Using the Environment as a Workshop for Vocational Education

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Abstract. The environment has long been a medium of education. Children born in a fishing environment tend to be fishermen, children born in agricultural environments tend to be farmers, and so on. Education takes place informally in various social activities. Community members who are skilled at teaching community members who are not skilled or even just starting to study. Parents or other relatives, neighbours, and other community members can all be used as teachers. Surrounding nature is a medium of learning. The learning model is proven to be able to produce adequate skills, so that community members have sufficient life skills to make a living. Vocational education in modern education now prioritizes learning outcomes in the form of skills, so that graduates are ready to enter the workforce. Therefore, it is quite relevant if the traditional education model above is adopted for the vocational education system now. The approach used is to develop relevant vocational education in the existing environment. In the agricultural environment, an agricultural school is established, in a farm environment a farm school is established, or a fishery school is established, and so on. This vocational education model guarantees the relevance of competencies to work needs. In addition, vocational education like this guarantees the integration of skills, attitudes, and behaviour development processes, so that the competencies and characters possessed by graduates are more integrated. For existing vocational schools but not yet supported by a relevant environment, the approach that can be taken is to prepare a complete workshop in accordance with the skills they want to produce in the vocational education. Workshops can be expanded by building companies around schools that are engaged in fields that are relevant to the competencies built in schools.

1. Introduction

Efforts to improve the quality of human resources are the main programs in each country, including Indonesia. Indonesia has rich natural resources, such as marine, forestry, agriculture, mining, and natural beauty to support tourism. In addition, Indonesia has enormous human resources. Large human resources must have sufficient competence to be able to manage existing natural resources. Quality and relevant education in various fields is very necessary so that the potential that is owned can be a source of development. The development of a quality education sector, both in the formal, non-formal and informal channels is the government's effort to produce competent human resources in their fields.

Human capital theory shows that individuals and society derive economic benefits from investment in humans [1]. Human capital is the potential that exists in human beings, including intelligence, skills, and expertise that is beneficial to the organization [2] [3] [4]. Human resources are not a burden but an
investment in development. Therefore, various efforts must be made to improve the quality of human resources. Increased quality of human resources is done through education. Quality education produces quality human resources to support development in all sectors.

However, the theory of human capital raises the effect of credentialism, which is the expansion of education that produces human resources with competencies that are not relevant for various sectors of employment [5] [6]. Education only emphasizes formal title ownership, not explicit competency mastery [7]. In other words, education has produced excessive candidates for labor, but is less relevant to the demands of the labor market. Adherents of credentialism are more concerned with the provision of human resources that are suitable for the contemporary job market [8].

The two theories above have the truth according to their respective arguments. Formal education is able to produce a reliable workforce. However, expanding access to formal education can produce graduates who are less relevant to employment opportunities. If human resources produced from education are not relevant to the needs of the labor market in the field, two problems will emerge simultaneously. The first problem is an increase in educated unemployment which can trouble government officials. If it is not managed properly, then educated unemployment can raise various problems. The second problem is the lack of skilled workers or experts in various sectors that can reduce productivity. The decline in productivity will be accompanied by a decrease in competitiveness at the regional and international levels.

Those who doubt the ability of formal education to produce skilled workers, on the other hand, believe that job training is a strategic media in bridging education with employment needs. The empirical experience does justify this. Many formal education graduates actually get jobs from the training they follow after completing formal education. This experience was addressed by formal education students by attending training while taking formal education. They seemed to have provided an alternative to get a job after graduation.

One of the efforts to reduce the qualification gap for graduates of education programs with the qualification demands of the job market is vocational education. The main objective of vocational education is to prepare students especially to work in certain fields, so that graduates are expected to be productive laborers, able to increase income and living standards and can develop themselves in the face of increasingly rapid changes [9]. Vocational education is organized for various fields, such as agriculture, livestock, fisheries, marine, shipping, building, health, computers, and so on. Graduates are expected to be able to fill the job market at the regional or regional level, national level, or regional level.

Vocational education must produce graduates who are ready to enter employment. If graduates become workers in one company, then they must be able to innovate to develop the company where they work, both by improving product quality and by expanding the field of work. Therefore, they are required to have broad and forward-looking insights to read changes in the demands of society. Thus, the company where they work will still be able to compete and their presence in the company is also comfortable. They will enjoy rewards, both in the form of promotion and financial.

Furthermore, vocational education graduates are even required to be able to open new jobs. They must be able to identify and explore the potential that exists in the community to be a valuable product. Besides producing, they are also required to be able to market the products produced. The product in question can be in the form of goods or services. Thus they will not depend on existing employment, and on the contrary can provide employment opportunities for other workers.

The skills possessed by graduates must be in accordance with current work demands that utilize a lot of innovations in technology.

Academic provision must be able to be applied to anticipate job opportunities and must be based on superior character. Therefore, the provision of learning facilities and the selection of learning models must be done carefully so that graduates can achieve the expected competencies. Many learning models have been developed and applied for vocational education to get optimal results. However, efforts to develop new learning models must still be pursued so that graduates are more qualified and competent in accordance with the demands of the job market.
2. Discussion

The Indonesian government applies dual system education in vocational schools. Dual system education organizes educational processes in two places, namely in schools and in the workplace, namely the business world and industry [10]. The world of work is determined by the school concerned through a cooperation program. The learning process at school and in the world of work is basically an integrated whole, which is complementary to each other to achieve the final goal that has been set. The objectives to be achieved through dual system education are: (1) produce graduates who have knowledge and skills that are in line with employment; (2) produce graduates who are highly disciplined, have a high work ethic, are full of initiative, and are creative in creating new job opportunities; and (3) establish a mechanism of recognition and appreciation of work experience as part of the education and training process [10].

Dual System Education in vocational schools which is the implementation of link & match policy is an effort to adjust the competency of vocational education graduates with the needs of business and industrial world [9]. On the other hand, the business and industrial world is required to be actively involved in the management of vocational education. The theoretical and practical competencies acquired in schools are implemented in the business and industry world, resulting in integrated competency of graduates with the needs of the workforce in the field. In fact, it is not uncommon for an internship opportunity in the business and industry to be used as a model for selecting prospective workers by the company concerned. Many graduates are directly accepted as workers because they have good competence.

The advantage that can be obtained from the education system through a dual system is that students can also be evaluated from a cognitive and non-cognitive perspective, such as self-development, character, leadership, performance, and so on. This Means, dual system education can also be used as a pattern of selection for employee acceptance for the world of work where education or other institutions are based on recommendations from the world of work place of education. Assessment from a cognitive and non-cognitive perspective can stop treatment inequality between individuals [8]. Thus, the equality of citizens' rights is more guaranteed.

To prepare vocational education graduates with entrepreneurial spirit who are ready to work, smart, competitive, and have national identity, and able to develop local excellence and be able to compete in the global market, a grand design or development plan for Teaching Factory and Technopark is made [9]. Teaching Factory is a learning method that is able to deliver students to achieve industry standard competencies through the stages of the process of achieving standard motorbike, cognitive, and affective mastery and generating learning outcomes of inspirational - intuitive behavior that is academically described as character learning. The schools that have implemented the teaching factory are linked to the industrial world through the technopark.

Dual system education is superior in preparing workers who have competencies relevant to the world of work. However, the empirical experience in the field shows that some vocational schools still meet constraints in the implementation of multiple systems. Problems that exist include the existence of the relevant business and industry, the distance between schools and business and industry, and the socio-economic conditions of students. It is not uncommon for programs owned by vocational schools to find it difficult to get business and industry as a place to conduct dual system education. Even if the company exists, it is far enough away from the school, so that students who have economic limitations are unable to reach.

Conditions like this require immediate resolution, so that what is targeted by vocational education can be achieved well. One solution that can be attempted is to make the environment a learning medium. These media include places to conduct dual system education. This means that vocational schools are developed in such a way that their existence is in an area that has a business and industry world that is relevant to the program offered. Thus the availability of real practice places is guaranteed and can be easily reached by students.

There are two approaches that can be taken to create the environment as a learning medium for vocational schools. The first approach is to establish vocational schools that are relevant to the business
world that already exists in certain regions. In agricultural areas, it is established agricultural vocational schools, in tourism it is areas established vocational education schools, and so on. This approach can contextualize the curriculum. The contextualizing of the curriculum is ultimately a local phenomenon that results as a result of the number of factors, including students' needs, students' goals, teachers' goals, local constraints, and teacher's pedagogical values [11].

The above approach makes the orientation of vocational education developed from supply-driven to demand-driven, in which the management system of vocational education changes from centralized to decentralized [9]. Children in the area can be encouraged to take vocational education in their area. The advantage gained is that students in the area have wide opportunities to pursue vocational education according to their place of origin. Students who have cost limitations are not too burdened because they go to school near their homes, where they can work on various efficiencies. If they have completed education, then they have varied choices, whether opening a business at home or working in a company.

Students are also familiar with the learning environment because they study in their place of origin. Curriculum based on aspects of indigenous culture, combined with effective pedagogical practices derived from the community and schooling results in appreciable student learning [12]. In their own environment, the development of their learning skills can be done more optimally, so that their learning outcomes are also more optimal. The character building of students can also be done more comprehensively because they are in the family and community environment. Family and community can be involved more optimally to foster student character. Thus their readiness to enter employment can be well formed. This is important because students need more influence of self-establishment as they need to be ready to enter in the industries of vocational [13].

Not infrequently also that the environment in an area requires conservation efforts, both natural, existing buildings, or patterns of life of the people. If this is the case, then vocational education in the area must have a conservation function, in addition to bringing benefits to the community. As a result, local students can be actively involved in these efforts. Of course they are more aware of the conditions in the place because they are large in the area. As a result, various business development efforts will be more optimal.

Experts in companies around the school can be used as instructors. The high practical experience they have combined with theoretical experience, so as to produce integrated competencies. Community leaders who have adequate competence can also be used as instructors. Their empirical experience of managing the surrounding environment will provide valuable experience for students. Shresta [14] gave instructions that the experienced instructors and the environment of VET play providers training was an important role for transferring skills and knowledge to the job market.

The existence of vocational schools in the relevant business and industrial environment strongly supports the achievement of the vision of the Ministry of Education and Culture of the Republic of Indonesia 2019 namely: Establishment of Individuals and Educational and Cultural Ecosystems with Characteristics Based on Mutual Cooperation [15]. It was added there that the formation of human beings and the ecosystem of education with character can be interpreted as the realization of seven ecosystem elements, namely conducive schools, teachers as encouragement, parents who are actively involved, people who are very caring, industries that play an important role, organizations that contribute greatly, and the government which plays an optimal role. Vocational education can be carried out on the basis of mutual cooperation with character-based curriculum that adopts local wisdom and diverse vocations based on the geographical needs of the region as well as children's talents and potential [9].

The concept of teaching factory and techno park for the management of vocational schools in Indonesia [9] is also supported by the existence of vocational schools in the relevant environment. The relevant environment will be a supporter of learning models that are able to deliver students to achieve industry standard competencies through the stages of achieving motorized, cognitive, and affective mastery standards. Character learning that brings out the results of learning inspirational and intuitive behavior can also be produced well in educational institutions that are in the family and community. As recommended by Lickona [16], schools, families, and other communities are responsible for character education. To connect SMKs that have implemented the teaching factory program with the industrial
world, a container called techno park is needed. Various business sectors in the school environment will directly become techno park.

A good symbiosis between vocational schools and the business world and the surrounding industries will encourage many parties to contribute, both for the progress of the school and for the advancement of the business and industrial world. Academics will be encouraged to conduct research related to innovations in the field of vocational education or innovations in the world and industry. Within a certain period of time, the region can develop into a study center according to the area of interest. If all goes normally, then a conducive ecosystem will be formed at one time, thus encouraging continuous increase in productivity. Thus, the environment and the surrounding culture that is used as the basis for vocational education can provide pleasure and contribute to the welfare of society as a whole [17].

The existence of vocational education with programs that are relevant to the needs of the surrounding area will become a driving force for development in the region. The production sector is developing, the service or service sector is also developing. If you already have a unique image, the area can be a reference for the development of other regions. Many parties then study or conduct comparative studies in the region. Indirectly the area developed into a tourist destination. Various supporting sectors of tourism will develop. So it is not wrong to say that vocational education is recognized as a driving force that is vital for socio-economic growth and technological development of nations [18].

The second approach that can be done is to establish relevant businesses and industries around existing vocational schools. It cannot be denied the existence of vocational schools that are not supported by the relevant business and industry in the vicinity. The effort to establish a business world and industry around schools is one option. Indeed, this second approach seems to require more effort, both in terms of costs and social approaches. Land preparation and physical development require large costs, especially if vocational schools are already in densely populated environments. If the business or industry that is established is slightly in conflict with the social life of the community, then the problem of environmental impacts will emerge.

3. Conclusion

Vocational education is a strategic bridge to create graduates who are ready to enter the workforce or even create new jobs for themselves and accommodate their peers. Many efforts are needed to implement such vocational education. Preparation of facilities and pre-learning facilities, preparation of teaching staff and other support staff, the insertion of the curriculum, and several other components must be done carefully so that the graduates can meet the expectations of the community. Cooperation with various parties must also be pursued, so that students get adequate competencies to support their work in the field.

Dual system education is a breakthrough of the Indonesian government to implement the relevance of graduate competencies with the workforce needs in the community. It must be recognized that dual system education has been able to produce graduates who have competencies in accordance with the needs of the community, but various obstacles still often arise. The problems referred to include the existence of businesses and industries that are relevant to the programs offered by vocational education. Another problem is the distance between schools and the business world and supporting industries that are far enough, so that it becomes a separate obstacle. Therefore, efforts are still needed to improve the quality of graduates of vocational education.

One of the efforts offered here is to make the environment a business or industry supporting vocational education. The first approach that can be taken is to establish vocational education in areas that have businesses or industries that are relevant to the education programs offered. In the fishing area fisheries vocational education is established, in agricultural areas agricultural vocational education is established, and so on. It is possible that in one area several vocational programs that support each other are developed. Forestry areas provide opportunities for opening forestry vocational education and carpentry or handicrafts that will process forest products.

Vocational education as above can support business programs from upstream to downstream, so that it can open up more employment opportunities and accommodate more and more workers. In addition,
vocational education in the relevant environment as above supports the one village one product program. This condition will reduce business competition, but will support each other. If each region has its own image, then new business opportunities will emerge, such as the development of the region into a study center or behave as a tourism area. As a result, various new job opportunities can develop, all of which lead to the improvement of community welfare.

Existing vocational education, but lacking the support of the surrounding businesses and industries can be attempted to open relevant businesses and industries. Indeed, this effort requires more costs and energy and can cause more risk. Provision of business land tends to be difficult because generally schools are already in the neighborhood. Even if there is land, the price tends to be expensive. Establishment of a business in a densely populated neighborhood also tends to cause social problems, both related to employment and other social relations problems.

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