

An Improving of the Soft Skills and Hard Skill Abilities for Vocational High Schools Students in Learning Process on Service Production Units

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Abstract: Vocational High School is expected to produce graduates who have hard skills and soft skills ability that fit the needs of the business community were able to develop the local advantage and global competetion. One of the efforts to increase the ability of vocational students is to develop a service unit production unit as part of the learning process in vocational high school. Model development Service Production Units (SPU's) integrates learning activities and production activities/services are expected to improve the hard skills and soft skills of students as well as produce the goods/ services for consumers. The process of teaching and learning activities in the development of the service Production Units using the project learning model. Learning models project more emphasis on students' independence, although still not be separated from the guidance of teachers to finish the project work as goods/service. The results showed that the learning model projects in the activities of Service Production Units has increased the ability of soft skills, that is: a) marketing capability (search for consumers), b) teamwork, c) approach to communication on the consumer, and d) the ability to analyze the value of the work. While the ability of hard skills was capable of solving the real problems of work (products / services), which according to expectations of consumers.

Keywords: Vocational High School, Soft skills and hard skills, Service Production Units, project learning model

1. Preliminary

Increasing national development requires superior human resources, namely having the ability of knowledge and skills as well as soft skills as appropriate for the development of science and technology. The problem of secondary school graduates in Indonesia is that every year an average of 3.3 million while the absorption of universities is 1.7 million so that the other 1.6 million will become laborers, but in reality the majority of graduates are not ready to work (Airlangga Hartarto, 2017). One of the causes is the lagging behind the practice equipment that is owned by the development of science and technology. One of them is that there needs to be a synergy between vocational schools and industry.

The lagging equipment practice with industrial development has caused vocational high school graduates to be incompatible with the needs of the industrial workforce, there are links that do not match between vocational high school workforce with industry-required qualifications. This is a challenge for schools to produce graduates who have competency skills in operating and overcoming problems of rapid technological development. The effort to overcome this condition is to provide vocational high school graduates with skills (hard skills) and soft skills.

Australian, European and American countries in preparing workforce make learning programs that provide skills and soft skills. The Australian Industry Group (AIG, 2006) maintained that prevailing skill gaps were limited to the development of new products and processes which would impact on future levels of competitiveness. Australia's aging workforce, also present in the UK and USA, will mean increasing reliance on graduates' skills and knowledge, as executive and operational know-how is lost through retirement (Larkin, 2006). (Denise Jackson, 2008)

The competencies have been categorized into (a) the task requirements of graduate positions, with a job description, and (b) personal characteristics deemed important by employers (Denise Jackson, 2008). Meanwhile the labor competency standards in Germany are divided into three (3) categories, namely: subject-competence ('Fachkompetenz'), personal competence ('Personalkompetenz') and social competence ('Sozialkompetenz'). (T. Weigel 1, M. Mulder 2 and K. Collins, 2007: 6). Based on these two opinions, the competency capabilities possessed by vocational high school graduates are the ability of expertise, personal and social competencies that are formed through education and training while studying at school.

Roselina Shakir (2007) states that human resource development includes 7 soft skills abilities, namely communication skills, critical thinking, collaboration, lifelong learning, managerial ability, entrepreneurship, ethics and morality and leadership skills. Meanwhile, James J. Heckmana and Tim Kautz said (2012) states that soft skills can predict life success because of success in productivity and improvement in soft skill abilities according to workplace needs that are considered public as effective portfolio assessments. These two opinions show the importance of soft skills for individual development in the workplace.

Government Regulation Number 19 of 2005 concerning National Education Standards (SPN), article 19 becomes the basis of the education process, which is to provide education in an interactive, inspiring, fun, challenging, motivating students to actively participate, and provide sufficient space for initiatives, creativity, and independence in accordance with the talents, interests and physical and psychological development of students, provides exemplary with an effective and efficient learning process. This can be interpreted that education is carried out thoroughly which

includes cognitive, psychomotor and affective aspects. Cognitive and psychomotor aspects as hard skill competencies, while affective abilities or attitudes are included in soft skills competencies.

Practical activities as part of the teaching and learning process in vocational high schools as a provision to deal with work in the industry, but in its implementation cannot resemble industrial conditions. to students. The existence of a production unit provides an opportunity for teachers to develop a comprehensive teaching and learning process in instilling knowledge, skills and work attitudes through the production activities of goods and services needed by consumers. Learning activities can be developed learning methods that are integrated with material according to syllabus can be done by project method or inquiry method.

Utilization of production units in learning systems in vocational high schools in other countries is not new but has become a government program in preparing workforce in the industry. Vocational Education and Training in Austria (Tritscher-Archan, S., Petanovitsch, A. 2016) develops three types of programs, namely: (1) programs under the management of the University that produce professional-level diploma qualifications with work-based and compulsory work-based learning models at the company; (2) programs that produce a level of skilled workers, with work-based learning models in schools and compulsory internships in companies; and (3) school programs as part of an internship. One or two days per week or a total of 8 weeks in school. Work-based learning cannot be implemented if the school does not have a work program as a representation of industrial activities.

Research Methods

This research was conducted at the Medan State Vocational High School 2 and the State I Percut Sei Tuan Deli Serdang Vocational Middle School, using a survey research model. Collecting research data using interviews, observation and documentation. Data responses and expectations of teachers and school employees who have become consumers of the production unit program activities use interviews, assess the ability of soft skills and skills of students who carry out production unit activities using assessment sheets, observations and interviews. Data analysis was performed using descriptive quantitative and qualitative statistics with the analysis of Mill and Hubermen

2. Results and Discussion

Hard skill ability in activities in production units in vocational high schools is the ability of students to complete the work of production units according to the standards set by the school and service to consumers. Hard skill capabilities include: search for damage to equipment, measurement of electrical quantities, neatness of work, accuracy / correctness of work, and the feasibility of the final product test. Assessment of hard skill ability using assessment sheet instruments and observation sheets. Descriptive statistical analysis of students' hard skills using the SPSS 17. Meanwhile the results of the descriptive analysis of the activities of the production unit through

assessment and observation are shown in tables 1, 2 and table 3

Table 1: Descriptive statistics

Information	Variabel	
	Implementation of Production Unit Activities	Student Production Results
N	Valid	62
	Missing	0
Mean	26.8065	23.0645
Median	27.0000	23.0000
Mode	30.00	22.00
Std. Deviation	3.49162	3.92082
Variance	12.191	15.373
Range	14.00	24.00
Minimum	18.00	8.00
Maximum	32.00	32.00
Sum	1662.00	1430.00

Table 2. Implementation of Practice

Number	Criteria	Range of Values	Range of Values	F	F Relative
1	Very good	M +2SD Up	33,8 Up	0	0 %
2	Good	M+1 SD s/d M +2SD	30 – 33,8	19	30,6 %
3	Enough	M+1sd s/d M-1 SD	23,3 – 29,98	29	46,8 %
4	Less	M-1 SD s.d m-2 SD	19,8 – 23,3	13	21 %
5	Not Good Enough	M-2SD Below	19,8 Below	1	1,61 %

Table 3: Assessment of Student Work Results

Number	Criteria	Range of Value	Range of Value	F	F Relative
1	Very High Quality	M +2SD Up	30,86 Up	2	3,2 %
2	Quality	M+1 SD s/d M +2SD	27,01 – 30,86	3	4,8 %
3	Quality Enough	M+1sd s/d M-1 SD	19,14 - 27,01	47	46,8 %
4	Less Quality	M-1 SD s.d m-2 SD	15,22 - 19,14	9	15 %
5	Not Qualified	M-2SD Below	15,22 Below	1	1,6 %

The results showed that the average value of the implementation of production unit activities mostly tended to be sufficient and good, that is equal to 77.4%, while the value of student work results showed sufficient (46.8%), quality (4.8%) and very high quality (3.2%). The results of these studies indicate that the ability of students to carry out service work in the production unit is included in the good category. The level of students' ability to carry out production unit activities based on the results of this assessment has been classified as good even though it has not been maximized. This is because in the execution of work students work on something that is sometimes not found in theory, because students face real work problems. Competencies formed in the teaching and learning process in the production unit. Hensen, K.A ; Hippach-Schneider, U. (2016) states the competencies are developed through learning and development processes. They are learning in work and everyday life environment.

New experiences in dealing with real work make students' knowledge increase, namely cognitive, psychomotor (skills), and affective (work processes). This is in accordance with Experiential learning theory Kolb. Kolb, (Kolb, Boyatzis, and Mainemelis, 1999: 2) states "Experiential learning theory defines learning" the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experiences.

Other student abilities related to work processes are soft skills that include team work, communication skills, and interpersonal relationships. The soft skills of students in this study include: a) communication skills, b) ability in team work, c) commitment in work, d) time management, e) creative thinking, and f) stress management. Data about students' soft skills in when carrying out activities unit production is collected through observation and in-depth interviews. The results of research on student soft skills are shown in table 1

Table 1: Soft Skill Capabilities of Production Unit Implementing Students

Nu	Aspect	Indicator	Result
1	Communication skills	Able to discuss, express opinions and ask questions	Students are able to collaborate well in completing work, this is shown when students face difficulties, so that they cannot be solved by themselves, they are reluctant to discuss with friends and accompanying teachers.
2	Ability in team work	Team collaboration in work	In working students are able to collaborate with teams in solving problems and completing work. Collaboration is done with the division of tasks and in completing work
3	Commitment to work	Real do work	Very well this is shown in the effort to complete the work until it is completed and as quickly as possible by trying to make use of the time it has such as when entering in the afternoon students arrive early and vice versa when the morning entry schedule will finish work after school
4	Time management	Using time effectively, can use time	students are able to do work seriously until the work can be completed according to the target or the needs of consumers. Seriousness of work is indicated by the effort to get the job done as quickly as possible on the sidelines of study time such as before the lesson begins (if entering noon) and after class hours (when entering in the morning).
5	Leadership	Encouraging friends to be active, helping friends overcome problems	The ability of students to find friends who can be invited to carry out production unit activities and the ability to manage the time of activities so as not to interfere with the main learning activities
6	Creative Thinking	Find new ways	Creativity shown as a result of students' thinking is to find ways to find damage and overcome or repair damage that occurs in the tool / item.
7	Stress management	Management	The results have not yet been seen because during the course of carrying out the work there are students who have not received pressures that make motivation low. This is because there are not many jobs handled (2 consumers) and students feel they have no difficulties

Based on the results of the above research, it is shown that students' soft skills are largely fostered in the activities of the production unit. This will be a major capital base for achieving success for vocational high school students after graduating both as laborers and as entrepreneurs. These soft skills when formed continuously during education in school will become attached and relatively stable in students. Barrick et al. In Jozef Bambang Tri Joga, et al. (2015) stated that there are five factors of personality that describe the unique characteristics of individuals who are unique and relatively stable, namely:

- 1) Personal Resilience as indicated by persistent, systematic, abstinence, high motivation and resistance to workload.
- 2) Extraversion that is characterized by effective relationship building and communication skills, is good at getting along, working together, active, prioritizing cooperation, attractive and assertive (open).
- 3) Hospitality which is characterized by a friendly, humble attitude, does not want to show its strength, is easy to sympathize, warm, trustworthy and polite.
- 4) Stable emotion characterized by a calm attitude, not easily anxious and stressed, easy to accept, not easily angry and confident.
- 5) Flexibility to experience that is characterized by having an imaginative, challenging, anti-establishment, creative, critical and having great curiosity.

Students' soft skills and hard skills have an effect on their ability to face technological developments. Students who have soft skills are easily developed because of their ability to behave. As stated by Henen, K.A, Hippach-Schneider, U. (2016: 12) Well-trained workers are the most important fields for new technologies and for the transfer of new areas and fields of work.

Learning activities in the production unit is the actual learning process for vocational high school students because students face actual work problems, so that in solving these problems students can experience success or not succeed. Even so in students can increase knowledge and skills and mental attitudes in dealing with success and unsuccessfulness. Neill (2005) says that learning is a process of negative or positive experience that has occurred and the accumulation of both experiences forms new experiences. Enjoyable experiences such as success in completing learning tasks become positive experiences. The failure to learn becomes a negative experience, so students need to correct mistakes with perseverance and kesabara. The role of the teacher in this case is to encourage and direct students how to correct mistakes made.

Likewise the implementation of learning in the production unit provides work experience for students to be more dynamic because they will face learning situations that always change according to the problems at hand. Learning

by providing opportunities for students to do learning tasks that are authentic in nature, which is done in real work situations. This is in accordance with the philosophy of constructivism, namely "the theory suggests that humans construct knowledge and meaning from their experiences" (Bada, 2015). Based on this theory the activities and implementation of activities in the production unit cause a person's experience to develop, so that more often students interact with the object of learning with situations and conditions as well as in the industry will provide a lot of experience and knowledge.

Likewise, increasing student creativity in solving work problems will also experience an increase in the elements of knowledge and skills in the activities of production units forming reciprocal relationships, namely students become more dynamic and creative because students learn directly in situations such as in the industry. Engeström and Gröhn (2004 : 1) in workplace learning theory states "transfer of learning takes place through interaction between activity systems. The school and workplace in collaborative interaction, which both activities learn something from each other.

There is a difference between completing work tasks in production unit activities different from practical learning, because students are required to solve work problems in accordance with consumer demand to repair equipment or material damage. This provides opportunities for students to do real work. Based on this, learning will provide opportunities for students to do learning tasks that are authentic in nature, which is done in real work situations.

Thus the learning outcomes obtained in the production unit activities provide comprehensive learning both in the development of students' knowledge and skills and in the development of soft skills. Soft skills are the qualities or social skills we all possess. They are the interpersonal skills we have and use when working with others — how we interact with our peers; how we network and communicate; how do we empathize with others; our integrity, optimism, and enthusiasm; how we formulate important problems and find solutions for them (Sastry Pantula, 2010).

Soft skills in the world of work are very important in developing skills. The results of the study of Frederick F. Patacsil and Christine Lourrine S. Tablatin (2017) concluded that the teamwork and communication skills are very perceived by IT graduates as perceived. Production unit activities form cooperative behavior among students one with other students, because working on a job requires cooperation. In addition, cooperation can work well if there is a good collaboration between student group members.

Based on the above, the ability of hard skills and soft skills for graduates of vocational high school students becomes important, because in the recruitment of workers the quality of the ability of prospective workers is a major consideration. In addition, in the global labor market system, competition for quality labor between countries in the world is open. Thus the development of production units in vocational high schools is an important program in improving students' hard skills and soft skills.

3. Conclusion

- 1) Implementation of activities in the production unit provides a comprehensive learning experience
- 2) Increasing students' hard skills and soft skills increases because students: (a) learn in real conditions; (b) learning to cooperate in teams; (c) looking for and serving consumers as an element of marketing; (d) carry out production activities; (e) knowing how to market production or look for market opportunities; (f) training the discipline and intensity of student learning; and (g) can evaluate product quality whether or not the community is interested.
- 3) The teaching and learning process in unit production activities is an application of the concept of situated cognition, situated learning and experiential learning.
- 4) Learning activities in the production unit enhance students' soft skills that are needed in the industry

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