



## Increased Competitiveness and Work readiness of Students Four Year Vocational High School (VHS)

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**Abstract.** *This study aims to determine the level of achievement of the fourth year Vocational School education program towards increasing student competitiveness and work readiness. The main objective of the fourth year vocational program is to equip students and graduates with various competencies in order to develop graduates capabilities in finding jobs, assigning work, entrepreneurship, pursuing the work faced and renewing their work skills. This research was conducted through a literature review of references originating from the theories and results of relevant research, and continued through focus group discussions. Relevant references include the policies of the Government of the Republic of Indonesia, guidance on the implementation of the fourth year vocational program, relevant research results, namely evaluations of four years vocational programs, and influencing factors in increase in competitiveness and work readiness graduates. The study found: (1) reviewed from the curriculum of fourth years vocational school graduates having more work experience in the industry in the fourth year; (2) in terms of the competency of fourth year vocational school graduates having better competence than the third year vocational program; (3) in terms of industry interest, fourth year vocational graduates have more acceptance as labor in the industry than third year graduates.*

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#### Keywords:

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## INTRODUCTION

National Education System Law No. 20 of 2003 Article 15 states that "Educational education is secondary education that prepares students primarily to work in certain fields". Vocational High Schools (VHS) as institutions that prepare workers are required to be able to produce graduates who are ready to compete in the business world and industry. The new world of work in the XXI Century has undergone a very fundamental pattern change. Ways to get work and ways to do work tasks have also changed significantly. The statement of Hollander & Mar (2009: 43) that "There is a shift from the concept of 'TVET for Employment' to 'TVET for Employability' needs to be a reference in the development of vocational education, both in general and specifically in the implementation of the 4-year vocational program. The shift in the concept of education and vocational training to obtain employment or employment towards mastering adaptive abilities in finding, caring for work and updating skills (employability) is very important because vocational education that is full of investment, needs to take into account the effectiveness and efficiency of education.

Recognizing the contribution of education to national development, the Indonesian Government supports ideas and innovations that prioritize the education sector in national development. One of the best for preparing the best graduates is the 4-year vocational program. The benefits obtained from the 4-year Vocational Program are very many, in addition to increased graduate competency, graduates will obtain competency certificates from the government and the industrial world where they conduct work practices (Sitohang, 2018).

In line with the statement, the head of the vocational development division of the Lampung Province Education and Culture Office (Irianto, 2018), stated that he would continue to encourage VHS to be able to develop skills competencies by implementing the 4-year vocational program. Although the 4-year vocational program is a school choice, this program has become a concern of many VHS. At the same time, the 3-year VHS graduates also compete to enter the business world and the industrial world. Differences in

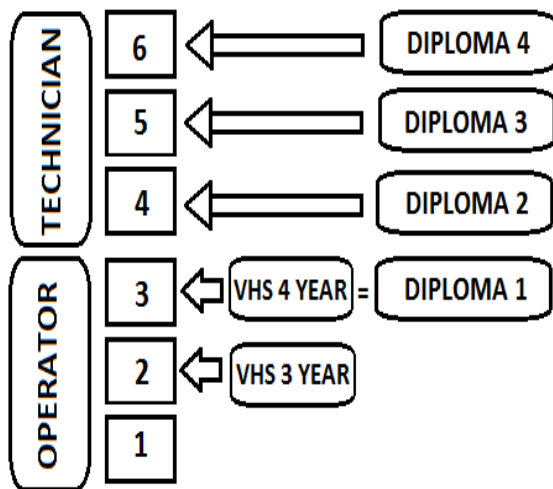
learning and experience, allow both programs to have different quality graduates. How far the competency achievement for the 4-year vocational students is needed further research. Based on the explanation above, further studies need to be conducted on the 4-year Vocational School program with the title "increasing competitiveness and work readiness of four-year vocational high school (VHS) students". The study was conducted with a review of the curriculum system, graduate competency, and industry interest in 4-year vocational school graduates.

The government has built a vocational school with two educational models, namely the 4-year vocational model and 3-year vocational school. The main objectives of the development of the two models of vocational education are the same, namely to equip students with various competencies in order to develop graduates' ability to find work, work assignments, entrepreneurship readiness, pursue work faced, and renew their work skills, so that a career or business is carried out continues to grow. The beginning of the 4-year Vocational School program was a pilot project of the Middle School of Development Engineering of 8 schools throughout Indonesia. The aims of Middle School of Development Engineering the pilot project are: (1) pioneering souls; (2) have the ability to work and happy in his work; (3) can process and carry out the ideas of technical experts on the level above; (4) able to lead and guide the technical implementers below.

Based on the Decree of the General of Primary and Secondary Education of the Ministry of Education and Culture number 4678/D/KEP/MK/2016 concerning the Secondary Education Expertise Spectrum (SK-PMK), the next a 4 years education program is based on the roundness of education needs in Expertise Competence (KK). This decision gives an opportunity in one vocational school, there is a 4-year KK education program and a 3-year KK.

As is well known that the number of Vocational Schools throughout Indonesia has reached 13,610 SMK (2017). All Vocational Schools make it possible to organize a 4-year education program. Through Presidential Instruction No. 9 of 2016, the President of the Republic of Indonesia instructed the Ministers of the Work Cabinet, the Head of the National Professional Certification Body, and

Governors throughout Indonesia to take the necessary steps according to their respective duties, functions and authorities to revitalize the implementation of Vocational Schools, in order to increase the quality and competitiveness of human resources. For a 4-year vocational education program at least must have a qualification for the Indonesian National Qualification Framework (IQF) level 3 equivalent to a diploma 1. The IQF level diagram starts at level 1, up to level 6, as shown in Figure 1 below.



**Figure 1.** Indonesian National Qualification Framework (IQF) Level 1-6 for VHS and Diploma (Source: Direktorat Pembinaan Sekolah Menengah Kejuruan, 2017).

Figure 1 shows that 4-year vocational school graduates must have a minimum level of operator capability 3. Based on IQF standards, the 4-year and a 3-year vocational high school graduates competency standards are defined and elaborated in the dimensions of attitudes, knowledge and skill. The difference between the two programs is shown in Table below.

**Table 1.** Comparison of Competency Standards for VHS of 4-Year and 3 Years

Program	Affective	Knowledge	Psychomotor
4 Years	Can be given the responsibility of guiding others according to	Advance and metacognitive operations in a multidisciplinary complex,	Indirect supervision, and responsible for the result of other

	the field and the scope of work	indirect supervision, and responsible for the results of other work	
3 Years	Can be given responsibility for quantity and quality of the work of other people in accordance with the fields	Scope of basic operational work	Work simple problems, direct supervision and given the task of guiding others.

As shown in Table 1, the dimensions of attitude for 4-year VHS graduates, in addition to being able to be responsible for their own work, also have the ability to delegate work to others. While the knowledge dimension for 4-year vocational school graduates has reached an advanced operational level, with multidisciplinary metacognitive. The 4-year vocational school graduates are required to have knowledge not only on their own workers but also have to understand the fields of work of others. Whereas for 3-year Vocational High School graduates, it is sufficient for basic factual, conceptual and operational thinking skills. While the competence of a 4-year VHS graduates in the realm of skills has arrived with the ability to solve complex problems with indirect supervision. The 4-year vocational school graduates must qualify in accordance with the IQF at level 3 with the following details: (1) able to carry out a specific set of tasks, by translating information and using tools, based on a number of work procedure choices, and being able to demonstrate measurable quality and quantity, which is partly the result of self-employment with indirect supervision; (2) have complete operational knowledge, general principles and concepts related to the facts of a particular field of expertise, so as to be able to solve various common problems with the appropriate method; (3) able to work together and communicate within its scope of work; (4) responsible for their own work and can be given responsibility for the quantity and quality of the work of others. For the 4-year VHS Field Work Practice program must

have good cooperation between school and industry.

There are school obligations, among others: (1) looking for street vendors who are in accordance with student competency skills; (2) delivering students to the target street vendor; (3) provide input to the industry about the scope of work that can be done by students while implementing the street vendors, so that they are in accordance with the competency of the participants' expertise; (4) considering the implementation of student street vendors. In addition to the school, the industry also has the following obligations: (1) giving a place of practice orientation time; (2) train students in terms of using tools in the street vendors along with relevant work safety rules; (3) provide work that is in accordance with the competency skills of PKL participants; (4) monitor and guide students in carrying out work in the street vendors; (5) provide a certificate or certificate about the experience of street vendors; (6) provide support or assistance so that students can carry out street vendors well, and smoothly.

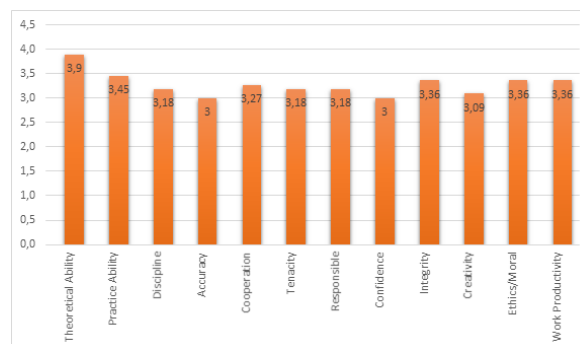
## METHODS

This study aims to determine the level of competitiveness and work readiness of four-year Vocational School graduates. The research was conducted through a literature review of references and relevant research results, which were continued through focus group discussions (FGD). Relevant references include the policies of the Government of the Republic of Indonesia, guidance on the implementation of the 4-year vocational program, books on vocational and vocational education, as well as relevant research results on the holding of the 4-year Vocational Schools, evaluation of the 4-year vocational programs, and factors that influence the quality of vocational school graduates. The study will look at the level of competitiveness and work readiness of the 4-year Vocational students in terms of the curriculum system, student competency, and industry interest in the 4-year vocational school graduates.

## RESULTS AND DISCUSSION

According to data from the Directorate of Vocational Middle School Development in 2017, VHS graduates of the 4-year program

occupy various types of jobs such as laboratory, technicians, managers, and consultants. In addition, the recognition of the world of work on the competencies of the 4-year VHS graduates is very good, as shown in Figure 2 below.



**Figure 2.** Employee Ability of 4-Year Vocational High School Graduates (Source: Directorate of Development of VHS)

Figure 2 shows that in general, the ability of employees of vocational school graduates in the 4-year program is high. Some of the prominent things of the 4-year vocational school alumni employees are their ability to practice, cooperation, honesty, ethics/morals, and work productivity.

It is hoped that the 4-year vocational program will increase the competitiveness of SMK graduates. Ali (2013) has conducted a study on how to improve the competitiveness of SMK graduates with the title "Analysis of Readiness of RSBI Vocational Schools in Increasing Graduates' Competitiveness" which concluded that there are 8 supporting components of schools in improving the competitiveness of graduates, namely: (1) readiness of human resources; (2) teaching and learning process; (3) infrastructure facilities; (4) management; (5) funding; (6) school culture readiness; (7) partnerships; (8) students and graduates.

Research on increasing the competitiveness of graduates of vocational education has also been carried out by Lunev et al (2016), entitled "The mechanism of the Industrial Educational Cluster Creation as Managerial Entities of Vocational Education". The study concluded that the need for industrial groups (clusters) presents mechanisms and labor market needs so that vocational education can prepare graduates

well and can compete well with graduates of other schools. In addition to increasing the competitiveness of SMK graduates, the readiness of schools to prepare their graduates to be ready in the industrial world also needs to be considered. Afriani and Setiyani (2015) conducted a study on the work readiness of vocational students with the title "Effect of student perceptions of vocational competence, mastery of soft skills and career maturity on student work readiness". Research shows that the factors that influence students' work readiness are vocational competence, soft skills mastery, and career maturity partially and simultaneously.

Not only schools, governments and industries must also play an active role in preparing competent VHS graduates. Schmidl and Zimmermann (2015) conducted a research on vocational education systems in several industrial countries, entitled "A Road Map to Vocational Education and Training in Industrialized Countries" which found that in order for a vocational education program to run optimally there must be three requirements, namely: (1) support from the entrepreneur or industry; (2) support from young people, families and trade unions; and (3) support from the government, be it funding or policy. Such an approach will optimize vocational education in preparing graduates.

In line with the results of the study Komariah, Rahmawati, and Harsana (2017) report the results of the study entitled "Need Assessment of Career Bases Model Intervention as a traverse for Culinary Vocational Education Graduates work readiness". Conclusions obtained that in order to prepare graduates for work, must consider several aspects, namely: (1) knowledge of the orientation of the world of work; (2) recognition of self-ability; (3) independent job skills and development of the workforce. Career guidance also plays an important role in preparing vocational school graduates. Pertiwi (2017) conducted a study entitled "The effect of career guidance on the work readiness of students in the field of fashion expertise in VHS", which concluded that: (1) there is a significant positive influence between the variables of career guidance and work readiness of vocational students; (2) students really take advantage of career guidance that has been obtained.

In addition to research on career guidance, Miqawati and Wijayanti (2017) conducted a study entitled "Job hiring and application letter writing training to prepare vocational school graduates to face the world of work" which found that: (1) to prepare vocational graduates ready to enter the world of work, training in the introduction of the world of work is needed; (2) writing a job application letter, which is completed with Indonesian and English language curriculum vitae (CV); and (3) based on the experience of overseas work partners, that vocational school graduates have difficulty writing English job applications.

Increasing competitiveness and preparing graduates as well as possible is very important, considering there are still many VHS graduates who lack the trust of the industry regarding the competencies they have. Wang and Tsai (2014) have conducted research on the feasibility of VHS graduates, especially hotel graduates, entitled "Employability of hospitality graduates: student and industry perspectives". The study involved 105 respondents in the hospitality business manager and 193 respondents in the hospitality major. From the study, it was found that both from the perspective of managers there was a lack of trust in VHS graduates from the hospitality department. Likewise, senior students who will graduate, do not believe in the abilities they have when going to work.

Vocational education in Indonesia must begin to prepare the best graduates in this XXI century. Because in the study conducted by Dougherty and Lombardy (2016) from the University of Connecticut, entitled "from vocational education to career readiness: the ongoing work of linking education and labor markets" concluded that the relationship between preparatory education for labor always changes as time goes on time. In the next 10 years, the needs of the market (the world of work) require many workers who are critical to being able to find new things from a field that is done. To respond to this challenge, 4-year Vocational Schools require students to think more critically and innovatively so that in the future, they still have a place in the world of work.

The 4-year Vocational Program is one of the alternatives chosen in order to increase competency and competitiveness. There are



several studies in Indonesia about the 4 Year Vocational Program. Yudha (2015) conducted a study entitled "4-Year Vocational Execution in order to support the competitiveness of machining students of VHS 2 Depok" who concluded that there were 4 components to the 4-year vocational education program, namely: (1) input to the implementation of the 4-year vocational education consists of quality management, teachers, students, curriculum and facilities that meet the standards; (2) the implementation of internship in class 4 makes students more focused on facing the National Examination (UN), where internship is carried out between 6 months to 1 year, thus making students gain more experience in the industrial world; (3) the output component shows that 4-year vocational school graduates are ready to work, it is proven that 100% of students pass the Competency Practice Examination with an average score above the Minimum Completion Criteria (KKM); (4) the outcome component of the 4-year vocational program is that many industries believe in the quality of 4-year vocational school graduates, and have even signed cooperation agreements between schools and industries, both in the provision of practices and in assisting employment.

In line with these findings Amiruddin (2017) conducted a study entitled "Effectiveness of 3-year Vocational High School and 4-year Vocational School as a school system through the CIPP Model Evaluation" which found that: (1) from the aspect of context variables, 4-year vocational graduates have competence, professionalism, and better working age maturity compared to 3 years Vocational High School, but both types of Vocational Schools are maintained by adjusting to industrial needs; (2) from the aspect of the input variable, that the socio-economic status of students plays a role in improving learning achievement, teacher education qualifications improve mastery of pedagogical competencies, training or apprenticeship teachers in industry can change the learning paradigm, senior teacher pedagogical skills and competencies increase, teacher professional development in the industry can internalize actual learning in the workplace, and criteria for the head of Vocational School must meet nationally applicable standards, especially 4-year vocational high school heads; (3) from the

process variable aspect, that learning leadership must be responsible for: (a) formulating, defining, and socializing with the school's vision and mission formally and informally; (b) formulating and developing curriculum through a process of synchronization and validation with industry parties; (c) conduct learning monitoring and evaluation; (d) monitoring the development of students; (e) compile and determine the learning schedule; (f) providing incentives for teachers and students who excel; and (g) the effectiveness of the learning process depends on the quality of the development and synchronization of the school curriculum with the industry; (4) from the aspect of product variables, that the learning achievement of 3-year Vocational students is more likely to go on to higher education, while for 4-year VHS graduates, it is more likely to be absorbed in the industry.

Other research that wanted to reveal about the 4-year vocational program, was also conducted by Soenarto, Amin, & Kumaidi (2017) with the title "Evaluation of the implementation of the 4-year program vocational high school policies in increasing employ-ability graduates" by involving as many as 544 respondents. The results of the study found that: (1) Vocational curriculum 4 years and 3 years using a national curriculum developed based on the needs of the business world and industry (BWI); (2) the competency of 4-year VHS graduates (100%) is categorized very well, while for 3-year SMKs, 64% are categorized very well; (3) according to BWI, the 4-year VHS graduates excel in discipline, tenacity, theoretical, ability, practical ability, self-confidence, thoroughness, creativity, and leadership; (4) Competence of the 4-year vocational teachers is superior in guiding students, producing teaching materials, developing workshops, and building cooperation with BWI; (5) VHS facilities and infrastructure a 3 years and a 4 years have similar conditions; (6) the 4-year VHS funding involves alumni while for 3-year Vocational Schools, no; (7) the speed of getting a job, the number of graduates who work, and the income of the 4-year vocational school graduates better than the 3-year vocational school; and (8) Job satisfaction of the 4-year VHS graduates is better than a 3-year VHS graduates.

The latest research was conducted by Damayanti (2018) comparing the education of the double system between 4-year vocational school programs and 3-year vocational school programs, with the title "Comparison of competency of students in junior high school dual system 4-year program at VHS 5 Surabaya with senior high school programs 3 years at VHS 2 Surabaya". The study found that: (1) the 4-year vocational school students (VHS 5 Surabaya) have more professional competencies at work; (2) better working age maturity compared to the 3-year vocational program (VHS 2 Surabaya) even though both types of Vocational Schools have been adapted to the needs of the industrial world; (3) Vocational schools with a 4-year program are more likely to work directly in the industrial world, compared to VHS 3-year programs which are more likely to continue their education to higher education.

The 4-year vocational school graduates have more professional competence in work because they on average do work practices in the industry for a period of 1 year. They learn while working (learning by doing), practice using the tools of the production process, they are experienced in the production process of an item and or service. Working with such work tools and training, students gain practical knowledge and skills (Muslim, et al, 2018). Especially in industrial work practices, there are group assignments, where students need discussion. Such group discussions, require collaboration, share tasks and responsibilities to complete tasks (Muslim, 2013). Collaboration can reduce mental barriers, due to limited experience and a narrow perspective, especially for those who lack experience (Johnson, 2014, p. 164). The effectiveness of industrial work practices as mentioned above will be increased if equipped with e-learning (Soeparno, & Muslim, 2018).

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useful for vocational education in particular, and education in Indonesia in general.

## CONCLUSION AND SUGGESTION

Based on a study of the literature and the results of relevant research, and continued with a focus on group discussion (FGD), the following conclusions were obtained: (1) Judging from the aspect of the curriculum, the 4-year vocational education program helps students to focus on facing the National Examination, because there is no internship in the second semester, but an internship is conducted in the fourth year, so they get more work experience; (2) Judging from the competency of graduates, Vocational Schools with a 4-year program have better competencies than Vocational Schools with a 3-year program, because industrial practices are carried out for a longer period of time, so they are more competent; (3) Judging from the interests of the industry towards graduates, the industry prefers 4-year SMK graduates, compared to 3-year SMK graduates, because most Vocational Schools that apply 4-year education have collaborated with industry.

Preferably, each Vocational School is brave enough to take a 4-year vocational program, so graduates have a good category. Through a 4-year vocational education program, the competence of vocational graduates is better equipped to work and has higher competitiveness than a 3-year vocational school. The 4-year vocational school graduates have a higher level of thinking skills and better work attitudes, making it more suitable to meet the demands of the workforce in the XXI century in Asian countries (AFTA).

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