program increased from 200 students to 1,000 students. In 2012, graduates who worked were those who intensively participated in various internship programs [13]. According to the NACE (National Association of Colleges and Employers), the survey revealed 7% of apprentices were recruited as permanent employees, and 66% of workers assumed that work experience gained from internships became a determining factor for graduates to be accepted as full-time employees [21]. This proves that the internship program is a determining factor for graduate work readiness.

Student involvement in the Internship Program will provide work experience to enter the world of the job market [4] [3]. Thus, the university must be involved in helping students for the Internship Program [20]. The internship program also needs to be carried out intensively in a sufficient amount of time, so students really get the work experience that students need. Previous studies stated that the apprenticeship program, which is a learning activity for advanced students, aims to enhance productive activities that provide work experience related to their scientific fields, thereby increasing work readiness after students graduate [7] [14] [24] [27] [10] [11] [17]. The internship program is basically a form of experiential learning and is implemented in a variety of activities, including cooperative education, field studies, practicum, service learning, external, and internships [9] [18]. There are many researchers in the world who examine the importance of an internship program for students. Several previous studies have stated that the internship program plays an essential role in preparing students to enter the workforce when they complete their studies [1] [8] [6].

In Indonesia, the apprenticeship system begun to improve employment from vocational high schools that are ready to use in the industry. Now the main problem for facing the Industrial Revolution Era 4.0 is whether or not there is a match between the competencies of students' skills and the apprenticeship programs in industry with the preparation of a productive workforce. To analyse this problem, observations will be made to find out the extent of compatibility between the competencies of students in apprenticeship programs in industry following the perspectives of industry, teachers, and students of vocational education in Indonesia.



## **METHOD**

Qualitative research with descriptive case study type examine in more depth and focus on what is studied. In-depth interaction in qualitative analysis will help researchers find and explore information accurately and validly from several sources, and the last is the researcher wants to feel and know the situation in more detail regarding the implementation of the internship program.

This research was conducted at the Vocational High School, East Java, Indonesia. In the Department of Mechanical Engineering which targets the Coconut Industry, Students and Teachers. The research was also conducted at the Company Location Internship Program as a source of company data. The number of primary informants (students) studied were 100 people as a triangulation of data sources. After that, confirming the existing data in the sample of teachers (50 people) and also from the industry (50 people) as consideration of data validity.

The collection of qualitative research data is emic posterior, which means more emphasis on the meaning of social reality as understood or internalised by citizens as informants, not statements in theory. The data collection techniques that can be used for qualitative research include interviews, documentation, and observation/observation. Therefore, the researchers decided to use these three data collection techniques.

Interviews in this research data collection activity are the main data sources, namely between two people or groups which involve the interviewer (interviewer) and the interviewee (interviewee) as the informant. Where the interview process is done by asking questions to informants/research subjects to get information. Therefore, this interview method is aimed at each party involved, namely Students, Vocational High Schools, and Industries. By linking it to the focus of the research, the following is a description of the study that will be discussed in the interview.

**Research Focus, Research Sub Focus, and Research Sub-Focus**

No	Research Focus	Research Sub Focus	Research Sub-Focus
1.	The partnership between universities and industry is viewed from the perspective of students, vocational education, and industry.	a. There are cooperation and openness in adjusting expertise competencies expected by vocational education and industry b. There is a factor in the need for labour for industry from graduates of vocational education c. Reciprocal add science and technology to the industry with improved learning programs for the vocational education	a.1 There is a discussion forum in the preparation of learning a.2 There is a contract stating the industry's needs as well as vocational education about the required competency expertise a.3 The procedure of initiating a collaboration between vocational education and industry relates to industry practice b.1 Industry desperately needs vocational education graduates c.1 Vocational education students gain new knowledge about the world of work c.2 The industry gets input and improvements to the production system from both vocational education and students
2.	The venue for the Internship program is reviewed from the perspective of students, vocational education, and industry.	a. The alignment of learning objectives is in accordance with the competence of expertise in vocational education with industry. b. Infrastructure factors are in the industry c. Industrial instructors/guides as	a.1 Students do not feel a significant difference between the competency of the skills taught in vocational education and in the industry. b.1 The industry has a standard production machine that can be used in the learning process of students.

implementers of learning in the industry b.2 Industry provides infrastructure for production machinery for student learning.

No	Research Focus	Research Sub Focus	Research Sub-Focus
			<p>C. 1 Industrial advisers provide direction in the learning process for students.</p> <p>C. 2 There are competent industry mentors in the machining field.</p>
3.	The role of educational institutions as implementing agencies of the Internship program is reviewed from the perspective of students, vocational education, and industry.	<p>a. Monitoring from the supervisor as an observer and evaluator of the implementation of the Internship vocational education student program.</p> <p>b. Equip the competencies required by industry in terms of learning theory and practice</p> <p>c. Carry out preparation, implementation, and assessment in accordance with the plan</p>	<p>a.1 The supervisor monitors his students who are currently carrying out the Internship program.</p> <p>a.2 The supervisor asks and seeks information about conducting student internships with industry advisers.</p> <p>b.1 Vocational Education has provided all the theories and practices that have become the industry standard</p> <p>c.1 Vocational Education prepares for an internship program by collaborating in several industries, preparation of an internship program student with initial training with a supervisor.</p> <p>c.2 Implementation of program leadership by planning</p>

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			(proposals, instructor instructions, according to competence)
			C. 3 Student assessment is done objectively according to student performance.
4.	Individual student factors	a. The influence of mastery of expertise competence in the implementation of Internship program activities	a.1 Students are able to complete all assignments given by industry advisers. b.1 Reasons for choosing the industry for an internship.
		b. Conformity of the desired experience with reality in the field.	b.2 The purpose of the internship in the proposal is planned with the internship activities in the industry.

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## RESULTS

Based on the data exposure, the research findings in each focus and sub-focus of the study are as follows:

### **A. The Interwoven Collaboration between Vocational Education and Industry in the Perspective of Students, Vocational Education, and Industry**

#### ***a. There is cooperation and openness in adjusting the expertise competency expected vocational education and industry.***

Based on interviews with vocational education and industry with a total of 200 speakers, observations, and documentation, the findings that can be obtained is that there is still a lot of cooperation between vocational education and industry so that the learning process of internship programs in the industry today begins with letters and proposals from individual students. The contract for the need of an internship program is only on student proposals, and there has never been any discussion between vocational education and industry about the

ongoing internship program implementation. If you want to collaborate, the parties from the industry are open, and to start a collaboration with the applicable procedures, the procedure is given by the industry to start the cooperation is, to begin with a letter of application, until finally the acceptance and discussion of the planned collaboration.

***b. There are factors that need for labor for industry of graduates of vocational education students.***

Based on the interview data, observation, and documentation available, the findings for the sub-focus of this research demonstrate the lack of cooperation between vocational education and industry, the fulfillment of labour needs has not reached the level of agreement, but when viewed from the experience of students who practice industry, that the industry at the time of the implementation of the internship program does not really need energy from the practitioners. However, it cannot be denied that the competencies of graduates from vocational education are in line with industry needs.

***c. Reciprocal adding science and technology to industry with improved learning programs for vocational education.***

Based on the interview data, observation, and documentation available, the findings that can be taken is that all this time for mutual knowledge has not been maximised, where indeed cooperation and mutual openness of all parties involved is the key to knowing and being able to reciprocate the science and technology needed by companies as well as vocational education and students in learning, gaining experience in the world of work and as an applicative theory in schools. So far, the reciprocity lies in the specific assignments given by the industry to students practicing as a reciprocal of science and technology as well as student innovation, and the percentage is very rare. The company sees more reciprocity in research and sees less when it comes to the implementation of the internship program, due to limited time. Of course, the industry is also very much hoping for this reciprocity.

## **B. The Place of Internship Program Is Seen from the Student's Perspective, Vocational Education, and Industry**

### ***a. Harmony of learning objectives in accordance with the competence of vocational education skills with industry.***

Based on the interview data, field observations, and available documentation, the findings that can be obtained are the alignment of the objectives of learning competency expertise in vocational education, and the industry is very suitable, although not entirely the same. Where vocational education is a place to get the provision of theory that will be applied to knowledge in the industry, where machines and mechanical engineering are all used, such as energy conversion machines, motors, welding, and others. However, what needs to be considered is that the learning scheme is indeed more for individual students who have to study, search, analyse, and match themselves from the knowledge gained in vocational education with those in industry. In the industry more focus on improvisation of knowledge that has been obtained in vocational education is due to the more complex situations and problems faced.

### ***b. Factors of infrastructure in industry.***

Based on interview data exposure, field observations made, and available documentation, the research findings for infrastructure means that the machines used in learning are all pure production machines in the factory. The industry provides facilities or facilities and infrastructure in student learning, but still within company rules, such as given by instructors or assistants in the industry, and access facilities in all areas of the factory for observation. For students that are not allowed to control or operate machines individually, students are allowed to ask questions, observations/observations, or do manufacturing work such as welding but not in the physical parts. The situation of factories is that they use large machines that are very dangerous which causes the industry to not want to take risks.

### ***c. Industrial instructor as implementing learning in industry.***

Based on the interview data, observation, and documentation available the findings of this study are that the industry supervisors play a role in directing students' internship programs in industry, according to the competencies and abilities of each supervisor. In general, industry advisers are highly competent as instructors for students in an internship program, but

direction and guidance are not done regularly and routinely or can be said to depend on students' situations and desires because industry mentors also have other preoccupations, namely workers in the factory. In the selection of these industry advisers based on student majors or if it is not possible then the internship program students can also get mentors in different fields, but even so the industry supervisors are still competent because they definitely know all the contents of the factory. Furthermore, the lack of interaction between vocational education supervisors and industry advisers also results in the absence of mutual evaluations in student internship activities. For industry advisers, it is considered very responsible in guiding students, seen from conducting student reports even though there is no intensive / wage for industry advisers.

### **C. The Role of Educational Institutions as Implementing Agency for Internship Programs From the Perspectives of Students, Vocational Education, and Industry**

#### ***a. Monitoring from counselors as observers and evaluators the implementation of internship programs for vocational education students.***

Based on the interview data, observation, and documentation available the research findings demonstrate the absence of monitoring supervisors who come to the industry to discuss with industry advisers, look at the implementation of the internship program, or talk to students and industry parties. One obstacle that arises is the absence of planning that means vocational education supervisors can monitor students in all industries, especially for students themselves, such as budget guidance. Monitoring is carried out by the supervisor by giving direction before the internship program or by communicating through electronic media to discuss matters regarding the ongoing internship program. The industry said that vocational education had not yet come to the industry at all to interact with the internship program.

#### ***b. Provision of competency expertise required by industry in terms of learning theory and practice.***

Based on the interview data, observation, and documentation available, the research findings for the sub-focus of this research are about the theories and practices that become industry needs which are appropriate and can be applied in the industry. But there are some notes on

this matter, which is the main point is how students can improvise and modify the abilities that have been obtained by learning or training in industry because the problems and solutions presented in the industry may be different, then the need for socialisation from universities which should have been having a map of the concept of industrial requirements that will be addressed for the implementation of this internship program aims to adjust to the theories and practices that exist in vocational education. In interview notes, it appears that students are valued by industry capable in terms of theory and have not yet received an assessment in terms of practice.

***c. Carrying out preparation, implementation, and assessment by planning.***

Based on the interview data, observation, and documentation available, research findings in the focus of this research are the preparations made in the Internship Program program are functional and still need improvement such as preparing for an internship collaboration to carry out an internship program, checking the situation and feasibility of the industry to be used as a place of practice, and making a list of the needs of each institution in this case universities and industry. During this internship preparation seen in debriefing from the college as in public lectures and on the application for an internship from individual students on behalf of the institution as an institution formality. In the implementation of the internship program is still considered quite good but still needs improvement and the role of the industry supervisor and student mentor who has carried out as much as possible in the implementation of the internship program. Students play an essential role in internship program learning, whether a lot of knowledge or skills gained in implementing an internship depends very much on the ability, willingness, motivation, and enthusiasm of student learning. In terms of assessment, both from the vocational education and industry are more oriented to student reports and examinations conducted where the assessment format is entirely from the vocational education party.

#### **D. Student Internal Factors**

##### ***a. Effect of mastery competency expertise in the implementation of internship program activities.***

Based on the interview data, observation, and documentation available, the research findings for the sub-focus of this research area in the influence of competency skills mastered by students before the internship program and after the apprenticeship certainly have added value in terms of knowledge, as well as in the world of work experience as well as about K3 but cannot be assessed quantitatively because there is no assessment to students before and after the program leadership. In mastering the competency of expertise possessed by students when practicing in the industry depends on the individual student concerned and the industry that assigns assignments to students. In the data it can be seen that vocational education students are still in a rare stage to be able to complete or get assignments from the industry, this is also due to several factors including limited time or on the ability of students assessed by the industry.

##### ***b. Conformity of desired experience with reality in the industry***

Based on data from interviews with students and industry, observation, and documentation available, the research findings for the sub-focus of this research are first seen from the reason students who choose sector as the place of the internship program are close location factors, and about competencies that are appropriate with mechanical engineering. On the other hand, the industry facilitates educational institutions to learn in the implementation of an internship program to equip academics to gain knowledge about the world of work. In terms of learning, students are expected to get the apprenticeship objectives desired in the proposal with the reality in the company, such as work experience and knowing the production process. The industry has also adjusted the learning desired by students through the proposal, but it must also be balanced with the willingness, motivation, and seriousness of students in learning in the industry. The industry also assesses that in general vocational education graduates should not only be capable in academic or hard skills but also soft skills in this case communication skills etc.

## **DISCUSSION**

This section provides an explanation of research regarding the suitability of expertise competencies in the implementation of internship programs. This discussion includes: (1) The partnership between Vocational Education and industry as reviewed from the perspective of students, Vocational Education, and industry; (2) The place where the Internship program is conducted is viewed from the standpoint of Students, Vocational Education, and industry; (3) The role of educational institutions as implementing agencies of internship programs / internships from the perspective of students, Vocational Education, and industry; and (4) Individual student factors.

### **A. The Interwoven Collaboration Between Vocational Education And Industry In The Perspective Of Students, Vocational Education, And Industry**

From the findings of the three research, sub-focus reveals that there is no cooperation in the preparation of industrial internship learning or collaboration to discuss the needs of each party, in this case, vocational and industrial education. This discussion is critical because it relates to the suitability of expertise competencies between several parties involved. There is a need for mutual openness and mutual need when talking about the implementation of this industry internship, transparency in the sense that each party immediately conducts negotiations to find the harmony of learning internships in the era of the Industrial Revolution 4.0. This collaboration or partnership is a necessity for universities because universities have needs. Conversely, the industry also has a need for education, especially universities in several ways, one of which is the need for human resources [26].

As for other factors as to why the industry apprenticeship program and vocational education must work together if they want to implement an industrial apprenticeship program is to find the suitability of expertise competencies and become a bridge between the vision and mission differences of both parties. In general, the industry has a profit-oriented vision and mission, and vocational education is oriented to create reliable human resources, one of which is by having work experience in the industry.

Reciprocity of science and technology has a positive impact on the implementation of industrial internships. But so far the industry actually sees the reciprocal of science and technology is more on activities limited to courses thus that the evaluation and improvement of competencies through the establishment of an industry-based curriculum has not been maximally implemented by vocational and industrial education.

Skill suitability that is expected based on the discussion above can be concluded that, cooperation is an essential support in finding the harmony of learning and skills competencies needed, vocational education students of Mechanical Engineering Program have the expertise competencies required by the industry in recruiting caricatures, and in science reciprocity the knowledge of a professional education student will be known for how much competence is possessed from the assignments given by the industry supervisor.

### **B. The Place of Internship Program Is Seen From the Student's Perspective, Vocational Education, and Industry**

Based on the actual research findings, there are several industries that are relevant and suitable to be used as internships for students and some are also irrelevant, based on observational interviews and documentation that have been conducted. Noteworthy is that the learning scheme is indeed more on individual students to learn, search, analyse, and match themselves from the knowledge gained in vocational education with those in industry. Because not as a whole, students must imply and develop what they already have with the situations and problems faced in the industry, which are more complex and high. The intended industry or company must be in accordance with the department because the Internship Program is an embodiment of the relevance of theory to universities or lectures and practices found in the business or industrial world [2]. Besides that, the suitability of expertise competency between vocational education and industry helps students prepare their skills in work.

Furthermore, industrial instructors or mentors as implementers of learning in the industry and as supporting factors in the adjustment of expertise competencies. In general, industry advisors have the capacity to guide, both in terms of competence and in terms of guidance and direction. The role of the industry supervisor is significant in student internship learning. In the research

findings, it explained that the leadership done so far to the internship students is not routine and periodic or can be said in accordance with the situation and desires of students, this is also due to the busy schedule of the supervisor completing his obligations as industrial employees who cannot be left behind. The low intensity of guidance and supervision, in which technical advice is an additional job for employees who are assigned, so because the busy monitoring is done casually, student activities are less well monitored [15].

The findings which state that the industry selects industry mentors based on the student internship majors, and the selection of supervisors may also be different majors due to several reasons such as the full capacity of the guidance, but even so, the industry adviser remains competent because of course it still knows the entire contents of the factory, although indeed the pattern of leadership carried out must be different for each mentor because it has its character and manner. Another thing that needs to be discussed is the responsibility of industry advisors who are willing to guide in writing student reports to completion. Some of these analyses actually illustrate that the pattern of industrial coaching is already maximal and functional, but because it is closely related to student achievement in the implementation of internships, it is necessary to have positive interaction from all parties involved, especially in vocational and industrial cooperation in formulating clear and directed courses so achieving common goals.

### **C. The Role of Educational Institutions as Implementing Agency for Internship Programs From the Perspectives of Students, Vocational Education, and Industry**

In the discussion on vocational education supervisor monitoring related to internal management contained in vocational education, several teachers interviewed stated several reasons that caused them not to or could not monitor their students in industry, including the budget, the assignment of tracking to the industry that had not reached the supervisors, and in cooperation which has not yet been established and results in the absence of mutual openness. Monitoring by vocational education advisers has been oriented towards the beginning before the internship, which provides advice and messages to students. Monitoring during this time when the implementation of technical courses at the maximum interaction of students and supervisors of vocational education is through electronic media while to come directly to the

place of the industry has not been done. Guidance and monitoring should be increased in intensity and quality with the supervisor along with industry advisers provide motivation so that students can use the apprenticeship program as a learning tool that must be maximised, and provide an objective assessment of students [25].

The implementation of the apprenticeship is considered quite good but still needs improvement, such as the role of the industry supervisor and vocational education supervisor who has carried out as much as possible in the implementation of the internship program. Students actually play an essential role in apprenticeship learning, whether or not much knowledge or skills in implementing internships is dependent on the ability, willingness, motivation, and enthusiasm of student learning. Sintawati and Sudjimat also found similar things in terms of implementation that not all managers were involved in the implementation of internships, briefing material did not cover aspects related to industry, students were not maximally utilising production materials in manufacturing, lecturer guidance during courses was not optimal, and the implementation of internships for two months it is not maximal to reach the internship goals [25].

The suitability of expertise competency based on this discussion can be underlined, namely, monitoring of vocational education supervisors as observers and evaluators plays essential roles such as to know, adjust, and discuss with the industry in learning as material for increasing student competency expertise, suitability of Mechanical Engineering student competency which is a provision before carrying out an apprenticeship is considered quite reasonable and appropriate, and in preparation, implementation and assessment as a means of analysing the suitability of competency expertise is considered quite good, but there need to be improvements such as collaboration before apprenticeship and supervisor monitoring.

#### **D. Student Internal Factors**

The influence of the mastery of the expertise competencies of vocational education students is very supportive in the implementation of the internship. One of them is when a student gets an individual assignment from an industry adviser. Paramita explained about the apprenticeship problem, especially in students because not all students had the readiness to carry out industrial

practice because this was one of them being unable to solve practical problems. But in the case of students in the interview is still at a stage rarely given specific tasks and rarely to be able to complete the given task. This can be caused by limited time and the ability of students who are assessed by the industry [22].

Mechanical Engineering students who carry out industrial internships must have their own goals and targets in carrying out courses. These objectives can be set forth in a proposal, for example, the industry is the experience of the world of work, knowing the production process, the work system in production, etc. The research findings show that the industry has also adjusted the learning desired by students through the proposal, but must also be balanced with the willingness, motivation, and seriousness of students in learning in the industry. The industry also assesses that in general vocational education graduates should be not only capable of hard skills but also soft skills in this case, communication, manners, etc.

Talking about hard skills and soft skills students in interviews conducted found that the industry prioritises soft skills compared to hard skills. This opinion has a strong reason. Muslih also stated the same thing in his research on soft skills, namely the ability of soft skills is very important because it refers to the relationship between students who are apprentices and employees of the company where they are apprenticed as many have stated that the ability of soft skills determines a person's success in a career than his technical ability [20].

Associated with the suitability of expertise competencies from internal factors students refer to the competency standards that must be mastered by students themselves. That means that a student who enters the industrial world must already have the standards required by the industry itself, for example, a student must have a measure of competence in the field of welding to be trusted and to be able to complete the welding task in the industry, and so forth.

## CONCLUSION

### **a. The Interwoven Collaboration between Vocational Education and Industry in the Perspective of Students, Vocational Education, and Industry**

Cooperation is an essential part of finding the suitability of competence in the implementation of internship programs in the industry. Based on this research, collaboration between industry

and vocational education has not been established. Some things that make this collaboration valuable are that cooperation can be a bridge to find suitability in increasing competence according to the industrial world, as a link to the fulfillment of industrial workforce by graduates of relevant vocational education, and as a reciprocal need for knowledge for all parties involved.

**b. The Place for Internship Program from The Perspective Of Students, Vocational Education, And Industry**

The suitability of expertise competency, based on research shows that there are many applicable theories and practices that are suitable for mechanical engineering competence, such as energy conversion machines, welding, motors, etc. The location industry Internship Program provides the means and infrastructure for apprenticeship learning in the realm of analysing, asking questions, freely entering factory access for observation, or doing manufacturing on non-physical objects. Industry facilitates students with supervisors who are competent in their fields as an adjustment to increase competency skills.

**c. The Role of Educational Institutions as Implementing Agency for Internship Programs from the Perspective of Students, Vocational Education, and Industry**

The suitability of the expertise competency shown by educational institutions, namely vocational education in monitoring through the supervisory teacher in the implementation of the internship program, is maximised, but there is still a need to increase such as the budget, and assignment of teachers to monitor students in the industry. Seen in the provision of competence, the expertise of the Mechanical Engineering Department has provided all the technical and practical requirements in accordance with the standards required when conducting industrial training. Vocational education has provided proper preparation, implementation, and assessment, but there is still a need for improvements such as preparation for collaboration with industry partners, monitoring of the supervising teacher. In the aspect of the evaluation, both from the industry and vocational education have been objective in the assessment, namely in terms of reporting and oral testing.



#### **d. Student Individual Factors**

Individual factors of students have a significant influence on the implementation of internship programs. Hard skills and soft skills are needed in the application of industrial internships. The significance of assignment by industry supervisors is assessed as a factor in determining students' mastery of competency, and from the suitability of the desired experience, it felt to be following proposals and realities in the field such as the purpose of knowing the production process.



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