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INTEGRATION OF PROJECT-BASED ENTREPRENEURSHIP AND PRODUCTIVE PRACTICAL LEARNING IN VOCATIONAL HIGH SCHOOLS

Bayu Gilang Purnomo and Thomas Sukardi
Post Graduate School, Universitas Negeri Yogyakarta, Indonesia
E-mail: bayugilangpurnomo@gmail.com

ABSTRACT

Unemployment rates producing by vocational high school (VHS) is still high. To overcome this problem, it is necessary to develop an entrepreneurship learning model in accordance with students' skills. This study aims to: (1) develop project-based entrepreneurship learning media integrated with productive practical learning in VHSs; (2) design project-based entrepreneurship learning integrated with productive practical learning which had the criteria of validation, effectiveness, and practicability. The research procedures consisted of analysis, design, development, implementation, and evaluation (ADDIE) model. The product of the learning model development was validated by experts. The subjects of the research involved eleventh grade students of automotive engineering study program in the second semester, entrepreneurship teachers and automotive engineering teachers in VHSs. The products of the study consisted of: (1) a guided learning book and learning media (lesson plans and learning assessments); (2) the teachers' and students' positive and objective responses toward the implementation of the learning model which was proved by their comments that the developed learning model fulfilled the criteria of validation, effectiveness, and practicability to be implemented in VHSs.

Keywords: entrepreneurship, learning model, productive practical, project based learning

INTRODUCTION

Vocational high school (VHS) is one of the high school education levels which focuses on developing the students' competence to be able to do certain work fields. VHS education emphasizes the learning processes which train the learners to be ready to work and to be a professional. However, the VHS located in the suburb faces some obstacles, such as the limitation of networking and supporting from the government and the industrial fields in employing the vocational high school graduates. In this case, many companies assume that the graduates of VHS have not fulfilled the qualification standard to be an employee yet. The main obstacle concerned by the companies in employing the VHS graduates was related to the soft skill mastery. Indeed, it is needed a strategy in the learning processes and training in vocational high schools which direct the development of strong characters and soft skill in order to prepare the students to be ready to face challenges and global threats [1].

Essence of vocational education involved teaching the habit of thinking and working through repeated training. There are three main habits that must be taught: (1) the habit to adapt with the workplace environment, (2) the habit in doing the standard operational, and (3) the thinking habit [2]. Vocational education should also provide an experience to work effectively and efficiently, have knowledge and psychomotor skills, be aware of the global technology development, improve its quality, and maintain the knowledge and skill based on the workplace needs [3].

The organization of vocational education and the learning processes in VHSs refers to the development of three main competences: (1) normative; (2) adaptive; and (3) productive. The learning of productive subjects becomes the important component in the organization of VHS learning. The productive subject learning has two main characters that are the competency-based and productive-based learning. In general, competency-based is a learning process in which the plan, organization, and the assessment are

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based on the competences mastery set by the VHSs with the industrial field or institution. On the other hand, the productive-based learning is the learning process of skill or competence which is planned and operated based on the procedure and standard operational in the workplace (real job) to produce the outcome which suits the market needs.

A meaningful learning has to be done by every teacher to motivate the students' learning [4]. When the students learn something and can find the meaning of their learning, it will make them having a reason to study [5]. In the learning of vocational education, the context and the condition of learning especially the productive-based learning should follow the method, strategy, and technique which are similar to the real workplace. Each individual is trained to cooperate in a solid team in order to do certain work as the outcome of the practical learning. The soft skill mastery in the practical learning must be optimized in directing an outcome based on market demand.

Entrepreneurship education in Indonesia still gets less attention from the education stakeholders and the society. Many teachers pay less attention to the development of the students' attitude, passion and behavior of an entrepreneur, both in the VHS and in the professional education school [6]. Entrepreneurship appears when someone is brave enough to improve his new businesses and ideas [7], [8]. The entrepreneurship processes include all functions of activities and actions which are related to the gain of chances and creations of business organization [9], [10].

The characters of an entrepreneurship as someone who has self-confidence, has the orientation of tasks and results, is brave to take risks, has leadership ability, and has vision and authenticity [11]. Some methods which are appropriate with the entrepreneurship learning in vocational high school: (1) problem-based learning; (2) project-based learning; (3) work-based learning; and (4) service-based learning [12]. Project-based learning offers some advantages for the students and the teachers. It is a learning model which uses activities or projects as the learning processes to achieve the attitude, knowledge and skill [13]. Project-based learning is a learning approach which gives the students the freedom to plan their own learning activities and to do the project collaboratively, at the end it results on an outcome which has market value [14].

The projects used in this study were automotive tune-up service and business proposal in entrepreneurship subject learning which is integrated to the practical subject learning. The results of this study can be an input for VHS teachers about a suitable learning model applied to entrepreneurship learning and productive practice learning to improve student attitudes, skills and entrepreneurship in accordance with the competence of practice. In addition, as an input for schools in improving the quality in the learning process.

METHOD

This study was research and development strategy that is a research to develop certain product and to examine the effectiveness of that product. The aim of this study was to develop project-based entrepreneurship learning model integrated with productive practical learning in VHS at automotive engineering study program. The development steps used analysis, design, development, implementation, and evaluation (ADDIE) model development which was proposed by Branch in Sugiyono [15]. The steps consisted of analysis, design, development, implementation, and evaluation can be illustrated in Figure 1.

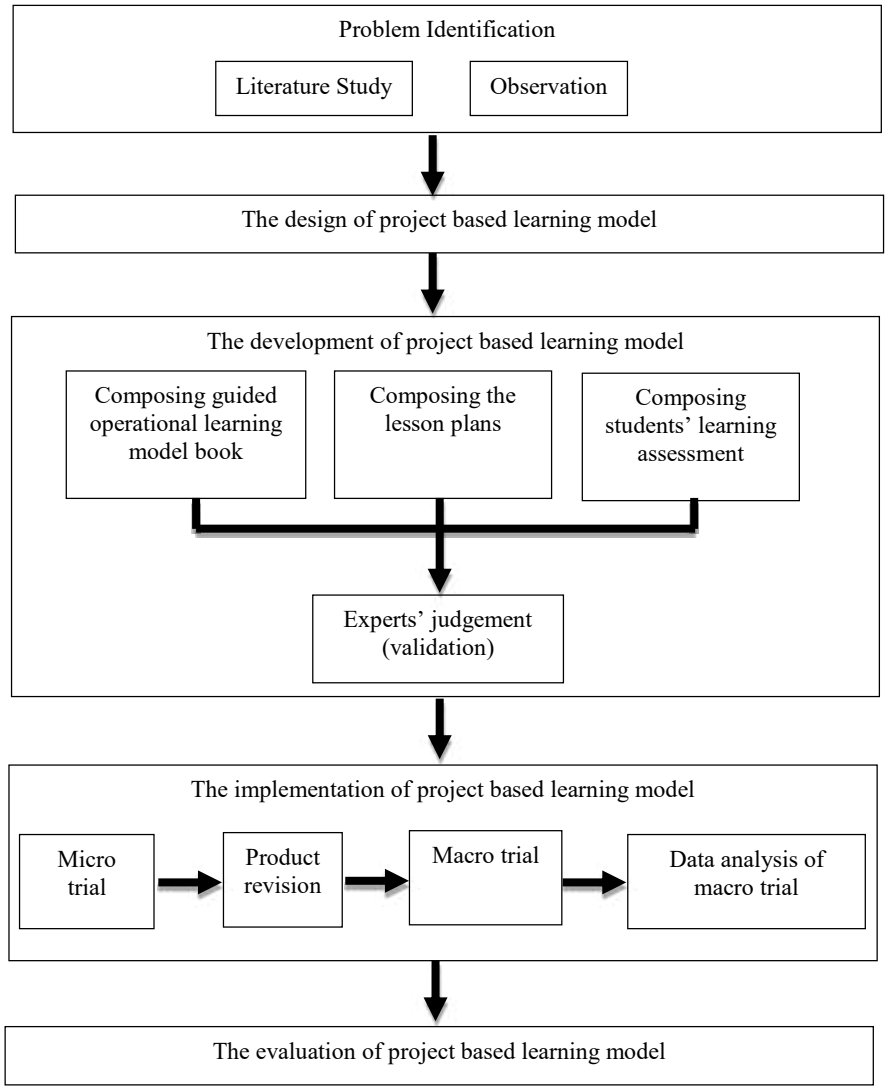

Figure 1. Research Procedure

To check whether the developed learning model fulfilled the criteria of validation, practicability, and effectiveness, the product trial had been conducted twice: micro trial and macro trial. Before the products were tested, the products and the intruments were validated by two experts to know whether the learning model prototype and its instruments were appropriate to be implemented or not.

The research setting was automotive study program at private and public VHSs in Cilacap Regency. The micro trial was performed at eleventh grade students of automotive engineering at VHS, namely *Sekolah Menengah Kejuruan* (SMK) Negeri Karangpucung. The macro trial was done at the eleventh grade students of automotive engineering study program in three schools, including SMK Negeri 1 Wanareja, SMK Diponegoro Majenang and SMK Boedi Oetomo 2 Gandrungmangu. The micro and macro trial were conducted in the automotive machine maintenance subject and entrepreneurship subject. The trials were conducted in two meetings by the automotive machine maintenance teacher and the entrepreneurship teacher.

The research instruments consisted of product assessment format and questionnaire of model effectiveness. The first one was used to score the learning model and learning media whether they were feasible to be implemented or not. The second one was used to know the

validation, effectiveness, and practicability of the developed learning model.

The data were analyzed by qualitative descriptive by writing the logical narration based on the purpose of the research. The data analysis of validation, effectiveness, and practicability used the criteria of media quality categorization adapted from a model proposed by Azwar [16] presented in Table 1.

Table 1. Criteria of Media Quality Categorization

No	Interval	Category
1	$3.5 \leq M \leq 4.0$	very valid
2	$2.5 \leq M < 3.5$	valid
3	$1.5 \leq M < 2.5$	less valid
4	$0.5 \leq M < 1.5$	not valid

Explanation:
M = the average score of every scored aspect

RESULTS AND DISCUSSION

In the analysis phase, data collection related to: (1) the learning model and method of practical productive learning and entrepreneurship learning in VHSs which were commonly and the appropriate learning model to be implemented in VHS, (2) competence base and basic competence of entrepreneurship subject and automotive machine maintenance practical subject in VHS were conducted.

There was lack of students' practical competence especially automotive engineering and the entrepreneurship learning in the VHSs. The teacher still used lecturing method in delivering the learning materials. The basic competences that would be developed were explained in the detailed indicators as shown in Table 2.

Then based on the learning needs and competency needs, the basic instructional design of the development was made. The basic instructional design of the development used the System Instructional Development (SCID) model [17]. It was started by planning the purpose of the learning and developing the learning model and the research instruments. The learning model was designed in the form of guided learning model book, lesson plans and students' learning assessments. Moreover, the research instruments consisted of questionnaire of the model effectiveness which involved the teacher and students' responses. The instruments of the research firstly were validated conceptually by the education expert to check the reliability of them before they were used. The validation involved two experts. Table 3 shows the feasibility of the research instruments.

Table 2. The Developed Basic Competences

Competence base	Basic competence	Indicators
Evaluating the result of periodic maintenance of automotive machine	Executing periodic maintenance of automotive machine	1. able to do periodic maintenance of automotive machine 2. able to fix the minor breakage of any automotive machine
	Developing entrepreneurship character	1. able to implement creative and innovative thinking 2. able to execute discipline, honest, and high work ethos attitude in daily life.
Planning micro business	Analyzing business chances	1. able to analyze the market potential 2. able to determine the business type
	Creating business proposal	1. able to plan the business based on the market analysis 2. able to create business proposal based on study program

Table 3. The Result of Reliability Judgment

Instrument	Judgment result from the expert		Freq. F	Freq. NF	Conclu-sion
	1	2			
Guided book learning model assessment form	F	F	2	0	F
Lesson plan assessment form	F	F	2	0	F
Students' assessment form	F	F	2	0	F
Model effectiveness questionnaire (teacher's response)	F	F	2	0	F
Model effectiveness questionnaire (students' response)	F	F	2	0	F

F = Feasible
NF = Not Feasible

Based on the data in Table 3, it can be concluded that all instruments can be used to assemble the data related to the validation, practicability, and effectiveness of the developed learning model. The results of media assessment and the learning media can be seen in the Table 4, 5, and 6. From the data analysis of learning model assessment and learning media by two teachers, it can be concluded that the assessment results are categorized as good and can be used in the study. The assessment results which were given by the teachers and 31 students in the micro trial show that the implementation of project-based entrepreneurship learning model integrated with productive practical learning was effectively developed and used.

Table 4. Data Analysis of Learning Media Assessment

Scored Components	Score Freq				Criteria
	1	2	3	4	
Supported theory (2 items)	0	0	2	2	good
Model development principle (5 items)	0	0	6	4	good
Model user guidance (2 items)	0	0	2	2	good
Model operational mechanism (5 items)	0	0	5	5	good
Students' assessment guidance (3 items)	0	0	0	6	Very good
mean score	3.58				Very good
General assessment	Can be used without revision				

Table 5. Data Analysis of Lesson Plan Assessment

Scored components	Score freq				criteria
	1	2	3	4	
Terms of reference aspect (2 items)	0	0	0	4	Very good
The indicator of basic competence achievement (8 items)	0	3	9	4	good
Learning materials and activities (2 items)	0	0	2	2	good
The language usage (4 items)	0	0	3	5	Very good
Time (2 items)	0	0	3	1	good
Mean score	3.48				Good
General assessment	Can be used with minor revision				

Table 6. Data Analysis of Learning Media Assessment

Scored components	Score freq				criteria
	1	2	3	4	
Guidance aspect (2 items)	0	0	0	4	Very good
Terms of reference aspect (4 items)	0	0	4	4	good
Language aspect (2 items)	0	0	3	1	good
Mean score	3.58				Very good
General assessment	Can be used without revision				

Figure 2 shows the data analysis results of the model effectiveness.

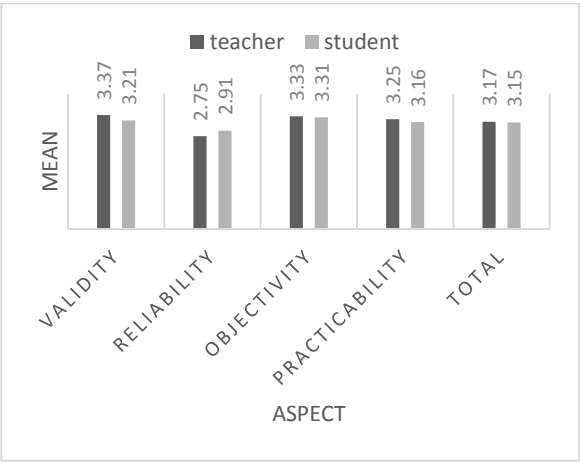

Figure 2. Data Analysis Results of the Model Effectiveness (Micro Trial)

The assessment results which were given by six teachers and 83 students in the macro trial show that the implementation of project-based entrepreneurship learning model integrated with productive practical learning which was developed can be used effectively. Figure 3

shows data analysis results of model effectiveness (macro trial).

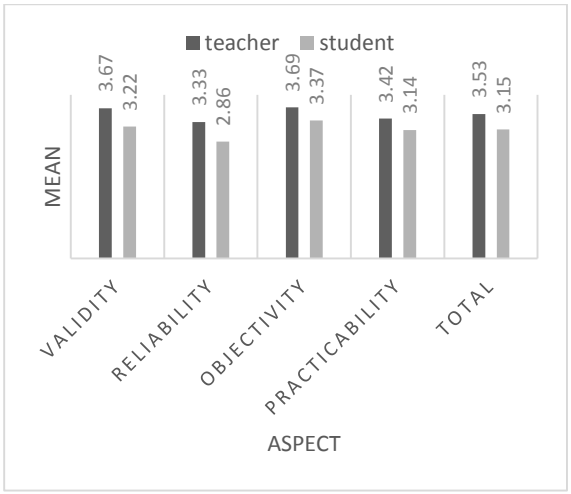

Figure 3. Data Analysis Results of Model Effectiveness (Macro Trial)

Indeed, the teacher and students' assessments toward project-based entrepreneurship learning model integrated with productive practical learning, both in micro trial and macro trial, are that it is effective to be implemented in vocational high schools.

CONCLUSION

Based on the description of the development of the research, the results of the study show that: (1) the product of the project-based entrepreneurship learning model integrated with productive practical learning development is model guided book and learning media. The contents of the book include model guidance that consists of supported theory of model development, learning operational mechanism, and students' learning assessment. Moreover, the contents of the learning media involve lesson plan and the evaluation of learning outcome assessment, (2) the validation assessment results show that all experts stated that the developed learning model and the learning media fulfill the criteria of valid to be implemented in VHSs. The data analysis of teachers and students' response toward the questionnaire, both in the micro trial and macro trial of the developed learning model, shows that both the teachers and the students have positive responses on the learning model and that both the teachers and the students objectively give opinion that the developed learning model is effectively and practically implemented to improve the students' practical achievement and entrepreneurship.

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