

# Implementation of Industrial Work Practice Model to Improve Student Competence at State Vocational School 1 Tombariri

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## ABSTRACT

This study aims to evaluate the implementation of industrial work practice (prakerin) in terms of: 1) context, which includes the objectives of the prakerin program, cooperation between DU/DI and schools based on the MoU, and the expectation that the implementation of prakerin is in accordance with the implementative curriculum; 2) input, which includes the readiness of participants, schools, and DU/DI in implementing prakerin, the absorption of provision materials from schools and DU/DI, and the realization of the implementation of the implementative curriculum; 3) process, which includes student monitoring and guidance, student involvement/participation, student cooperation and problem-solving skills; 4) product, which includes the improvement and mastery of competencies and certification of students after the implementation of prakerin. This study is an evaluation study with a quantitative descriptive approach. The evaluation model used is the CIPP (Context, Input, Process, Product) model evaluation developed by Stufflebeam. Respondents in this study consisted of a vice principal for public relations/head of the industrial work experience working group, 18 supervising teachers, 18 industrial supervisors from Minahasa Regency, Tomohon City, Manado City and 110 students participating in the industrial work experience in 2025. Data were collected through questionnaires, observations, interviews and documentation and analyzed descriptively. The results of the study showed that: (1) the context of implementing industrial work experience at SMK Negeri 1 Tombariri was appropriate, with an achievement percentage of 72.67% for student respondents, 48.06% for supervising teachers, and 46.17% for industrial work experience supervisors, however, in

planning, compiling, and synchronizing competencies, it is necessary to involve industrial work experience elements, and the development of industrial work experience cooperation through an MoU has not been realized properly; (2) The input for the implementation of the internship has been appropriate, with an achievement percentage of 64.71% for student respondents, 47.89% for supervising teachers, and 45.39% for DU/DI mentors, but still requires participant readiness in terms of competency where the obstacles faced by students are more related to competency mastery and insufficient work readiness, therefore maximizing the time and material for provision is very necessary; (3) The process of implementing the internship has been appropriate, with an achievement percentage of 84.3% for student respondents, 74.39% for supervising teachers, and 72.22% for DU/DI mentors, but the less than optimal role and responsibility of the mentors causes communication regarding the development of student competencies to be less monitored; (4) The product of the implementation of the internship has been appropriate with an achievement percentage of 47.17% for student respondents, 31.17% for supervising teachers, and 28.72% for DU/DI mentors, this is shown by the changes that have occurred in students in terms of attitude, responsibility and increased competency.

**Keywords:** CIPP, internship model, vocational school.

## INTRODUCTION

The diverse and increasingly dynamic needs of society have influenced human activity, both individually and collectively, in pursuing their desires. Society believes that education is the most effective way to fulfill these needs. The fundamental goal of education for the general public is to meet the needs of each individual with their personal fulfillment and prepare them for a prosperous life (Sudira, 2016: 8). The existence of educational institutions is considered crucial in human life, fostering and developing the abilities of the younger generation to realize their dreams or pioneer their desired future.

Education is a platform for developing students' potential, thereby achieving the national development goal of education, namely to educate the nation. Article 3 of Law Number 20 of 2003 explains the function of national education as follows: National education functions to develop abilities and shape the character and civilization of a dignified nation in order to educate the nation. It aims to develop the potential of students to become individuals who believe in and fear God Almighty, possess noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

In Indonesia, Vocational High Schools (SMK) are a type of secondary education based on the need for skilled workers in the future workforce. SMKs are secondary schools with educational methods that prepare students primarily for work in specific fields. Vocational High Schools (SMKs) were established to meet the need for a middle-level workforce ready for work, equipped with the skills they acquire after completing education and training. SMK graduates must possess competencies in their chosen program of expertise and be ready to compete in the workforce.

Industrial work experience (*prakerin*) is a mandatory program organized by schools, particularly vocational high schools (SMKs), and non-formal education programs, and is mandatory for students/students. Industrial work practice activities help students to apply the learning outcomes

obtained at school and serve as a means for students to gain real work experience according to conditions in the DU/DI.

## LITERATURE FRAMEWORK

In Indonesia, there are three types of educational pathways commonly implemented in society: formal, non-formal, and informal. Formal education is provided in general schools and has clear levels (Saleh, 2010). Formal education can be public or private. Furthermore, non-formal education is an educational pathway outside the formal education system that can be implemented in a structured and tiered manner. Non-formal education is provided as a substitute, supplement, or complement to formal education.

According to Prosser (1994), vocational education will be more effective if it can transform individuals according to their interests, characteristics, and intelligence levels to the highest possible level. This means that after undergoing education and training, participants' skills will improve. Prosser is known for his principles in vocational education, Industrial Internships.

Experience brings out a person's potential. Full potential will emerge gradually over time in response to various experiences (Johnson, 2007). Furthermore, another opinion holds that the type and kind of interest a person has in an object reflects personal experiences that may differ from those of others (Dimiyati Mahmud, 1982). Based on this understanding, experience can play a significant role in the change and development of a person's potential. However, the development of this potential depends on the ability to learn from past experiences. Furthermore, experience can influence individual development, both physically and spiritually, which is one of the principles for the development of student readiness (Dalyono, 2001).

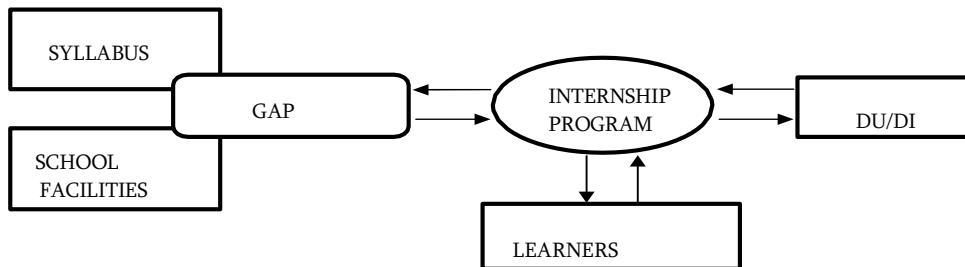
### **Objectives of Industrial Internship**

The objectives of industrial internship are for students to gain work experience on a production line, understand attitudes and work discipline, and acquire vocational and social competencies that meet the standards required by industry or the real world of work. (Bukit, M, 2014: 50). Furthermore, the Directorate of Vocational High School Development outlines that the objectives of industrial internship, or "prakerin," include: (1) fulfilling competencies as required by the curriculum; (2) implementing competencies in the workplace; and (3) developing a work ethic and work experience.

### **Implementation of Industrial Internship**

The implementation of industrial internship is expected to improve students' skills, foster high motivation and work discipline, and foster a professional attitude. The design of the industrial internship program is inseparable from the implementation of the syllabus in learning, which requires appropriate methods, strategies, and evaluation of implementation. Planning the implementation of internships is a key agenda in vocational high schools (SMK). This is because internships are the time when the performance of all school components is measured by assessing the extent to which students have mastered the skills they possess. The internship design is part of the learning process for these

competencies. The following is an outline of the workflow for designing an internship program. See figure 1.



**Figure 1.** Internship Flowchart

Source (Technical Guidance for Improving Vocational High School Quality, Ministry of National Education 2008:3)

The flowchart shows that designing an internship program requires an analysis of the skills students must master based on the competency standards/basic competencies outlined in the syllabus. The purpose of this analysis is to determine which competencies can be learned in schools, given the available facilities, and which competencies are learned in the workplace.

In schools, students learn from teachers, while in industry, they generally train with instructors. See figure 2.



**Figure 2.** Interaction between School and Industry through Students

Source: (Aaltje D. Ch. Wayong, 2010)

### CIPP Model Evaluation

The CIPP (Context, Input, Process, and Product) model evaluation concept was developed by Stufflebeam in 1966 as a result of his efforts to evaluate the Elementary and Secondary Education Act (ESEA). Evaluation is the process of describing, obtaining, reporting, and applying information and assessing information about a number of objects and their suitability to guide decision-making, accountability, and effectiveness, and to improve understanding of existing phenomena (Stufflebeam, 2002: 3). Meanwhile, Robinson (2002: 126) states that Stufflebeam's view of the essential purpose of

evaluation is not only to prove but also to improve a program. Evaluation is a process of describing, obtaining, and providing useful information to assess alternative decision-making options.

### **Framework**

Achieving effective learning objectives depends heavily on the learning process itself, where interaction between teachers and students must be fostered. Furthermore, internship activities, as part of the learning process, are used to replicate one of the learning objectives: ensuring students are employable upon graduation. One place where students can apply the skills they have acquired in school is through industrial work experience. Students' ability to absorb and understand the material learned is expected to provide them with the necessary skills to undertake industrial work experience. The three-month industrial work experience is expected to strengthen students' mental fortitude to face the competition in the workforce. For the industrial work experience to run effectively and efficiently, it is essential that the industrial sector (DU/DI) or the industry, as the school's partner institution, understand the curriculum. Synchronization between the DU/DI and the school in using the curriculum as a source of material for students will give students confidence in carrying out industrial work activities. The trust placed by the DU/DI in students to perform tasks as employees will significantly contribute to their mental readiness for work.

### **Hypothesis**

Based on the theoretical study and conceptual framework outlined previously, the author's hypothesis, based on the above understanding and the title, is "Industrial Work Experience Has a Significant Influence on Student Competence."

## **METHOD**

### **Research Type**

This study employed a program evaluation with a quantitative descriptive approach. The purpose of this study was to evaluate the implementation of the industrial work practice program at SMK Negeri 1 Tombariri. Evaluation is a procedure for examining the suitability of a program in achieving its objectives. Sukardi (2014:5) states that program evaluation is a series of activities carried out deliberately and carefully to determine the level of implementation or success of a program by assessing the effectiveness of each component, both for ongoing and past programs. This program evaluation study aims to describe the suitability of the implementation of industrial work practice in terms of context, input, process, and product at SMK Negeri 1 Tombariri, Minahasa Regency, North Sulawesi.

### **Evaluation Model**

The approach used in this evaluation is the evaluation model proposed by Stufflebeam, which encompasses Context, Input, Process, Product (CIPP). Sukmadinata (2009:121) states that "evaluative research is necessary to design, refine, and test the implementation of a practice." In this case, the researcher evaluated the internship program at SMK Negeri 1 Tombariri, Minahasa Regency, based on its context, input, process, and product.

### Evaluation Location and Time

This research took place within SMK Negeri 1 Tombariri, Minahasa Regency, North Sulawesi, and several partner industries where students conducted internships, including: Minahasa Regency and Manado City. The following is a list of industrial and industrial sectors and their respective regions in Table 1.

**Table 1.** List of Partner Institutions

No	Area of Industrial	DU/DI Name
1	Minahasa Regency	Tasik Ria Hotel
		Mercure Hotel
		Mandolang District Office
		Tombariri District Office
		Tombariri Police Station
		Mokupa Hotel
		PT. Maesa Raya
2	Manado City	Hotel Arya Duta
		IT Manado
		Manado Primary Tax Office
		Manado Finance Office
		North Sulawesi Regional Police
		Mako Tour & Travel
		WizPrime Hotel
		Hotel Four Points Manado

The fieldwork did not go as smoothly as expected. The researchers encountered several obstacles, including the refusal of several partner institutions (DU/DI) to participate in the research sample. For various reasons, three partner institutions of SMK Negeri 1 Tombariri (DU/DI) could not be included in the sample. Therefore, of the 15 planned DU/DI, only 8 could be included in the sample. This evaluation study was conducted from July to December 2025.

### Subjects and Evaluation Respondents

Research subjects, or respondents, are the parties used as samples in a study. The research subjects also discuss the characteristics of the subjects used in the study, including an explanation of the population, sample, and sampling technique (random/non-random).

The subjects in this research evaluation were the Vice Principal for Public Relations, who served as the Head of the Internship Working Group, the school supervisor, the Industrial Supervisor, and all students in the vocational study program who had completed their internship in 2025. See table 2 & 3.

**Table 2.** List of Expertise Competencies Used as Subjects

No	Name	Number of Students
1	Tourism Services	17
2	Hospitality	18
3	Accounting	21
4	Computer and Network Engineering	31
	Total	87

**Table 3.** List of supervisors who were used as subjects

No	Name	Amount
1	Vice Principal of Hubdin/Head of Working Group	1
2	School Supervisor	9
3	Industrial Supervisor	10
	Total	20

Meanwhile, for all students undergoing internships, sampling was conducted using a probability sampling technique, where the sample is proportional to the population (proportionate stratified random sampling).

For the four competency areas at SMK Negeri 1 Tombariri, Minahasa Regency, all subjects had an equal opportunity to be respondents. The number of respondents was calculated using the formula by Issac and Michael, with margins of error of 1%, 5%, and 10%. The formula is formulated as follows:

$$s = \frac{\lambda^2 \cdot N \cdot P \cdot Q}{d^2(N - 1) + \lambda^2 \cdot P \cdot Q}$$

Description:

s = Number of Samples

$\lambda^2$  = Chi-square, whose value depends on the degrees of freedom and the error rate. For 1 degree of freedom and a 5% error rate, the Chi-square value is 3.841. The Chi-square value for an error rate of 1% is 6.634 and 10% is 2.706.

N = Population Size

P = Probability of being correct (0.5)

Q = Probability of being incorrect (0.5)

d = Difference between the sample mean and the population mean.

The difference can be 0.01, 0.05, and 0.10.

(Source: Sugiyono. 2014: 158)

With a total of 87 students, the number of respondents based on the Isaac and Michael table with a 5% error rate is 5 students.

The number of respondents for each major is calculated proportionally using the formula:

$$s = \frac{n}{N} \times S$$

Description:

S = number of respondents for each department in proportion

S = number/total of respondents obtained

N = total number of subjects

N = number of each subject

## RESULTS AND DISCUSSION

### Description of Research Results

This research uses the CIPP (Context, Input, Process, Product) approach. This study aimed to determine and evaluate the implementation of industrial work experience at SMK Negeri 1 Bokat, Buol Regency, Central Sulawesi, in 2017. The problem description is as follows: 1) The context component includes the objectives of the industrial work experience program, collaboration between the industrial and business sectors (DU/DI) and the school based on the MoU, and the expectation that the industrial work experience will align with the implemented curriculum. 2) The input component includes participant readiness for the industrial work experience, the absorption of the training materials provided by the school and DU/DI, and the implementation of the implemented curriculum. 3) The process component includes monitoring and mentoring students during the industrial work experience, student involvement/participation in the industrial work process, student collaboration and problem-solving skills. 4) The product component includes student competency improvement and mastery, and student certification.

Based on the research results and the data obtained, the data was analyzed to address the existing problems. The data obtained is then described as follows:

### ***Context Data Description***

A context questionnaire was distributed to respondents who served as data sources. It consisted of three variables with 23 items and four answer choices. It was distributed to 110 students. Three variables with 14 items and four answer choices were distributed to 18 school counselors and 18 business/industrial industry counselors. This resulted in a total of 146 respondents for the context component. The context variables relate to: 1) the objectives of the internship program, 2) collaboration between business/industrial industry and schools based on the MoU, and 3) the expectation that the internship implementation aligns with the implementation curriculum.

#### ***a. Student Respondents***

Based on the analysis of the questionnaire data administered to the student respondents, the following data were obtained for each variable:

##### 1) Internship Program Objectives Variable (8 items)

Based on the analysis of the student questionnaire data, where the highest score was 32 and the lowest score was 21, the score range can be calculated as 11. The most frequently occurring score (mode) was 31, occurring 17 times, or 15.5%. The calculation also revealed that the data had a mean of 27.82, a median of 28, and a standard deviation of 2.874.

### ***Description of Input Data***

The input questionnaire was distributed to the respondents who served as the data source. It consisted of three variables with 20 items and four answer choices, distributed to 110 students. Three variables with 14 items and four answer choices were distributed to 18 school counselors and 18 business/industrial counselors. Thus, a total of 146 respondents were recruited for the input evaluation. Input variables related to: 1) the readiness of participants, schools, and industrial/industrial industries (DU/DI) to carry out internships, 2) the absorption of training materials from schools and DU/DI, and 3) the implementation of the implementation curriculum.

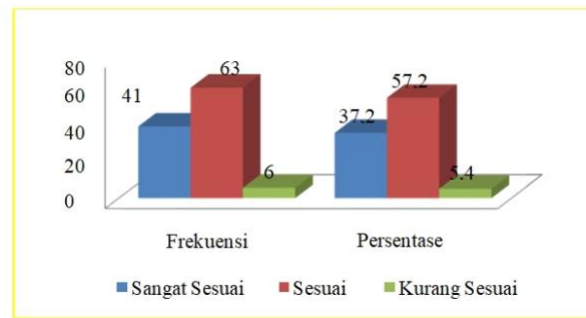
### ***Process Data Description***

A questionnaire for the process aspect was distributed to the respondents who served as data sources. It consisted of three variables with 26 items and four answer choices, distributed to 110 students. Three indicators with 23 items and four answer choices were distributed to 18 supervising teachers and 18 industrial/industrial supervisors. Thus, a total of 146 respondents were recruited for the context evaluation.

Based on the results in Table 4 and the bar chart in Figure 3, it is known that for the variable of student involvement/participation in the industrial work process, 41 students (37.27%) stated that they strongly agreed with the indicator, and 63 students (57.27%) stated that they agreed. Therefore, it can be concluded that the results of the process evaluation for the variable of student involvement/participation in the industrial work process for student respondents fall into the appropriate category, with a percentage of 57.27%. Table 4. Frequency Distribution and Percentage of Process Components of the Student Involvement/Participation Variable in the Industrial Work Process for Student Respondents

**Table 4.** Frequency Distribution and Percentage of Process Components

No	Interval	Category	Amount	Percentage (%)
1	> 42,25 - 52	Very Appropriate	41	37,27
2	> 32,5 - 42,25	Appropriate	63	57,27
3	> 22,75 - 32,5	Less Appropriate	6	5,45
4	13 - 22,75	Not Appropriate	0	0,00
Total			110	100,00



**Figure 3.** Bar Chart of Process Components for the Student Involvement/Participation Variable in the Industrial Work Process for Student Respondents

The general trend in the evaluation for the student involvement/participation variable in the industrial work process can be calculated by calculating the average value obtained from the evaluation results. The calculation results show an average value of 40.73. Consulting this value in Table 29 yields a suitable category. Therefore, it can be generally concluded that the process evaluation results for the student involvement/participation variable in the industrial work process for student respondents fall into the suitable category.

### ***Product Data Description***

The product questionnaire was distributed to the respondents who served as data sources. It consisted of two indicators with 14 items and four answer choices, distributed to 110 students. Two indicators with 9 items and four answer choices were distributed to 18 supervising teachers and 18 industrial/industrial supervisors. This resulted in a total of 146 respondents for the context evaluation.

The product evaluation in this study included several variables related to: 1) student competency improvement and mastery, and 2) student certification after internship. Student Respondents: Based on the analysis of the student questionnaire data, the following data were obtained for each indicator:

#### 1) Student Competency Improvement and Mastery Variable (9 items)

Based on the analysis of the student questionnaire data, where the highest score was 36 and the lowest score was 13, the score range was calculated as 23. The most frequently occurring score (mode) was 30, occurring 12 times, or 10.9%. The calculation also revealed that the data had a mean of 29.20, a median of 30.00, and a standard deviation of 4.437.

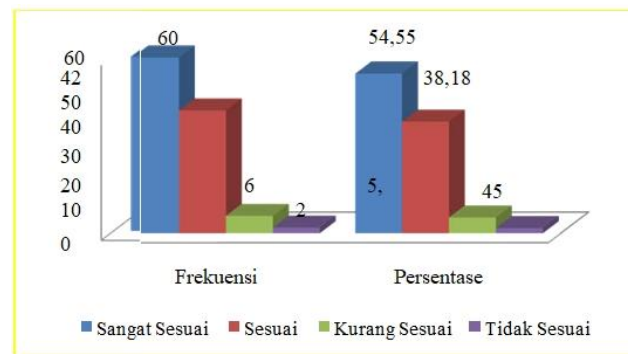
Next, the scores for each evaluation are divided into four categories, with the minimum score for each statement being 1 and the maximum score for each statement being 4, with a total of 9 statements. The predetermined score range for the evaluation aspect of student competency improvement and

mastery is 9 to 36. The calculation yields an ideal mean score (Mi) of 22.5 and an ideal standard deviation (SDi) of 4.5. A detailed description can be seen in Table 5.

**Table 5.** Frequency Distribution and Percentage of Product Components of the Student Competency Improvement and Mastery Variable for Student Respondents

No	Interval	Category	Amount	Percentage (%)
1	> 29,25 - 36	Very Appropriate	60	54,55
2	> 22,5 - 29,25	Appropriate	42	38,18
3	> 15,75 - 22,5	Less Appropriate	6	5,45
4	9 - 15,75	Not Appropriate	2	1,82
Total			110	100,00

Based on the results in Table 5 and Figure 4, it is known that for the variable of improvement and mastery of competencies for students, 60 students (54.55%) chose the "very appropriate" category, followed by 42 students (38.18%), 6 students (5.45%), and 2 students (1.82%) chose the "less appropriate" category. Based on the above data, it can be concluded that the product evaluation results for the variable of improvement and mastery of competencies for students fall into the "very appropriate" category, with a percentage of 54.55%.



**Figure 4.** Bar Chart of Product Components of Student Competency Improvement and Mastery Variables for Student Respondents

*a. School Guidance Respondents*

This product evaluation consisted of two variables with four answer choices. Based on the analysis of questionnaire data from 18 guidance teachers, the following percentages were obtained for each variable:

1) Student Competency Improvement and Mastery Variable (5 items)

Based on the analysis of questionnaire data for school guidance teachers, where the highest score was 20 and the lowest score was 14, the score range was calculated as 6. The most frequently occurring

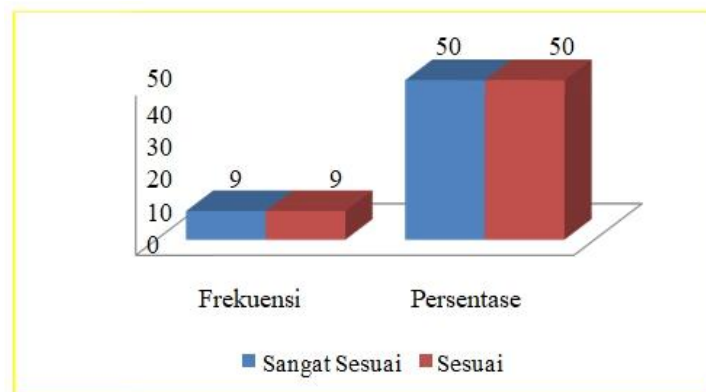
score (mode) was 14, occurring four times, or 22.2%. The calculation also revealed that the data had a mean of 16.78, a median of 16.50, and a standard deviation of 2.340.

Next, the scores for each evaluation are divided into four categories, with the minimum score for each statement being 1 and the maximum score for each statement being 4, with a total of 5 statements. The predetermined score range for the evaluation aspect of student competency improvement and mastery for school counselors is 5 to 20. The calculation yields an ideal mean score (Mi) of 12.5 and an ideal standard deviation (SDi) of 2.5. A detailed description can be seen in Table 6.

**Table 6.** Frequency Distribution and Percentage of Product Components of the Student Competency Improvement and Mastery Variable for School Counselor Respondents

No	Interval	Category	Amount	Percentage (%)
1	> 16,25 - 20	Very Appropriate	9	50,00
2	> 12,5 - 16,25	Appropriate	9	50,00
3	> 8,75 - 12,5	Less Appropriate	0	0,00
4	5 - 8,75	Not Appropriate	0	0,00
Total			18	100,00

Based on the results in the Table 6 and figure 5, it is known that in the variable of increasing and mastering student competencies for school counselors, the percentage of those who chose the very appropriate category was 9 school counselors or 50.00%, then those who chose the appropriate category were 9 school counselors or 50.00%. Based on the data above, it can be concluded that the results of the product evaluation on the variable of increasing and mastering student competencies for school counselors are in the balanced category, namely very appropriate and appropriate with a percentage of 50.00% each.



**Figure 5.** Product Components of Student Competency Improvement and Mastery Variables for School Guidance Respondents

Internships involve many parties, including the school and the industrial/industrial industry. These include students, industrial/industrial employees, supervisors, leaders, and even those outside the industrial/industrial industry, including those living near the participants' homes. Problems may arise, impacting both the knowledge and experience gained during the internship and the perceived

discomfort and incompatibility of the participants' performance. These issues must be resolved effectively to foster a sense of togetherness, ensuring a comfortable and successful internship.

Based on the questionnaire provided by respondents, the overall variable of Student Competency Improvement and Mastery, as described in the data analysis, tends to fall into the "very appropriate" and "appropriate" categories. Based on the research results, the highest percentage of respondents (54.55%) in the "very appropriate" category was 60 students. The highest percentage of respondents (50.00%) in the "very appropriate" and "appropriate" categories were 9 teachers, respectively, and the highest percentage of respondents (72.22%) in the "appropriate" category was 13.

Based on the questionnaire provided by the respondents, the data analysis results, as described in the data analysis, indicate that there are visible changes demonstrated by students after completing the internship, including increased discipline, responsibility, and competency mastery.

## CONCLUSION

Based on the context aspect, the implementation of industrial work practice at SMK Negeri 1 Tombariri which is reviewed from several variables, namely: 1. In terms of the objectives of the work practice program, which pays attention to the results of the data analysis obtained is in the very appropriate category. This indicates that there is a less than optimal achievement of the objectives of the work practice program implemented by SMK Negeri 1 Tombariri, which provides increased competency to students so that they become qualified workers and have professional skills, and as an increase in the link and match between schools and industry through the equivalence of education and training in schools with the competency demands needed by the world of work. 2. In terms of cooperation between DU/DI and schools based on the MoU, which pays attention to the results of the data analysis obtained is in the very appropriate category. This means that there is a suitability of the implementation of work practice at SMK Negeri 1 Tombariri with the variable of cooperation between DU/DI and schools based on the MoU. This is proven by the school where the legality of the development of cooperation in the implementation of work practice between SMK Negeri 1 Tombariri and the partner work institution (DU/DI) is realized in the form of an agreement or memorandum of understanding. The partnership relationship carried out by SMK Negeri 1 Tombariri in various aspects with the business/industrial world which is a partner of the school through internship activities is an effort to improve the quality of education at SMK Negeri 1 Tombariri.

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