Analysis Of The Safety Dojo Program To Increase Job Competitiveness Of Titl Graduates In Vocational Education

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Abstract.
Research this aim to : (1) know influence variable attitude to power competitive work students in the laboratory competence TITL expertise in SMK (2) know influence habit behavior to power competitive work students in the laboratory competence TITL expertise in SMK (3) knowing influence use safety dojo to power competitive work students in the laboratory competence TITL expertise in SMK and (4) knowing influence attitude , habit behavior and use safety dojo to power competitive work students in the laboratory competence TITL expertise in SMK. Study this use approach study ex post facto with method study mixed (mixed methods) with Triangulation design, using analysis descriptive and analysis regression. Instrument study use observation, documentation, interview, and questionnaire. subject study as many as 17 teachers and 32 participants educate competence TITL expertise. The object of this research is the safety dojo program and the competence of the participants educate competence the TITL expertise needed in the world of work. The results showed that: (1) Attitude variable had a significant positive effect on the work competitiveness of SMK students ($\beta = 0.709$, $p < 0.05$) (2) Behavioral Habits variable partially gave a significant positive influence on the work competitiveness of SMK students ($\beta = 0.342$, $p < 0.05$) (3) The variable of using the Safety Dojo partially gave a significant positive effect on the competitiveness of SMK students ($\beta = 0.196$, $p < 0.05$) and (4) the variables of Attitude, Behavioral Habits, and the Use of the Safety Dojo together gave significant effect on the competitiveness of vocational students ($R^2 = 0.621$, F-hit = 27.804, $p < 0.05$).

Keywords: *Application, safety dojo, work competitiveness and TITL graduates.*

I. INTRODUCTION

Technological developments are growing rapidly in line with the development of the world of education and industry. Technological developments have a positive impact and a negative impact, a positive impact in the form of an increase in users of work equipment such as machines with modern technology so that new knowledge emerges and wide employment opportunities, the negative impact of these developments increases the risk of danger contained in vocational education and industry, it causes work-related diseases and the potential for work accidents is getting higher.Cases of work accidents in every laboratory of vocational schools and industrial companies in Indonesia must be avoided immediately because every accident will cause harm to humans, machines, materials and laboratories or industry. So that the demands for safety habits or culture in the industrial world, especially for workers, are getting higher from day to day.Vocational educational need quality learning in order to produce students who are skilled and able to be absorbed in the industrial world. Vocational High Schools must prepare graduates who are capable and highly competitive in the world of industrial work in a productive and professional manner.

The results of observations on students who are conducting practicum learning in laboratories or workshops in the field of electrical expertise majoring in TITL (Electrical Installation Engineering) in SMK, the use of occupational safety and health management systems is still very lacking, some even do not use personal protective equipment, there is no growing awareness. and think critically from problems to be able to maintain health, safety and security. In addition, when educators conduct practicum, students are not careful and are not aware of the dangers that befall them.Vocational and industrial schools really need the implementation of a work safety management system, so one of the efforts to increase awareness in the aspect of work safety is the application of a safety dojo which is a simulation training place related to aspects

of awareness, safety, health and environmental security. Safety dojo aims to introduce early on the causes and consequences of the risk of neglecting the application of K3 to students who will enter the industrial world, so that hazards can be identified in the work location.Vocational education must increase attention to the importance of occupational safety and health, occupational safety and health can create safe, peaceful and healthy working conditions so as to increase the competitiveness of graduates' work and can improve the welfare of workers through the implementation of an integrated safety management system with the company's management system.

II. LITERATURE REVIEW

2.1 K3 Culture

Occupational Safety and Health (K3) culture is an integral part of the employment system and human resources, not only very important in improving social security and welfare of its workers, but far from having a positive impact on the sustainability of work productivity. Therefore, the current K3 cultural issue is not just an obligation that must be considered by workers, but also must be fulfilled by a work system because it is a need that must be fulfilled for every worker (Rudyarti, 2017: 11).Safety culture is predictive and has a certain impact on safety performance. In Taiwan's construction industry, the most effective practice is established by ensuring workers' commitment to safety. Effective safety communication channels should be established so that workers can easily provide feedback on safety-related issues. The increase in accidents allows employees to follow SOPs (Standard Operating Procedures) in the workplace better. Safety training and compliance in practice are critical to ensuring safety during potentially hazardous missions, emphasizing the need for regular safety meetings and risk assessments (Chen et al, 2018:12).The impact that affects the absence of the application of K3 culture is the risk of tools or materials, risks related to skills, knowledge, workers doing practical learning, characteristics, environment and risks arising from workshop or company managers (Ménard & Trant, 2020).

2.2 Safety Dojo

Safety is a word in English which means safety. In the world of education, safety is often called Occupational Safety and Health (K3). Occupational safety is safety related to human work activities both in industry, manufacturing and construction, which involves machinery, equipment, material handling, steam aircraft, pressure vessels, work tools for raw materials and their processing processes, workplace foundations and their environment as well as ways to doing work, as well as the service industry, which involves building cleaning equipment, transportation facilities, and others. Occupational health within the company is a specialization in health science and its practice by conducting an assessment of the factors that cause disease in the work environment and the company through measurements whose results are used as a basis for corrective action and if necessary prevention of the environment, so that workers and the community around the company are protected from occupational hazards, and it is possible to taste the highest degree of health (Wahyuni et al., 2018: 99).Occupational Health and Safety (K3) is a thought and effort to maintain integrity and perfection both physically and spiritually. Occupational Safety and Health (K3) is one aspect of labor protection regulated in Law Number 13 of 2003. A work accident is something unexpected and unexpected. Work accidents can result in loss of property, life/injury/disability, and pollution. Work accidents can occur because of a relationship or work activity. The role of management or organization of a company in a safety program is an activity that is always reviewed in an efficient process, and management must also see safety not as an additional process but as part of the process itself. Management must ensure that there are no unsafe conditions and unsafe actions (Xyz, 2021: 233).

Safety means safety, and dojo means place in Japanese, so safety dojo means workplace safety training. The Safety Dojo is a K3 training place that contains operational standards, safety standards, examples and the application of industrial accident simulations, examples of the application of causes due to unsafe work methods, and the correct method of applying OHS attribute equipment (Ismara and Kamil, 2021:6). Safety dojo can also be interpreted as a safety lab or safety center, a place devoted to providing occupational safety and health (K3) training for workers who will later work in the real industrial world. This type of training is very necessary to equip workers with the basics of K3 so as to create job security. The

Safety Dojo is also linked to K3 locations, with safety and security standards, examples of the application of work accidents, explanations of causes due to unsafe work steps, and attributes of good and correct use of K3 equipment. So, the Safety dojo is a place for safety training in the form of K3 which will provide a basic simulation related to production safety.Safety center or dojo safety is an area of learning facilities in an informative, educative and interactive room so that everyone who enters the area adds insight into the correct use of safety, knows about programs or ways to reduce accidents or occupational diseases and negative impacts on the environment.Safety dojo is a training activity on worker safety that will be given to students in the laboratory or workshop of the Electrical Power Installation Engineering expertise program, namely prospective workers or workers.

The head of SMK Yosonegoro Magetan (Amien, 2019) at the inauguration of the Industrial Safety Fundamental Skills said that the Safety Dojo is a place for training on aspects of safety, awareness, health and the environment. Meanwhile, the Head of the Dojo Safety Lab at SMK Yosonegoro (Suji, S.Pd) said that the Safety Dojo training activity was an activity related to occupational safety and health (K3).Putra et al., n.d.(2019) said that the Safety Dojo is a place for training and learning related to Occupational Safety and Health (K3). This training is carried out in a special place or lab which was created as an occupational safety and health training. Safety Dojo training is given to employees and vocational students to improve their understanding of K3 before doing work in the actual industry. One of the types of hazards in K3 is the type of physical hazard which is a hazard from physical quantities, for example, one of which is electricity. Safety dojo room regarding regulations in maintaining safety such as the existence of standards regarding safety, simulation of accidents, simulations of impacts and hazards on unsafe work behavior, information on knowledge about occupational health and safety. Safety dojo is also a space designed to make workers aware of the dangers and the importance of applying the habit of using safety equipment when working or in the workspace.According to Ismara and Kamil (2021: 7) said that the purpose of safety dojo training is to try to provide understanding and training to workers and companies to equip their workers before entering the industry. Meanwhile, for SMK students themselves, the safety dojo is a simulation place for OHS training that must be understood from the start to increase awareness of occupational safety and health (K3).

The Safety Dojo also has a goal to be used as a place for K3 knowledge which will later provide in-depth training related to work safety, especially the industrial world that will be experienced by workers and vocational students. Work safety and comfort also need to be built, because later the work process does require high efficiency, so work safety and comfort must be guaranteed. Safety must become a culture because by becoming a culture or habit that is embedded in prospective workers, it allows prospective workers, especially vocational students, to have high work safety values. This is of course to make it easier for them to apply and protect themselves from potential work accidents.

The safety dojo which is a training place in vocational schools has 11 safety simulators, which are as follows:

1) Glasses simulator
2) Pneumatic force simulator
3) Safety shoes simulator
4) Handrail holding simulator
5) Simulator stop, point and confirm
6) Security simulator running
7) Heavy object lifting simulator
8) Sharp object slash simulator
9) Electric shock simulator
10) Belt and chain simulator
11) Showcase APD

Fig 1. Infographic APD
Source: https://www.hdesignideas.com

Safety Dojo training usually takes place in a place that has determined operational standards and is really set up for OHS training. There are not many safety dojo training places in industrial areas, in fact a K3 training place known as the safety dojo already exists in vocational schools, one of which is at Yosonegoro Magetan Vocational School. The safety dojo training, especially in vocational schools, was established to train vocational students to understand the importance of K3. Every major industry should have a Safe dojo safety training ground. Of course, to prepare employees to understand K3 as a whole, thereby reducing the occurrence of work accidents. The following is an example of an OHS/Safety Dojo training venue:

Fig 2. Example of the application of Safety Dojo
(Source: Safety Dojo Examples - Bing images)

2.3 Work Competence

Manpower is an important resource for a company because it has the talent and creativity that the company needs to achieve its goals. Therefore, companies must be able to provide fair and appropriate rewards for work results that can encourage work productivity in order to achieve company goals. This is necessary to improve the competitiveness of the company's work efficiency so that it continues to grow to meet the needs of the community, by improving the system, regulations, working methods, objectives,

marketing and business plans that must be very mature (Bahtiar & Trang, 2018: 639).Vocational educational is designed to prepare students or graduates to enter the world of work and be able to improve professional attitudes in certain fields of work, the main priority for SMK graduates is the world of work. The current increase is marked by several achievements in the advancement of science and technology, everyone will be involved in the era of global competition, the presence of the era of global competition requires vocational schools to develop and follow the development of the world of work. Therefore, it is important for Vocational High Schools so that their competencies remain relevant to the demands of the business world and industry in the era of global competition (Tamrin et al., 2018).

One of the efforts made by the Directorate of Vocational Development as a work unit of the Ministry of National Education which is responsible for the existence of Vocational High Schools is shown by the issuance of vocational skills training programs. To educate students with marketable job skills to develop our current economy, it is necessary to find ways to educate students with the knowledge, skills and character needed to revolutionize our economy to save the planet while revolutionizing our political system (Wheatley, 2018: 60). Thus, the trends driving global cooperation not only help us achieve our planet's critical environmental goals, but also help us maintain strong social fabrics and build healthy communities and democracies (Wheatley, 2018: 61).Vocational educational carry out learning in accordance with the needs of human resources in the industrial world and the business world because Permendiknas Number 23 of 2006 says that graduates of vocational high schools must have the skills and entrepreneurship to fulfill the world of work in accordance with the times or further higher education according to their respective professions. So that in order to achieve this, interaction between educators and students is needed in learning that produces hard skills and soft skills or competitive work in supporting the needs of the world of work. Learning outcomes can later be obtained through cognitive, psychomotor and affective aspects so that a competency test is obtained in accordance with what is needed by the industrial world, study programs and the business world. Vocational graduates who are suitable to be obtained are in accordance with Figure 2, namely graduates of Electrical Power Installation Engineering.

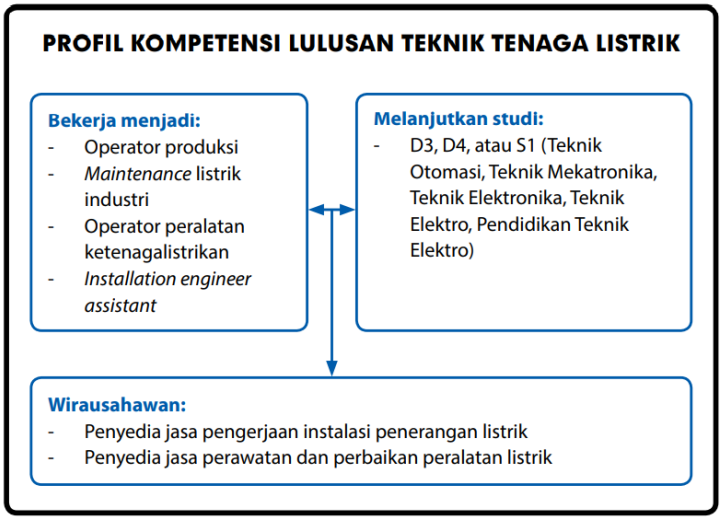

Fig 3. Competency profile of Electrical Power Engineering graduates
(Source: Ismara, 2021)

2.4 Link and match

Link and match as a model of vocational education policy is an assessment of the value system and factors of the situational needs of educational institutions, to be used as a guide in taking a policy in a joint decision frame so that the desired educational goals can be realized. Decisions in the form of policies (policy marking). The model of vocational education policy in the form of link and match is the concept of linkage between educational institutions and the world of work. With the linkage between educational institutions and the world of work, collaboration will be established so that students can do internships or do work practices at the company. If this model can be implemented in a sustainable manner, Vocational Education can easily find out what skill competencies are most needed by the Company. The strategies that are the

focus in realizing the link and match policy are the social approach and the Human Resources approach, in this case the employment approach. The social approach is based on the current needs of society. This approach focuses on the purpose of education and on equal distribution of educational opportunities. An example of the application of this approach is the application of the Model Vocational School through a link and match policy (Husein, 2019)

Link and match is a policy of the Ministry of Education of the Republic of Indonesia which was introduced by Prof. Dr. Ing, Wardiman Djoyonegoro in 1989-1998 served as Minister of Education and Culture at that time. The concept refers to the link and match competencies of graduates from the world of education so that they can be accepted and in accordance with the needs of the world of work. The link and competition program with the business world and industry for graduates of all study programs at SMK Muhammadiyah Delanggu is achieved through the teaching and learning process in schools and collaboration with industry. The learning process at SMK Muhammadiyah Delanggu is planned to refer to 70% practice and 30% theory, but it is still not optimal. It is known that there is no balance between theory and practice, the lack of a teacher's role in the teaching and learning process in the classroom, and the deepening of material felt by students who are still not optimal. However, the school still tries as much as possible because in reality the demands of practice tend to be more than theory. In accordance with one of the principles of link and match presented by Tilaar in Listiana's research (2012), adequate facilities and infrastructure are needed to support the implementation of research in industry and other practices. Thus, efforts to increase the relevance of educational programs to the needs of the community can be realized making it easier to implement the link and match policy. teaching in schools, students become trained and accustomed to a lot of knowledge about productive science in accordance with their expertise competencies which are very useful for entering the world of work. In addition to looking for learning at school, SMK Muhammadiyah Delanggu is looking for learning that involves industry. This is also related to one of the principles of link and match, namely the improvement of education programs (Salsabila & Aziizah, 2020).

Fig 4. Infographic link and match

In realizing a quality vocational school, it is necessary to implement a link and match between schools and industry gradually and continuously in the form of research/research collaborations and apprenticeships. There are several interrelated parties to realize this link and match program, including vocational education, industry, and the government. The educational curriculum must prepare itself by taking into account the progress of science and technology that is developing in the community, meaning that educational institutions are required to be closer to the industrial world to develop a curriculum that is tailored to the needs of the community. Effectiveness of cooperation can be done in terms of Industrial Work Practices, UKK, OJT Teachers, Practical Equipment Assistance and Scholarships from Industry, Production Units, as well as Distribution and Placement of Graduates. The implementation of the partnership between

SMK and DUDI is carried out through an MoU. The limitations of the collaboration include curriculum synchronization, industrial visits, teacher visits, Prakerin, UKK, teacher OJT, certification, practicum equipment assistance, school funds, scholarships from industry, and recruitment/job placement of graduates (Supriyadi et al., 2022)

The implementation of the link and match program starts from the preparation/planning stage, the implementation of the teaching and learning process in schools and collaboration with industry, and the evaluation stage. The supporting factor for link and match is the collaboration between schools and DU/DI. In addition, there was a positive response from students, parents, DU/DI, and the government. Supporting programs implemented in schools are in the form of 5 programs, including: 1) Curriculum Synchronization; 2) Internship; 3) Industrial Visits; 4) Production Units; and 5) Expertise Competency Test. There are two factors inhibiting link and match, namely internal factors and external factors. The solutions used to overcome the problems that occur are (a) the school always provides equipment and maximizes practice units; (b) schools try to maximize the existing curriculum with work processes in the industry so as not to deviate from the core competencies or basic competencies (KI/KD) set by the Education Office (Khairunnisa et al., 2020)

III. METHODS

3.1 Types of Research

This type of research uses non-experimental research through quantitative and qualitative approaches (Mix Method) with with Triangulation design, approach study *Expost facto* as well as analysis descriptive and analysis regression. Analyzing the *safety dojo program* to enhancement power competitive work graduates and studies level linkages or possibility connection cause and effect Among variable attitude, habit *safety dojo* behavior and programs with variable power competitive work student based on correlation or coefficient regression. For see the *safety dojo program* and power competitive work student done in accordance with procedure methodology research, with obtain data on the *safety dojo program* in the expertise program laboratory electricity competence Electrical Power Installation Engineering(TITL) expertise tools and materials, knowledge of teachers and students, meanwhile for obtain power competitive work student competence TITL expertise required *safety dojo* with get data about knowledge in attitudes and habits behavior in follow learning practicum in the laboratory / workshop.

3.2 Research Time and Place

The time of the research was carried out on March 7, 2022 to May 7, 2022. This research was carried out in several SMKs that have TITL expertise competencies and have A and B accreditations, namely at SMKN 2 Banda Aceh, SMKN 2 Sigli, and SMKN 1 Darul Kamal.

3.3 Research Subject

The subjects in this study were school principals, vice principals, heads of departments (technicians) of TITL expertise competencies, 13 teachers of TITL skills competency subjects in three Aceh province vocational high schools, and 52 students of TITL skills competency in three Aceh province vocational schools. Determination of research subjects using purposive sampling technique that is determining the sampling by setting specific characteristics in accordance with the objectives of the study.

3.4 Research Procedure

3.4.1 Design

Methods in data collection can be done with four methods in order to obtain accurate results, the four methods are:

- Observation

The observation method used in this study is also called the results of observations/surveys, this method is an initial observation carried out on the object of research to obtain important information needed including documents, planning systems, processes, and design analysis.

- Interview

Interviews were used to collect additional primary data to support the research. The additional data includes safety, practicum habits and the influence of safety culture on the competitiveness of graduates. The

interviews conducted with teachers of the TITL expertise program included the following components of action: (1) norms, (2) structure and (3) process.

- Documentation

Documentation is used for data collection in the form of written documents, photos or pictures. In this study, the documentation method was used in the form of collecting written data and several laboratory photos to see the readiness for the implementation of the dojo safety program.

- Questionnaire

This questionnaire or questionnaire method is a quantitative primary data collection method, the results of which are filled out in the form of questions that have been created and distributed to teachers and students of the TITL expertise program in SMK. This research questionnaire uses an instrument scale with a Likert scale and is included in the non-test category. Statements consist of 3 types, namely positive, negative and open statements. The student questionnaire consists of 24 statements and the teacher's questionnaire consists of 25 statements.

3.4.2 Analysis

The data analysis technique was obtained from the suggestions of 3 validator lecturers and the results of the questionnaire and interview instruments to obtain data in the form of a mixed method analysis, namely statistics that produced an accurate description or description of the dojo safety program.

1) Test Research Instruments

A suitable research instrument to facilitate research in obtaining valid, reliable and accurate results. Whether or not the data under study is a determinant that this research is of good quality or not based on the results to be studied. Therefore, the results of this study are data in the form of a description of the variables of a study. The research instrument verification process was carried out by 3 expert lecturers. The results of the validator verification will be used as input so that the questionnaire and interview questions are better and more suitable for data collection. The conditions that must be passed on this research instrument are as follows:

a. Instrument Validity

The validity test on the questionnaire instrument in the measurement shows the level of validity of the measuring instrument so that it can be known whether the research instrument is effective or not. Generally, if an instrument is used to measure what it is supposed to measure, it is considered effective. The validity test used in this study is content validity using SPSS software. Before the instrument is used to collect research data, the validity is first tested. The instrument in this study was validated theoretically. The instrument was validated by 3 expert lecturers who were Lecturers of the Department of Electrical Engineering Education of UNY.

b. Data Reliability

Reliable test on the questionnaire instrument and interview questions to determine whether the instrument data is reliable. Generally, if an instrument produces the same data when measuring the same object multiple times, the instrument is considered reliable. This reliability was chosen because the measuring instrument given to students and teachers was in the form of a questionnaire with four variations of answers. Counted based on formula *Cronbach Alpha* as following : (Setiawan et al., 2016)Calculated as follows:

$$r_{11} = \frac{k}{k-1}\left[1 - \frac{\sum a_b^2}{a_t^2}\right]$$

With description:

r_{11} = instrument reliability

K = the number of questions

$\sum a_b^2$ = number of item variances

a_t^2 = total variance

Table 1. Reliability Coefficient Category (Sugiyono, 2017: 231)

Coefficient Interval	Reliability Level
0,800 – 1000	Very high reliability
0,600 – 0,800	High reliability
0,400 – 0,600	Medium reliability
0,200 – 0,400	Low reliability
0,000 – 0,200	Very low reliability

The calculations used in this test use SPSS software, the use of this software in calculations can help speed up the use of formulas to get the same results.

1) Regression Analysis

Regression analysis is used for statistical data processing by testing the relationship between the independent variable and the dependent variable, the independent variable (X) is the application of safety dojo and the dependent variable (Y) is the work competitiveness of graduates. This study uses multiple regression analysis with the equation:

$$Y = a_1X_1 + a_2X_2 + a_3X_3 + B$$

Dengan:

Y = dependent variable (kriterium)

X = independent variable (predictor)

B = Constant

A = predictor coefficient number

The equation is to test the comparison and relationship between each variable, namely attitudes (X1), behavioral habits (X2) and the use of safety dojos (X3) on the competitiveness of graduates (Y). This analysis is focused on increasing the competitiveness of graduates according to the safety dojo guidelines. In this case, the main assumption is that there is a link between the safety dojo and the competitiveness of graduates through attitudes and behavior habits. The independent variable is the dojo safety criteria through the ability to behave and behavior habits. The calculations used in this analysis use SPSS software, the use of this software in calculations can help speed up the use of formulas to get the same results.

a. Normality test

This test is to determine whether the residual value is normally distributed or not. A good regression model is one that has a normally distributed residual value. The way to detect it is by looking at the spread of data on diagonal sources on the Normal P-P Plot of standardized regression chart as the basis for making decisions. If it spreads around the line and follows a diagonal line, then the regression model is normal and suitable to be used to predict the independent variables and vice versa (MARDIATMOKO, 2020).

Another way to test for normality is the One Sample Kolmogorov Smirnov test method. The test used is the chi-square test ($\chi 2$) with the following equation:

$$X^2 = \frac{(fh - fo)^2}{fh}$$

With information: fh = expected frequency and fo = observation frequency.

If the data is normally distributed, then the value of χ^2 count < χ^2 table or if the analysis uses a computer, the value is p> 0.05. To get the data results, this normality test uses SPSS software.

b. Multicolonier

Multicolonier is a condition where there is a perfect or close linear relationship between the independent variables in the regression model. A regression model is said to have multicollinearity if there is a perfect linear function on some or all of the independent variables in the linear function. Symptoms of multicollinearity include looking at the Variance Inflation Factor (VIF) and Tolerance values. If the VIF < 10 and Tolerance > 0.1, it is declared that there is no multicollinearity (MARDIATMOKO, 2020)

IV. RESULTS AND DISCUSSION

4.1 Research Results

4.1.1 Interview

From the results of the interviews with these teachers, it can be concluded that the overall policies carried out by the government through Permendiknas no. 34 concerning national standards for vocational high school education in 2018 has met the management needs of SMK needs, with adequate facilities and infrastructure in accordance with learning outcomes, but for a safety dojo program training place it still does not have a special room for it so that the application related to K3 learning is often takes place using 1 room, namely the workshop/lab where practical learning is also carried out.Efforts made by SMK managers to avoid work accidents are the availability of personal protective equipment, the presence of warning banners about K3 that are posted on the walls of the learning room and school environment as well as supervision of the use of PPE in accordance with good operational pressure standards when on duty. workshop/lab or during practical learning.The link and match that was created in the 3 SMK was with PLN, workshops and other industries around the school that were established. The collaboration with DUDI was always maintained by the presence of students who practiced directly at the DUDI place every year. What is really needed in producing graduates who can be absorbed by the world of work is the quality of education that is increased and the application of K3 is regular and appropriate, so that later it is hoped that graduates from Vocational Schools can be highly competitive in the world of work.

4.1.2 Student Questionnaire

Student questionnaires were used to measure the variables of Attitude, Behavioral Habits, Use of Safety Dojo, and Work Competitiveness. The ability of the measuring function is evaluated by means of the moment product correlation statistic. The test results on the attitude variable get a correlation coefficient between 0.459 – 0.717, the acquisition of more than 0.4 indicates all questions/statements are valid (Frey, 2018: 1327). Correlation testing on Behavioral Habits, Use of Safety Dojo, and Work Competitiveness also got a coefficient of more than 0.4, indicating that it was valid (table 2).

Table 2. Validity and Reliability Test Results of Student Questionnaires

Attitude		Habits of Behavior		Use of Safety Dojo		Work Competitiveness	
No Item	r	No Item	r	No Item	r	No Item	r
P1	0.621	P8	0.589	P19	0.752	P12	0.409
P2	0.717	P9	0.655	P20	0.512	P13	0.540
P3	0.567	P10	0.549	P21	0.533	P14	0.496
P4	0.652	P11	0.585	P22	0.617	P15	0.561
P5	0.459			P24	0.536	P16	0.715
P6	0.460					P18	0.664
P7	0.473						
Cronbach's alpha 0.816		Cronbach's alpha 0.786		Cronbach's alpha 0.803		Cronbach's alpha 0.805	

Source: Data processing

The reliability of the student questionnaire was evaluated by Cronbach's alpha, the test results obtained a Cronbach coefficient of 0.816 on the attitude variable, 0.787 on the behavioral habit variable, 0.803 on the Safety Dojo variable, and 0.805 on the competitiveness variable (table 2). Obtaining a Cronbach alpha coefficient of more than 0.7 indicates reliable (Cohen L, 2018: 146).For the entire research data, student questionnaires at SMKN 2 Sigli, SMKN 1 Darul Kamal and SMKN 2 Banda Aceh are listed in table 14 which consists of 42 respondents. The number of answers who answered strongly agree/always was 452, the number of answers agreed/often was 280, the number of answers did not agree/sometimes was 147 and the number of answers disagreed/never was 87.

4.1.3 Teacher Questionnaire

The test results for each teacher questionnaire question/statement get a correlation coefficient of more than 0.4 on all teacher questionnaire questions, indicating that it is valid (table 3) (Frey, 2018: 1327).

Table 3. Results of the Validity and Reliability of Teacher Questionnaires

Attitude		Habits of Behavior		Use of Safety Dojo		Work Competitiveness	
No Item	r	No Item	r	No Item	R	No Item	r
P1	0.621	P12	0.631	P16	0.743	P6	0.608
P2	0.717	P13	0.683	P17	0.791	P7	0.872
P3	0.567	P14	0.889	P18	0.784	P8	0.816
P4	0.652	P15	0.681	P19	0.799	P9	0.872
P5	0.459			P20	0.911	P10	0.595
P6	0.460			P21	0.851		
P7	0.473			P22	0.851		
				P23	0.753		
				P24	0.851		
				P25	0.911		
Cronbach's alpha 0.898		Cronbach's alpha 0.826		Cronbach's alpha 0.945		Cronbach's alpha 0.894	

Source: Data processing

Cronbach's alpha test to evaluate reliability gets a coefficient of 0.898 on the attitude variable, 0.826 on the behavioral habit variable, 0.945 on the Safety Dojo variable, and 0.894 on the competitiveness variable (table 3). A gain of more than 0.7 indicates reliable (Cohen, 2018: 146).For the entire research data, the teacher questionnaires at SMKN 2 Sigli, SMKN 1 Darul Kamal and SMKN 2 Banda Aceh are listed in table 19 which consists of 13 respondents. The number of answers who answered strongly agree/always was 109, the number of answers agreed/often was 141, the number of answers did not agree/sometimes was 47 and the number of answers disagreed/never was 15.

4.2 Description of Research Data

The research data were qualified in four categories according to the answer scale in the questionnaire. The width of the categorization interval is calculated based on a normal distribution: interval = (5-1)/4 = 0.75 (Paul et al., 2013:21). Four categorizations are used: 1) Low for the average answer score of 1 – 1.75, 2) Low enough for the average answer score > 1.75 – 2.5, 3) High enough for the average answer score > 2.5 – 3.25, and 4) High for the average answer score >3.25 – 4.

Table 4. Categorization Table

Category	Interval
Low	1.00 – 1.75
Low Enough	>1.75 – 2.50
High Enough	>2.50 – 3.25
Tall	>3.25 – 4.00

(Paul et al., 2013:21)

4.2.1 Attitude

The results of the descriptive statistical test got the lowest score = 1.57, the highest = 4, average = 3.29, and standard deviation = 0.64, categorized as high. In the perception of the student's questionnaire, it shows the power of student acceptance of the potential hazard training program, while the perception of the teacher's questionnaire shows the power of students' knowledge of solutions to work problems.

Table 5. Central Tendency of Attitude

Parameter	Score	Description
Average	3.29	Categorized : High
Standard Deviation	0.64	
Lowest	1.57	
Highest	4.00	

Source: Primary data test results

Individual respondents have attitude scores that are categorized as low to high. The number of respondents categorized as low is 3.6%, categorized as low enough as much as 10.9%, categorized as high enough as much as 16.4%, and categorized as high as 69.1%. The distribution shows that most of the attitude scores are categorized as high and quite high, both of which cumulatively reach 85.45%, this shows the

readiness of most of the respondents to receive potential hazard training programs, and knowledge about solutions.

Table 6. Attitude Response Categories

No	**Category**	Frekuensi	Persentase
1	Low	2	3.6
2	Low Enough	6	10.9
3	High Enough	9	16.4
4	Tall	38	69.1
Total		55	100.0

Sumber : Pengolahan data primer

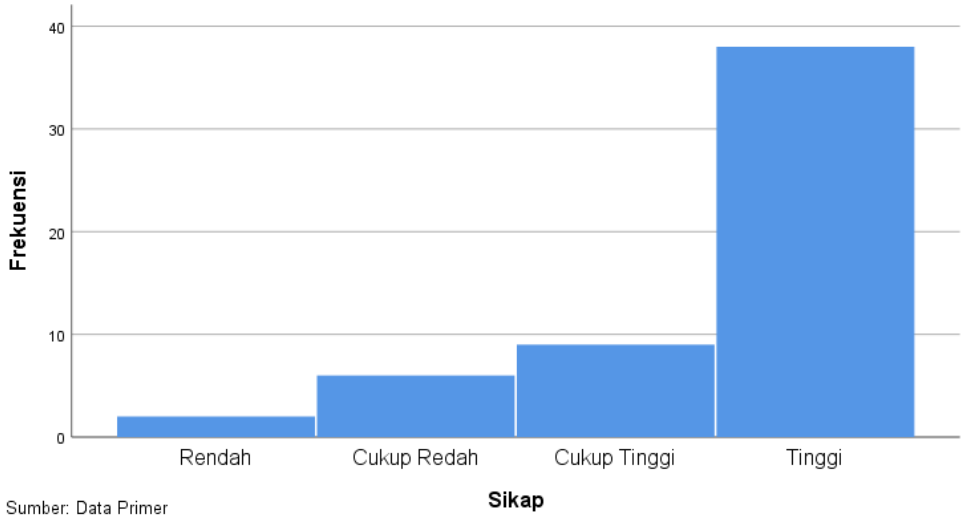

Fig 5. Attitude histogram

4.2.2 Habits of Behavioral

The results of the descriptive statistical test got the lowest score = 1, the highest = 4, the average = 2.87, and the standard deviation = 0.8, categorized as quite high. In the perception of the student's questionnaire, it shows the power of student acceptance of the work environment training program, and from the perception of the teacher's questionnaire, it shows the power of knowledge on behavior.

Table 7. Central Tendency Habit Behavior

Parameter	**Score**	**Description**
Average	2.87	Categorized: High enough
Standard Deviation	0.80	
Lowest	1.00	
Highest	4.00	

Source: Primary data test results

Individual respondents had behavioral habits scores in various categories, 12.7% in the low category, 23.6% in the low category, 34.5% in the high category, and 29.1% in the high category. The distribution shows that most of the behavioral habits scores are categorized as quite high and high where both cumulatively reach 63.64%, this shows that more than half of the respondents have acceptance of the work environment training program, and knowledge of behavior.

Table 6. Categories of Responses to Behavioral Habits

No	**Category**	**Frequency**	**Percentage**
1	Low	7	12.7
2	Low Enough	13	23.6
3	High Enough	19	34.5
4	Tall	16	29.1
Total		55	100.0

Source: Primary data processing

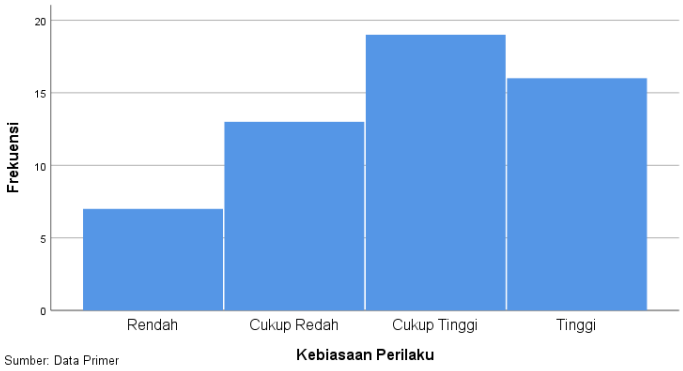

Fig 6. Histogram of Behavioral Habits

4.2.3 Use of Safety Dojo

The results of the descriptive statistical test got the lowest score = 1.4, the highest = 4, average = 3.27, and standard deviation = 0.61, categorized as high. In the perception of the questionnaire students showed readiness to implement the Safety Dojo, and in the perception of the questionnaire the teacher showed the power of knowledge on occupational safety and health, as well as applicable regulations.

Table 7. Central Tendency to Use Safety Dojo

Parameter	Score	Description
Average	3.27	Categorized: High
Standard Deviation	0.61	
Lowest	1.40	
Highest	4.00	

Source: Primary data test results

Individual respondents scored in various categories, 1.8% in the low category, 9.1% in the low category, 21.8% in the high category, and 67.3% in the high category. The distribution shows that most of the scores on the use of the Safety Dojo are categorized as high and quite high, both of which cumulatively reach 89.09%, this shows that most students have the readiness to implement the Safety Dojo, which is in accordance with applicable regulations.

Table 8. Categories of Responses to the Use of Safety Dojo

No.	Category	Frequency	Percentage
1	Low	1	1.8
2	Low Enough	5	9.1
3	High Enough	12	21.8
4	Tall	37	67.3
Total		55	100.0

Source : Primary data processing

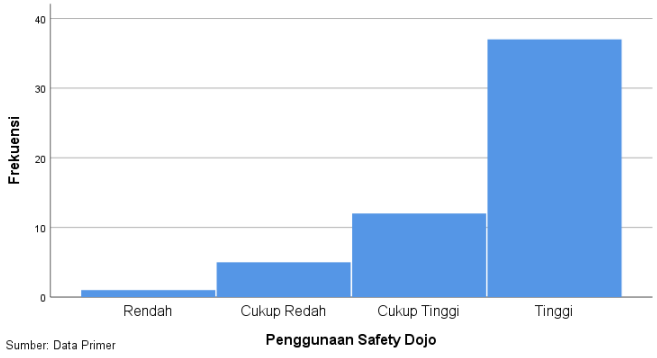

Fig 7. Histogram of the use Safety Dojo

4.2.4 Work Competitiveness

The results of the descriptive statistical test got the lowest score = 1.29, the highest = 4, average = 3.06, and standard deviation = 0.69, categorized as quite high. In the perception of the questionnaire, students showed readiness to risk in their work, and in the perception of the questionnaire the teacher showed knowledge of competitiveness.

Table 9. Central Tendency of Work Competitiveness

Parameter	Score	Description
Average	3.06	Categorized: High enough
Standard Deviation	0.69	
Lowest	1.29	
Highest	4.00	

Source : Primary data test result

Individual respondents had scores in various categories, 7.3% in the low category, 14.5% in the low category, 29.1% in the high category, and 49.1% in the high category. The distribution shows the number of respondents who are categorized as high enough and cumulatively high reaches 78.18%, indicating the readiness of students to take risks at work, and knowledge of competitiveness.

Table 10. Category of Job Competitiveness Response

No	Category	Frequency	Percentage
1	Low	4	7.3
2	Low Enough	8	14.5
3	High Enough	16	29.1
4	Tall	27	49.1
Total		55	100.0

Source : Primary data processing

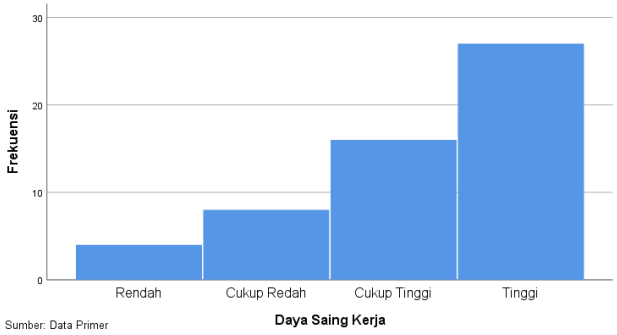

Fig 8. Histogram of Work Competitiveness

4.3 Assumption Test

4.3.1 Normality

Multiple regression testing produces residual variables which are assumed to be normally distributed. Evaluation of the distribution assumption was carried out using the chi square statistical tool, the test results obtained a coefficient of ² = 12.50 with a probability of p = 0.085. The p>0.05 indicates that the residual variable is normally distributed.Evaluation of the form of data distribution has also been evaluated visually, the results are shown in Figure 9 below. It is shown that the residues are scattered on a diagonal line, and do not show significant outliers, indicating a normal distribution (Bader, 2021: 373).

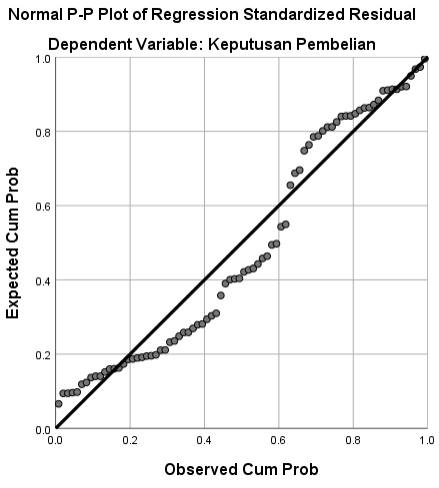

Fig 9. Distribution of Residual Variables

4.3.2 Multicollinear

The independent variables in the multiple regression function are assumed not to be strongly correlated or multicollinear. The test results get a VIF coefficient (Variant Inflation Factor) of less than 10, and a tolerance of more than 0.1, indicating that there is no violation of the multicollinearity assumption with other independent variables (Damodar N. Gujarati, 2004: 359; Ghozali, 2011) (see table 13).

Table 11. Multicollinear Test Results

Variable	Tolerance	VIF	Description
Attitude	0.644	1.552	Non Multico
Habits of Behavioral	0.728	1.373	Non Multico
Use of Safety Dojo	0.745	1.343	Non Multico

Source : Primary data test result

4.4 Regression Test

The influence of Attitude, Behavioral Habits, and Use of Safety Dojo variables on Job Competitiveness was evaluated using multiple regression statistical tools. A summary of the test results is shown in table 14 below.

Table 12. Multiple Regression Test Result

Variable	β	t-count	P
Constant	-3.183	-1.121	0.267
X1 – Attitude	0.709	6.545	< 0.0001
X2 – Habits of Behavior	0.342	2.210	0.032
X3 – Use of the Safety Dojo	0.196	2.698	0.009
Multiple Correlation (R)	0.788		
Coef. Determination (R^2)	0.621		
F-count	27.804		< 0.0001

Source : Regression test result

4.4.1 Simultaneous Effect

The contribution of all independent variables to the dependent is indicated by the coefficient of determination (R^2) which is 0.621. Explains that attitudes, behavior habits, and the use of safety dojos contribute 62.1% to work competitiveness. Its contribution is significant which is indicated by the F-count coefficient with $p < 0.05$.

4.4.2 Partial Influence

The influence of independent variables partially explains the contribution of one variable at the same time as the other variables. The size of the partial contribution can be explained by the coefficients of each variable in the resulting regression equation, namely: Y = -3.183 + 0.709x1 + 0.342x2 + 0.196x3. The significance of each variable is explained by the resulting t-count.

a. Constant

Constants explain the magnitude of work competitiveness if the variables that influence it are omitted or considered zero. The constant value of -3.183 interprets the loss of competitiveness if it does not consider the attitudes, behavior habits and use of the safety dojo.

b. Attitude Effect

The Attitude variable in the regression function has a coefficient of 0.709, interpreting for every one change in attitude it can affect work competitiveness by 0.709 units on a cateris paribus basis (other variables are considered constant). A positive value indicates the effect is unidirectional, meaning that if students' attitudes are improved, it will encourage an increase in work competitiveness, and vice versa if it is lowered it will encourage a decrease in work competitiveness. The significance of the partially significant attitude effect is indicated by t-count = 6.545 with $p < 0.05$.

c. Influence of Behavioral Habits

Behavioral habits variable in the regression function has a coefficient of 0.342, interpreting for every one change in behavioral habits it can affect work competitiveness by 0.342 units on a cateris paribus basis. A positive value indicates that if behavioral habits are increased, it will encourage an increase in work competitiveness, and vice versa, if reduced, it will encourage a decrease in work competitiveness. The

significance of the partial effect of behavioral habits is significant, this is indicated by t-count = 2.210 with p < 0.05.

d. The Effect of Using a Safety Dojo

The variable using the safety dojo in the regression function has a coefficient of 0.196, interpreting for each change in the determination of the use of the safety dojo it can affect work competitiveness by 0.196 on a cateris paribus basis. A positive value indicates the effect can encourage an increase in work competitiveness, and conversely a decrease in safety dojo can reduce work competitiveness. The significance of the partial effect of the use of the Safety Dojo was significant, it was indicated by t-count = 2.698 with p < 0.05.

4.5 Discussion

Attitude variables are proven to contribute to the work competitiveness of students at SMKN 2 Banda Aceh, SMKN 2 Sigli, and SMKN Darul Kamal. This finding is in accordance with the conception of attitudes related to the ability to respond to potential hazards, such as chemical, biological, ergonomic, electrical, psychological, and mechanical hazards.Attitude as a series of associations does not rule out the possibility that it contains behavioral habits as associated elements. Therefore, when behavioral habits are emphasized as independent variables, they also have a significant influence on work competitiveness.Habits of behavior are very close to awareness of the surrounding environment. Behavioral habits build awareness of respondents in preventing potential hazards, such as the air content around the laboratory, the design of the workplace in the laboratory, the ability to care for and maintain tools and materials around the laboratory, and prevent the dangers contained in the water around the laboratory.The use of a safety dojo in turn can be viewed as a continuation of good behavior habits. The safety dojo is prepared so that workers (students) are aware of the readiness of the place, such as occupational safety and health (K3), the environment remains in a safe condition, and periodic observations of laboratory conditions; Readiness of knowledge in morals and work attitudes that are applied to support the performance of practicum learning, and form a special K3 organizational team.

V. CONCLUSION

The results of the regression test described in the previous chapter show the effect of the explanatory variable on the dependent simultaneously and partially. Based on these findings, it is concluded;

1. Attitude variable has a significant positive effect on the work competitiveness of SMK students ($\beta = 0.709$, $p < 0.05$).
2. Variable Behavioral habits partially have a significant positive effect on the competitiveness of vocational students ($\beta = 0.342$, $p < 0.05$).
3. The variable of using Safety Dojo partially gave a significant positive effect on the competitiveness of SMK students ($\beta = 0.196$, $p < 0.05$).
4. The variables of Attitude, Behavioral Habits, and Use of Safety Dojo together have a significant influence on the work competitiveness of SMK students ($R^2 = 0.621$, F-hit = 27.804, $p < 0.05$).

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