

Implementation of Welding Production Unit Learning Model for Students' Entrepreneurial Preparedness of Public Vocational High School

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Abstract. Vocational High Schools are expected to produce graduates able to create job vacancies and produce competitive job seekers. For this purpose, they need a special curriculum. One of the applicable learning methods relevant to the need is the creation of production units. By having practical experience in a business unit, vocational students are expected to have a motivation to make entrepreneurial endeavors so that vocational graduates are able to work professionally in the industrial world and work independently as entrepreneurs. This research was a descriptive using the qualitative approach. The data were collected by holding interviews to describe the effectiveness of the production unit of a welding workshop in indicating the entrepreneurial preparedness of the students of Public Vocational High School (PVHS) 2 Tulungagung. The research result showed that the implementation of the learning model for welding production unit affected students' interest in entrepreneurship and preparedness for it. As many as 55.88% of respondents expressed their readiness for entrepreneurship after graduation. However, the welding production unit of PVHS 2 Tulungagung still needed evaluation and improvement especially in their marketing, students' involvement and the management of financial administration.

Keywords: welding, entrepreneurship, vocational high school

INTRODUCTION

Education in Indonesia has to face a greater challenge in the globalisation era (Istiarsono, 2000; Oviyanti, 2016; Rusniati, 2015). In order to have invaluable human resources, Indonesia has to develop an education system and curriculum which can satisfy the demand of the labor market. The provision of skilled and educated workforce depends highly on the quality of education and training, especially those of vocational schools (Mahfud, 2013). Vocational High Schools (VHSs) are the institutions which are expected to develop and provide excellent human resources and skilled workers (Marniati et al., 2018). However, the fact shows that not all vocational graduates are absorbed in the industrial world, which causes a number of vocational graduates to get jobs outside the area of their expertise (Qotimah et al., 2019). This suggests that vocational education is facing a problem of the relevance between educational backgrounds of workers and jobs they are performing (Marliyah, 2018).

VHSs have to develop new learning methods and curriculum so as to provide graduates able to create job vacancies and work independently as entrepreneurs. It is important for succeeding generations to realize that they are expected to create job vacancies instead of relying their future on available job opportunities (Windyati & Pardjono, 2018). As institutions of vocational education, VHSs are demanded to explore all potentials in order to meet the need of the industrial world, to have graduates with entrepreneurial spirits, quality education, readiness for employment, competitiveness in the global context, life philosophy of life, and ability to develop local cultures (Putri et al., 2019). According to Ananda and Mukhadis (2016), VHSs constitute one of the education units which is responsible for providing students with professional skills good enough to allow them to get jobs and creating students' sense of independence of entrepreneurship.

One of the learning methods adopted at VHS is the production unit. The Production or Service Unit of Vocational High Schools refers to business ventures established by vocational schools. The unit explores academic and business dimensions by empowering everyone at the school in a production or service unit established professionally. The production unit can be defined as a part of school laboratories in which materials and human inputs are combined to produce goods or provide for services (Chukwu & Omeje, 2017). Basically, production units form an effort to enhance the quality

of school designed to be the place where graduates with entrepreneurial spirit are produced and human skills of students and teachers are improved. In addition to being one of the learning media, a production unit is created at schools to make a full use of school facilities, which in turn produce a surplus for the schools (Mahfud, 2013). It is one of the strategic programs of VHSs in their effort to introduce the working environment in the industrial and business world into the educational context (Al-Awbathani et al., 2019). Students' learning activities in production units put more emphasis on practical learning in a real work (learning by doing) within learning activities at schools (Firdaus, 2013). Production units are established and operated at schools to present a vivid illustration of working environments students should adapt to in the industrial world, increase professional competence and embody entrepreneurial spirit on students.

Learning in production units can give students first-hand experience of working in the field; therefore, students are expected to improve their competence and capture entrepreneurial spirit in which to be entrepreneurs who can create job vacancies after graduation. Production units become students' learning media, workplace, and a facility for their competence improvement, which will help train students to be job creators or, at least, competitive job seekers. The success of the curriculum for vocational education depends heavily on the success in producing graduates adaptive to the development of the industrial world. Marniati et al., (2018) stated that the success of the curriculum for vocational education lies in its ability to simulate the living condition of the industrial world. In this regard, the establishment of production units is supposed to help hold students in readiness for jobs or employment. The learning method in production units, however, will work better if the units are managed professionally and designed to help students, teachers, and schools' staff to define and live up to the standard of moral values in the industrial world and to shape business mindsets and behaviors, which allows them to be taught about entrepreneurship (Marniati et al., 2018).

The curriculum which keeps the balance between soft and hard skills in accordance with students' competence and expertise will potentially help students to be great geniuses and enter the industrial world either by creating job opportunities or successfully competing in the local or global labor market, which will by turns help reduce the unemployment rate. Entrepreneurial spirit cannot be embodied through conventional methods of teaching; rather, it requires changes not only in learning processes but also in the development of entrepreneurial cultures (Daryanto & Panjaitan, 2015).

Production units of VHS can become the propulsion system for entrepreneurship establishment. Creating production units makes possible the introduction of concepts of entrepreneurship and entrepreneurial behaviors and provision of good entrepreneurial experience. As a business unit, production units are profit-oriented organizations run and managed professionally by schools' academic societies.

Business mindset and program effectiveness are key factors in producing great entrepreneurs (Din et al., 2016). Entrepreneurship relies on some characters and skills, like multi-dimensional thinking skills and the skill in grasping new opportunities and implementing ideas (Daryanto & Panjaitan, 2015). Entrepreneurship education can change attitudes and behaviors of individuals, initially by improving their soft skills (Apriana et al., 2019). The awareness of the importance of entrepreneurship can be fostered through entrepreneurship education and training (Gómez Gutiérrez & Garzón Baquero, 2017). One of the best ways to have entrepreneurial skills is to get students directly involved in production units because practical work experience will help establish the relevance of learning experience in educational institutions and work experience in industry (Aze & Widihastuti, 2018). To be great entrepreneurs, individuals need to understand all aspects of the business into which they will go as well as harnessing their genuine talents and potentials (Evawati, 2020).

Well integrated with the curriculum, production units of VHSs become adequate facilities for learning processes and are expected to produce graduates well prepared for entrepreneurial endeavors. The aforementioned explanation suggests the need for special efforts to produce vocational graduates

ready and able to embark on their own ventures, namely by integrating entrepreneurship into the curriculum through making creative, innovative work (Ananda & Mukhadis, 2016). One of the efforts to be made is to conduct learning activities through production units. The purpose of this research was to know the influence of the implementation of the learning model for welding production unit on the entrepreneurial preparedness of vocational students.

METHODS

This was descriptive research using the qualitative research method. In qualitative research, researchers serve as the main research instrument. The primary data of this research were collected through interviews with curriculum staff, subject teachers, and the principal. The researcher also interviewed the 2019 students majoring in welding engineering to measure the reliability of information obtained from the previous interviews by collecting further information from the perspective of other informants. Adopting different perspectives and points of views was expected to reveal the reasonably objective truth. The interviews were conducted by means of a recorder, which in this case was a smart phone. In addition, the researcher also made direct observation in the welding workshop of PVHS 2 Tulungagung. Meanwhile, the secondary data included supporting documents, the administration of the welding workshop and the database of the alumni of PVHS 2 Tulungagung.

The research was conducted in the welding workshop of PVHS 2 Tulungagung, located in Sumbergempol, Area Sawah, Loderesan, Kedungwaru District, Tulungagung Regency, East Java. It involved 40 respondents as the research population and sample, including the principal, 6 teachers of welding engineering major, and 34 students of the 2019 students majoring in welding engineering.

The researcher used the triangulation method to investigate the validity of the data and information obtained from different points of views by reducing as many biases as possible occurring during the data collection and analysis. The researcher compared the results of the interviews, drew a conclusion on the basis of all the collected data, and considered whether or not the real condition in the field as well as the existing theory and other supporting theories confirmed the conclusion.

The data analysis was technically carried out by making data reduction, namely by considering the most fundamental question related to the research. Subsequently, the chosen data will be used to find the root of the problem in detail and help the researcher to collect further data.

The data collected were then described in brief and clear sentences, or presented in charts and diagrams. Those data were used to answer the research questions, the most fundamental question, and other questions arising while the researcher was exploring those data. The research attended at a conclusion showing students' entrepreneurial preparedness as the result of the implementation of the learning model for welding production unit of PVHS 2 Tulungagung.

RESULTS AND DISCUSSIONS

Production units of VHS are created to achieve the school's objectives effectively and efficiently. The plans developed during the research were the education and business plans, because the function of production units of all VHS is to provide the financial base of learning and education. Production units of VHS are also used as learning media with which to familiarize students with work practices in industries.

Students' Entrepreneurial Preparedness after the Implementation of the Learning Model for the Production Unit of Welding Workshop

Practice-based activities in production units of welding workshop help shape students' entrepreneurial behavior and encourage them to express their willingness to take entrepreneurial actions. The result of the interviews with both teachers and students of PVHS 2 of Tulungagung showed that practice-based activities in production units at schools were effective enough to influence

students' entrepreneurial behaviors. As many as 60% of the respondents considered the production unit of welding workshop to be effective for the embodiment of students' entrepreneurial spirit. The principal and 4 teachers said that the creation of the unit production was highly effective for entrepreneurial preparedness, while two other teachers considered it to be effective. Moreover, of all the 34 students, 5 students considered the creation of the unit production to be highly effective; 22 of them considered it effective; and the other 7 students deemed it to be ineffective.

The result of the interviews with the 2019 students majoring in welding engineering about their readiness for entrepreneurship after graduation. 19 students (55,88%) declared their readiness to embark on their ventures, and 12 students (35,3%) wanted to be employees of factories; meanwhile, 3 students (8,82%) wanted to continue their studies at universities.

Students' Involvement in Production Units

It is known from the result of the research that the welding workshop does not open every day; instead, it is run to order. Consequently, only a few students majoring in welding engineering were involved the welding workshop. Asked about their involvement in the production unit of the welding workshop, 19 students (55,9%) admitted being actively involved in the workshop, while 15 students (44,1%) admitted being not so.

Furthermore, every time the workshop received an order, teachers comprised 70% of the team completing the order, while students comprised 30% of the team. In other words, the majority of the team working in the workshop were teachers. Financial administration of the welding workshop was not professional yet because they were carried out by the study program and no student was involved. Those students involved in the workshop barely received incentives. Only when the workshop received a large order were students given some incentives.

Alumni Taking Entrepreneurial Actions

The data collected during the research show that as many as 35% of the alumni of the students majoring in welding engineering were entrepreneurs. This number was indicative of a considerable entrepreneurial flair of the alumni of PVHS 2 of Tulungagung.

The result of the analysis of the interviews showed that the creation of production units, in the form of a welding workshop at PVHS 2 of Tulungagung, was instrumental in holding students in readiness for entrepreneurship. This is in line with the result of Rokhimah & Margunani (2017) stating that entrepreneurship education positively affects students' entrepreneurial spirit. Entrepreneurship education is a learning process through which to change students' attitude towards entrepreneurship as a career choice (Marliyah, 2018). PVHS 2 of Tulungagung provides entrepreneurship both in theory and in practice through students' activities in production units conducted to enhance students' entrepreneurial skills.

Entrepreneurial endeavors like the creation and management of a production unit in the form of a welding workshop demand students to be able to manage a business professionally and complete an order in practical experience, thereby broadening the horizon of those students and stimulating them to be entrepreneurs. Those students receiving entrepreneurship education and training will be more creative both theoretically and practically, which will affect their readiness to embark on their own business after graduation.

The research by Anggreani et al., (2019) shows that entrepreneurial spirit can be brought to students in order to improve their competencies and skills by involving them in entrepreneurial ventures in production units. This is also corroborated by the research by Wijayanti and Samrotun (2016) stating that entrepreneurial knowledge, creativity, hands-on experience, business mindset contribute simultaneously significantly to entrepreneurial preparedness.

Those students involved in the practical work in the production unit of the welding workshops

simply know how the order received by the workshop may increase their income. Although they did not usually receive incentives, the cost the customers paid for their orders drew their interests in earning profits from taking entrepreneurial actions.

The provision of entrepreneurship education for the expertise program of welding engineering of PVHS 2 of Tulungagung is effective in helping inspire students' creativity. The positive effect of entrepreneurship education through creating the production unit of the welding workshop in an effort to capture students' entrepreneurial spirit can be measured from their great readiness for embarking on business ventures after their years in VHS. In addition, the data showed that those students admitting that entrepreneurial knowledge gained from the practical work in the production unit helped them represent the spirit of entrepreneurship made up a high percentage of the respondents.

Students' involvement in activities in production unit is quite fundamental for edupreneur. In this regard, the model for entrepreneurship education and training can significantly predict students' entrepreneurial intentions (Ayalew & Zeleke, 2018). Entrepreneurial spirit cannot be embodied through conventional methods of teaching. Instead, it requires changes not only in learning processes but also in the development of entrepreneurial cultures (Daryanto & Panjaitan, 2015). The learning model for entrepreneurship should encourage students to be more active in and outside the class by providing them with practical experience of entrepreneurship in the field (Hadriah, 2019). The considerable success of entrepreneurship education in the forms of students' demonstrating their willingness to be entrepreneurs, having entrepreneurial behaviors, and taking entrepreneurial actions after their graduation depends on some efforts, including developing the school's resources, facilities and infrastructure, forging partnership with stakeholders, fostering collaborations among VHS by launching joint ventures and other actions to build enterprise cultures on the basis of school education.

Based on the research result, it was known that the production unit of the welding workshop of PVHS 2 of Tulungagung has not been serious about involving its students in the production unit. 70% of the team involved in completing the orders received by the workshop were teachers. The number of students involved in the workshop was small because the workshop does not open every day, but it is run to orders. Given a limited number of jobs to be done, meaning that the workshop attracts only a few customers, the financial administration of the workshop was managed by the study program. Irrespective of this fact, by way of providing those students involved in the workshop with positive motivation, the workshop sometimes gave those student incentives in the event of large orders.

Meanwhile, 7 students (20,6%) said that the creation of the production unit was ineffective in capturing students' entrepreneurial spirit, and 2 other students (5,9%) considered it to be not sufficiently effective. The high number may have resulted from the lack of students' involvement in the production unit of the welding workshop, while production units will run effectively if all of the schools' academic societies are involved the units. The involvement of all academic societies of the school will streamline the process of successfully cultivating entrepreneurial cultures at schools (Lastariwati et al., 2016). Based on the data gained from the interviews, the lack of involvement of the students of PVHS 2 of Tulungagung majoring in welding engineering resulted from the fact that the order received by the welding workshop was small. This suggested the need for more professional management of the workshop to attract attention of more customers. The learning process in the production unit will be useful if it is managed professionally and designed to help students, teachers, and staff to shape business mindsets and behaviors, which will by turns allow students to be trained for entrepreneurship.

Additionally, intensive marketing campaigns are required in order that the workshop can operate successfully and get bulk orders in such a way that more students can be involved in the workshop. The research by Marniati et al., (2018) shows that marketing products of the production unit may produce some benefits, increase the income of the school and school staff, help upgrade equipment and facilities for learning activities at class and in production units.

The fact that the welding workshop of PVHS 2 of Tulungagung does not open every day and is run only to order means that the production unit has not been managed professionally and has not taken the priority of the school. This supports the finding of the research by Marliyah (2018) stating that irregular activities of production units at VHS are indicative of the fact that they have not taken the priority of the school. Based on the interviews, there were some obstacles in running the welding workshop of PVHS 2 of Tulungagung, one of which was the product marketing process. This was supported by the fact that the workshop had no regular schedule to keep due to a limited number of received. There has not been a comprehensive evaluation of the low productivity and the limited number of costumers of the welding workshop presumably resulting from its bad marketing strategies and the poor quality of its products. Needless to say, further research on this poor condition is highly needed.

However, the data about the 2019 alumni of PVHS 2 of Tulungagung shows that 35% of those alumni has managed to establish their own business ventures. This suggests that the creation of the production unit as a solid base of training and service is effective in capturing students entrepreneurial spirit, of which the high number of the alumni of PVHS 2 of who have taken their entrepreneurial actions is indicative, especially if compared with the result of the research by Rokhimah & Margunani (2017) conducted at PVHS I of Demak showing that only 7,6% (26 alumni) of a total of 339 alumni who undertake entrepreneurial endeavors.

CONCLUSION

Developing students' entrepreneurial flair which can help build their future career after graduation can be through making educational reforms and promoting educational innovation which can stimulate students' creativity. Students' involvement in practical activities in production units will allow them to collect, proceed, and utilize reliable information and be more likely to have entrepreneurial intentions, which will help them enjoy technical superiority in the business world. Those students with entrepreneurial intentions will quickly seize opportunities and eagerly learn anything related to business development.

Based on the interviews with the 2019 students of PVHS 2 of Tulungagung majoring in welding engineering, the implementation of the learning model for the production model of the welding workshop resulted in the fact that 55,88% of them were ready to take entrepreneurial actions. However, the implementation left rooms for evaluation and improvement, especially in marketing strategies, students' involvement, and financial administration. The problem of the low level of students' involvement can be overcome if the marketing strategy works so effectively that the workshop will get bulk orders.

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