

The Co-operation of Vocational High Schools and Industries in Achieving Graduates Competence

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Abstract. This study aimed to examine the relationships among synergistic co-operation between vocational schools and industries in implementing the apprenticeship program. It is observed from support for industrial facilities, technical guidance, and the quality of culinary vocational school graduates in Makassar, either directly or indirectly, through competencies. The study was conducted at a culinary vocational school with a sample of 120 students using proportionate random sampling. They are collected data using questionnaires, documentation, and interviews. The data analyzed by quantitative descriptive analysis and path analysis. The study results concluded that: (1) co-operation synergies contribute simultaneously toward the mastery of competencies, and (2) industrial facilities support, technical guidance, and competence provide simultaneously and significantly toward the quality of graduates. Implementing the apprenticeship program in industrial which have facilities support and technical guidance will contribute simultaneously toward the mastery of competencies of the students Culinary Expertise Program.

Keywords: Industrial Facilities, Industrial Guidance, Internship Program, Graduate's Quality, Culinary Expertise Program.

INTRODUCTION:

Vocational education is aiming to prepare learners to become labour and independent entrepreneur. It applies the reality of the competencies taught at vocational education equal to the business world and industry. The existence of vocational education that is in the same educational value between a school with the business and industry (Pavlova, 2008).

Vocational High School (VHS) always interesting to discuss. It is not only about the ability of teachers to innovate in teaching and

learning but also related to the purpose of the learning outcome (Kusumatuty et al., 2018). The fact of employment in Indonesia shows high unemployment (NUGRAHINI, 2019). The number of graduates of vocational secondary education is one of the highest unemployment which has not been able to meet the demands of the labour market.

The relevance of the learning program is still the issue of the quality of vocational education in developing countries, including Indonesia. The teacher of vocational education faced with matters of significant relevance to the needs of stakeholders. The relevance will realize

from the synergy between an educational institution with the business and industry.

The synergy of the educational institution with the business and industry uneasy to apply (Oyinloye & Asonibare, 2020). It can see from (a) the inconsistency between the demands of the industrial world and the skills possessed by graduates and educational institutions, (b) the weakness of industry involvement in managing education, whether on inputs, processes, outputs, (c) Each of the community, school managers, and stakeholders towards efforts to achieve the goals together (Aw, 2018).

School relationship management model with the industrial society is the entire process of school activities planned and cultivated intentionally and thoughtfully by vocational secondary schools (Sumbodo et al., 2018). In particular, the community industry concerned directly with the school associated with the employment. The operational activities of education, performance, and productivity of the school are expected to increasingly effective and efficient (Purnamawati & Syahrul, 2018).

Vocational high school of Foodservices desperately needed by the industry. Foodservice-related service industries are engaged in the provision of food and drink. The foodservice industry is a labour-intensive industry, and so the development of the sector has opened up employment in both the formal or informal areas.

Foodservice industry includes many things, ranging from the production of food and beverages made by hotels, restaurants, cafes, stalls to street vendors. It encourages the availability of skilled labour fields, one of which can obtain from secondary vocational school graduates area of expertise of Boga. Besides the above, as a tourist destination with the rise in the number of visitors, hospitality and accommodation factors supporting high-impact tourism needs of graduates of vocational high schools field of Boga. It is demanding craftsmanship relevance foodservice owned vocational secondary education students with the needs of the foodservice industry (Abdullah et al., 2013).

The implementation of internship is an effort to improve the quality of vocational education graduates. But in reality, during the internship, students sometimes rely heavily on using existing facilities in the industry. This makes it difficult to achieve quality expectations

of graduates (Hertzman & Maas, 2012; Pilcher, 2016). The school's relationship with the industry is enormous benefits, and that means for the good of coaching, moral support, materials, and utilization of the Community industry as a source of learning. The public can find out many things about the school and the resulting innovations, the channel needs to participate in education, pressure, and claim against the school (Yoto, 2015). Food industry advisors are experienced chefs and assistant chefs. The supervisor always advises students that they work diligently and painstakingly which can improve their competence. These competencies will be useful for themselves in the future (Lo et al., 2002).

Mastery of the competence of students is the main goal of implementing internship. For that, the seriousness of students in doing internship is very necessary. The role of mentors and the completeness of industrial facilities is an external factor for students in increasing competence. Meanwhile, mastery of competencies must be an internal part of the student that he must work on by himself (Ko, 2010, 2012).

The quality of graduates is a reflection of the academic administration of the study program. For this reason, organizing the culinary study program really hopes that the graduates produced will be of high quality (Mesch, 2012). One of the academic programs to be measured is the implementation of industrial work practices. The quality of graduates is measured through user satisfaction with the performance of students during the implementation of internship (Lee, 2006)

Based on background above, the goal of this research are: first, to elaborate the effect of an industrial facilities (X_1), industry guidance (X_2), and the mastery of competencies (X_3) as well as the quality of graduates (Y). Secondly, to find out how much the contribution of synergistic co-operation between vocational school and industries in the implementation of the internship program. The hypotheses of this research are the industrial guidance is more effected than industrial facilities to mastery the competencies.

METHOD

This research is quantitative, the type of survey that aims to find out the free variables contributing towards a bound variable through

the causal relationships by using multiple regression analysis. The use of line based on the analysis of the goal and that is to figure out the causal relationships, directly and indirectly, set of exogenous variables against endogenous variables. Exogenous variables in this study are

the support of industrial facilities (X_1), industry guidance (X_2), and the mastery of competencies (X_3) as well as the quality of graduates (Y).

The Association relationships between variables shown in Figure 1.

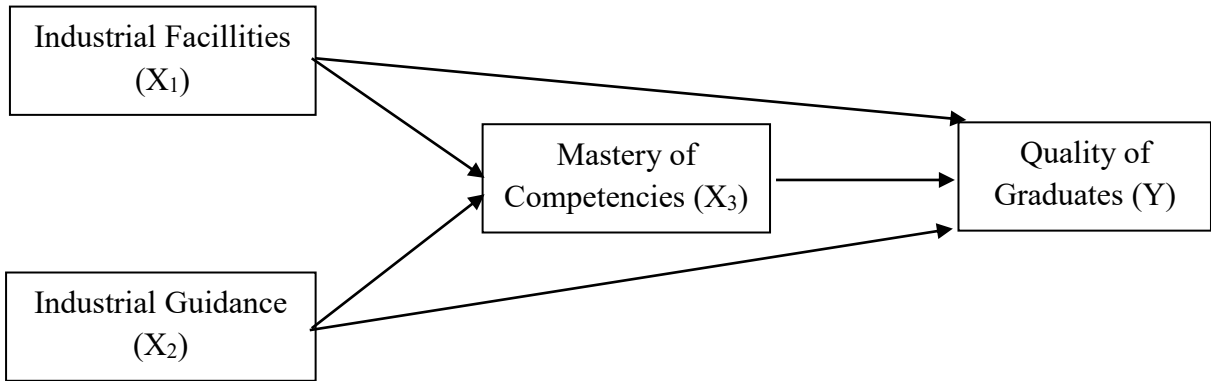


Figure 1. Relationships Between Variables

This research was carried out in vocational secondary schools public and private areas of expertise Tata Boga and hospitality accommodations with a total sample of 120 students obtained by proportionate random sampling. The research on data collected with the questionnaire and documentation.

Data research results are analyzed using descriptive statistics and the application with the help of SPSS inferential version 20.0. Next to test the hypothesis used regression analysis technique that aims to see the contribution of endogenous variables exogenous variables. The test results criteria analysis of the coefficient of correlation by looking at the value of significance, i.e. less than 0.05, then H_0 rejected

which means that there is a significant relationship between the variables.

RESULTS AND DISCUSSION

Result

Descriptive data of synergistic between a vocational school with industry in the implementation of the internship work in terms of variable support industrial facilities, industrial guidance, mastery of vocational competence, and graduates quality of Tata Boga expertise program. It was classified based on the ideal of the highest and lowest scores are then divided on a five scale. The description of the variable data supports industrial facilities are shown in Figure 2.

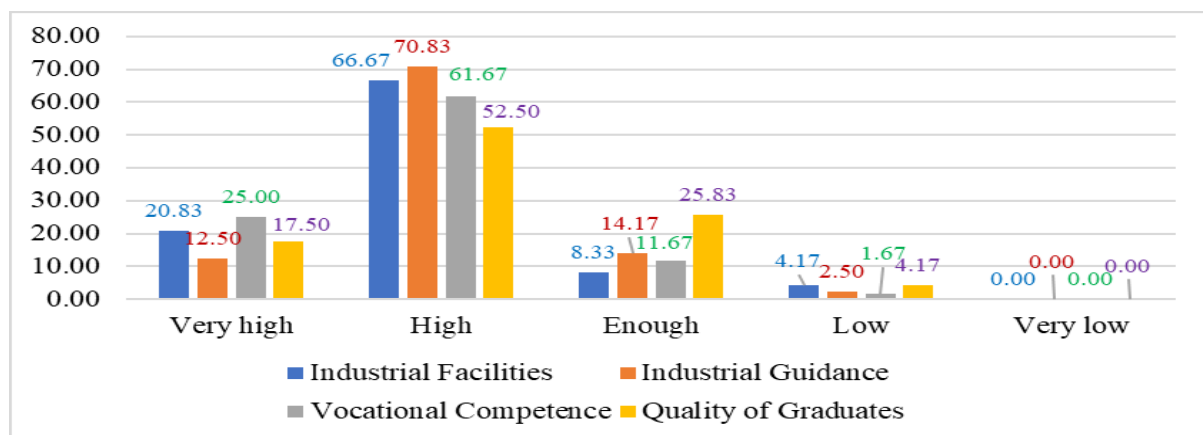


Figure 2. Diagram of synergistic between a vocational school with industry in the implementation of the internship

Based on research, the synergistic between a vocational school with industry in the implementation of the internship work in terms of variable support industrial facilities are mostly high amount 66.67%, and 20.83% is very high. It means the industrial facilities are high to implement the synergistic between a vocational school with industry. Dual system education viewed a system. If all the components involved are aware of their respective functions for system functions, it can maximize to create a form of permanent co-operation between the world of business/industry and schools with an awareness of the mutually beneficial and needed. Through this collaboration, it can obtain at the output and optimal outcomes, i.e. the creation of qualified human resources under the needs of society and the job market (Arfandi & Sampebua, 2016).

The school has its limitations in the financing and provision of the learning environment, while the industry has limited educational resources to form the required workforce. Therefore, to get the vocational high school graduates are ready to use, then both sides should make an effort, or at least the involvement of industry to devise a training program. The role of the industry should be shown in the original form of co-operation programs and financial support so that the quality of secondary school graduates in vocational fields of Foodservice is excellent, by the needs of the industry so that graduates can be absorbed in employment. School and industry co-operation must be built upon the willingness and need each other. The world of work and industry parties should realize that the industry will not get a ready-made workforce they require with the desired requirements, without establishing a joint educational program.

The variable of industry guidance is the highest amount of 70.83%, and 12.50% is very high. So, we can say that technical guidance is high to implement the synergistic between a

vocational school with industry. The world of business/industry has a massive role in the success of the implementation of the dual system of education. Industry involvement in the education of dual system vocational school partnership in realizing the industry among other things provides a place of practice for students, the provision of funds for the organization of the education system, designing educational programs and implementation of the program until the student assessment of students in vocational education.

The data showed that amount of 61.67% of the mastery ability is high category, while 25.00% is a very high category. So, we can say that the mastery of vocational competence Tata Boga is high. The vocational high school should prepare graduates in global competition with professional leadership and integrity skills. It will make them have a vast opportunity to work in the world of work. For that, the learning process given to students needs to strengthen with soft skills. In line with (Laguador & Ramos, 2014) research which explains that the owners of the company expect graduates to have competence in terms of knowledge and skills of analysis, job discipline, communication skills, computer skills, and also entrepreneurship skills

Variable of the quality of graduates described that 52.50% is high, while 17.50% is very high. It means the quality of graduates is high to implement the synergistic between a vocational school with industry. The purpose of the Organization of the work practices of the industry is to improve the quality of secondary vocational school graduates, either knowledge, skills, and work ethic that comply with the demands of employment. Next, they are ready to enter the job market. This type of expertise and the number of graduates produced by vocational secondary schools are not yet all by the demand of the job market.

The result of the inferential analysis shown in Table 1.

Table 1. Summary Results of the Inferential Analysis

	Variables	Significant Influence			
		Partial	Simultaneous	Other Var	Sig.
Sub-Structure 1	$X_1 \rightarrow X_3$	0,372	0,614	0,386	0,000
	$X_2 \rightarrow X_3$	0,349			
Sub-Structure 2	$X_1 \rightarrow Y$	0,224	0,701	0,299	0,000
	$X_2 \rightarrow Y$	0,362			
	$X_3 \rightarrow Y$	0,252			

Industrial work practices are one form of application of the policy of the Ministry of education and culture in the concept of "link and match" through education of dual system between the educational world with the world of work. It engages learners directly working in the world of business/industry. Work practices industry aims so that learners have the competence under the expectations and demands of the business community/industrial world, besides also acquired professional experience as

one thing to improve the skill of professional. Clements & Cord (2013) explains that the implementation of the field experience program provides students with the opportunity to apply their knowledge practically and maximize their learning outcomes with the added advantage of equipping themselves with the competitiveness of the labour market. It will make graduates become qualified when they can face high competitiveness in the world of work.

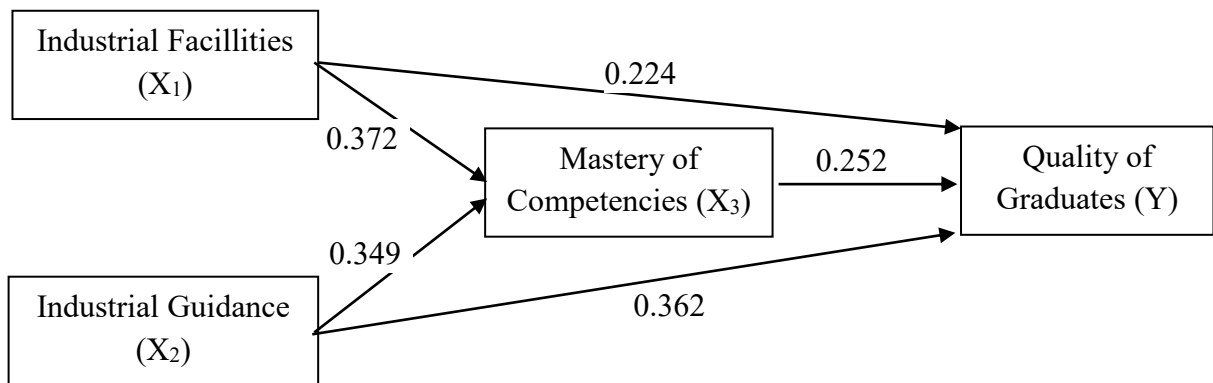


Figure 3. the influence value of partial relation

The significance test results on the structure of 1 show the value of Sig. of 0.000. Those values mean that the Sig value ≥ 0.05 . so that H₀ rejected and the H₁ is accepted, this means significant regression coefficients so that the co-operation synergy among vocational high school with the industry of support facilities and the guidance of the industry contribute simultaneously and significantly to the mastery of competencies Tata Boga 61,4%. Similarly significant contributions also partially. Meanwhile, the significance of test results on structure 2 shows values 0.000 of Sig. Those values mean that the Sig value ≥ 0.05 . so that H₀ rejected, and the H₁ is accepted; this means significant regression coefficients. Based on this, it can be inferred that the variable support industrial facilities, industry guidance, and control competencies contribute simultaneously and significantly to the quality of the graduates of VHS, i.e. of 70,1%. So it partially also make a significant contribution.

Discussion

The role of industry in the input of learning done through the synchronization of competencies required by the industry. In some developed countries, the industry is necessary to

play an essential role in the education process, especially concerning the improvement of student competence. It is stipulated in strict regulations, and the impact will return to the industry in terms of tax reduction, the readiness of prospective workers, and some other things (Pardjono, 2011). Although Indonesia has not done the same, this collaboration should be pursued where both parties must make efforts together by synchronization of inputs and outputs in producing readiness graduates to fulfil the labour market demand.

Valdez (2012) explains that the curriculum should be designed to prepare graduates and actualize the core competencies expected by the world of work. Furthermore, Valdez et al. (2012) suggest that the development of a practical curriculum guide is carried out gradually, on-going and cyclical processes. It is an essential component of the entire educational process as a forum to meet the demands of the local and national scope of work. According to (Sallis, 2014), the quality can see as a concept of absolute relative all at once. Quality is one that ought to be seeded, a circumstance that has met a criterion so that it can be said to have the best value or weight. The quality of vocational school graduates can be seen from the level of competence achieved

mastery which is the results obtained after following education and training conducted through assessments.

The results of the analysis show that co-operation synergies between vocational secondary schools with the industry in terms of industrial facilities support and guidance at a time when the implementation of a dual system education contribute simultaneously and significantly to the mastery of competencies. Also, the results of the study show that industrial facilities support, guidance, and the control of industry competencies contribute simultaneously and significantly to the quality of graduates. From the results of the analysis can be said that the more significant the contribution of the industrialized world in the implementation of the working practices of students than the better also the quality of graduates of vocational high schools field of Foodservices.

It supports the findings of Kasli & Ilban (2013) study indicate that both universities and industry have implications of the problems faced during the internships program. The industries sector does not provide the necessary attention, compensation, and professional conditions to the students. Collaboration between industries and educational institutions is required to improve the relationship between interns and tourism enterprises. The managers should adopt a friendly approach to the students and give more positive responses and also make how to feel more comfortable the students in the workplace.

Dardiri (2011) states that to overcome the lack of relevant competence of graduates with the needs of industry, there are some suggestions: (1) the diversification of graduate capability; (2) innovation of application of learning model based on Total Quality Management (TQM); (3) strengthening of learning co-operation with industry; (4) restructuring the curriculum, and (5) changing from traditional to a quality culture. Therefore, it is necessary for the leadership of educational institutions to (1) encourage TQM-based learning innovation; (2) diversify graduate competency through curriculum improvement according to industry requirement; and (3) expanding and strengthening co-operation network with business/industry for an internship program or another innovative program.

The government is an important actor who deals with education issues. One important concept is the use of information technology (IT) into the learning process. Integrating

computers and internet networks into learning has enormous benefits for students and teachers. Learning material on computers and the internet can ease the work of students and teachers. Local governments and workplaces need to develop enjoyable co-operation with educational institutions to deal with problems that arise in the community through research (Hariyati et al., 2018; Purnamawati, 2018).

Synergy in the world of education and the world of work, along with the active role of prospective graduates, is essential. This synergy needs to be done especially in exploring one's potential and preparing skills and abilities to face the increasingly competitive work world. The active role of prospective graduates should be under the guidance of relevant parties, for example, parents, schools, government to the business world. Therefore, the part of career guidance as a media to bridge and harmonise the world of education and the world of work (Purnamawati & Syahrul, 2018)

Educational institutions should have roles and responsibilities in managing and providing career guidance to their students. It should be applied from the middle school level. Students already need to be directed and guided in their careers, especially choosing school majors that tailored to their interests and talents. Why in junior high? Because, when they are about to complete their first level of education, students must be faced with a choice that is quite difficult and sometimes confusing, namely whether to continue their education at a public high school (SMU) or vocational high school (SMK) (Yahya, 2016)

The issue of choosing majors for students becomes a separate issue. Many events around us that often explain how students are disappointed and feel wrong with the chosen majors. It happened because there was no accurate and relevant information, or they just went along with friends. Majors are taken not by interests, talents and potential; the consequences will be detrimental to the student. Therefore, the role of career guidance in schools whose role is played by the Guidance Counseling / Guidance Counseling division should be more optimised, to align the world of education with the world of work (Nota et al., 2014; Walsh & Osipow, 2014).

Samani (Samani, 2018) conducted a meta-analysis of 21st-century skills and found that to be a competent workforce; he must be able to solve problems creatively and work in

harmony with colleagues. In solving problems creatively, a person must be able to collect data and information, conduct a critical analysis of the data and information, then think creatively to find the best solution. Also, to maintain good relations with colleagues, he must be able to communicate well and work together in harmony. Creative problem solving and good co-operation will determine the success of work in the industrial era 4.0.

Learning achievement can reflect the ability of students to meet the level of the learning experience. Essential competencies will function as a guide for behavioural changes to be achieved by students. Sangadji (Sangadji, 2016) research results found that learning by the investigation group method was able to improve knowledge, skills and attitudes through tests and observations conducted to students.

In this regard, many research results indicate that fieldwork practices that are well implemented by vocational students will provide increased mastery of competencies for students. It is because, during the process of fieldwork, students will get reinforcement in the mental elements, skills, insights and discipline in the world of work. In line with this, Jannah, Suswanto, & Handayani (Jannah et al., 2016) explained that students who have a high level of work readiness would have a positive and significant influence on the experience of fieldwork practices. It also supported by students learning outcomes on productive subjects and family social support together.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research and the discussion then it can be concluded. First, the co-operation synergy among vocational high school with the industry in terms of industrial facilities support and guidance contribute simultaneously and significant (61,4%) against the mastery of competencies. Second, an industrial facilities support, industrial advisor, and the mastery competencies provide simultaneously and significant (70,1%) against the quality of graduates.

To enhance the mastery of skills and quality graduates, the existence of a synergy between the school with the industry is required. An implementing the apprenticeship program in industrial which have facilities support and technical guidance will contribute simultaneously toward the mastery of

competencies of the students Culinary Expertise Program.

The readiness of student in the fieldwork should be developed from career guidance and good co-operation between school and the industry. Employability skill of the students must be enhanced to face the demand of the labor market.

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