

LEARNING OUTCOMES WITH THE APPLICATION OF PRODUCT BASED ENTREPRENEURSHIP MODULE IN VOCATIONAL HIGHER EDUCATION

Asmar Yulastri
Universitas Negeri Padang
asmar@gmail.com

Hendra Hidayat
Universitas Bung Hatta
hendrahidayat@bunghatta.ac.id

Ganefri
Universitas Negeri Padang
ganefri1@gmail.com

Fuji Edya
Universitas Negeri Padang

Syaiful Islami
Universitas Negeri Padang

Abstract

This paper aims to explore and explain the application entrepreneurship module based products in higher vocational education. Methods of the development of this research using stages of Analysis, Design, Development, Implementation (ADDI). Subjects were students who are taking entrepreneurship courses in higher vocational education. The technique of data analysis was the learning outcomes of the application of product based entrepreneurship module which consisted of, (1) the results of the cognitive aspects of learning achievement test used in the form of multiple-choice tests; (2) the study results in the affective aspects obtained from the measurement results against predefined criteria, with special sections that assess students' attitude during the process and attitude of learning, particularly in the work of making a product; (3) the results of study on psychomotor aspect views from the observation of activities and work activities done by the students. Based on cognitive aspects of learning outcomes for entrepreneurial learning showed that test before using the product based entrepreneurship modules have an average of learning outcomes is quite effective and after using the product based entrepreneurship modules have an average is the effective category. The average results of student learning in psychomotor and affective aspects before using the module are quite effective and after using the product based entrepreneurship module psychomotor and affective aspects have an average result of learning is very effective. It can be concluded that learning with product based entrepreneurship module can improve student learning outcomes in higher vocational education.

Keywords: *Entrepreneurship Module-Based Products, Cognitive, Affective and Psychomotor*

INTRODUCTION

Higher education serves to develop the ability and character development, as well as a dignified civilization in order to educate life of the nation. Another function is to develop innovative academicians, responsive, skilled, competitive, and cooperative through the implementation of the three responsibilities. Higher educations also serve to develop a science and technology by observing and applying the values of humanities. One part of higher education is the education of vocational education either at the level of technical colleges, institutions and universities. Vocational education also has a mission to prepare students to be able to face changes in their community. In addition, vocational education is required to deliver a competent workforce in order to increase productivity and efficiency as well as the readiness of the international labor market competition in the era of globalization.

For the achievement of the learning process, as stipulated in Government Regulation No. 32 of 2013 and Law No. 20 of 2003 section 15, it needs components of learning that can support the learning process. One important part of learning is learning modules and devices in the learning process in support of education in order to run effectively and efficiently. Learning modules provide an important role in learning, not least learning modules and devices in entrepreneurial learning that does not yet exist and is very far from the learning goal itself so that the output and outcome of college graduates are less qualified. Difficulties in teaching students in entrepreneurship courses must have met educators in higher education and in school, that learners tend to complain that the theory of entrepreneurship was boring, entrepreneurship courses were boring, as well as all the theory and entrepreneurship courses, may be irrelevant to the condition that occurred in the field (Fiet, 2000). In addition, as educators can also be boring and irrelevant in the eyes of students. Students may not understand that the pedagogy of entrepreneurship can be very interesting. Unfortunately, the fact that there is a process that is used to teach the theory of entrepreneurship can be tedious. Such as, the learning process will be tedious when what would have easily predicted by students.

Good entrepreneurship theory can always pass the test of the application and can be applied in the field.

Almost all universities have entrepreneurship courses but not all of college graduates are capable being an entrepreneur, not least of the vocational graduates. In addition, graduates of any college graduate diploma and competency rely solely on their respective fields to look for work, but also did not get a decent job. If this condition is left unchecked then the college will contribute to the increasing of educated unemployment, based on data owned by the Central Statistics Agency (*Badan Pusat Statistik*) in 2016 and 2017 on Unemployment Rate (TPT) of university graduates start of February 2016 as many as 7.02 million people or 5.5 percent in August 2016 as many as 7.03 million people, or 5.61 percent, and the last in February 2017 as many as 6.68 million people, or 5.33 percent, figures show a decreasing of unemployment despite very little, but still intellectual unemployment rate of graduates of higher education is very worrying. This happens is caused by various factors, one of them the ability to survive in a society with entrepreneurial competence possessed still lacking. Development of higher education that is equipped with a highly entrepreneurial competence spearhead in addressing educated unemployment (intellectual).

Educated unemployment is certainly due to various factors such as lack of jobs, the growth of higher education and study programs so rapidly, and the lack of competence of the graduates or the incompatibility of competencies to the needs of users of labor, and the ability to survive in society with entrepreneurial competence possessed still less, development of vocational education which is equipped with a highly entrepreneurial competence spearhead in addressing unemployment of graduates educated both non-vocational and vocational graduates. The process of vocational education at the college not just produces labor and market-oriented vocational however expected to graduate from college are able to develop competency-based individuals in the field of entrepreneurship, which is expected that the graduates of vocational colleges graduates are able to produce many young entrepreneurship.

With the creation of engineering entrepreneur directly provide individual improve-

ment and repair the nation's economy in general. In addition, entrepreneurship education will help to influence culture and build economic growth (McKeown, Millman, Sursani, Smith, & Martin, 2006; Matley, 2005a, 2005b; Kirby, 2004; McMullan & Long, 1987).

Based on field observations conducted by a lecturer of entrepreneurship and observe the learning process, found obstacles in entrepreneurship learning among others: (1) one of the causes have not pulled this course is the unavailability of learning modules that can support the success of the process entrepreneurial learning, (2) the teaching materials used lecturers during the learning process, namely books entrepreneurial scope of the material has not fulfilled all the basic competencies that exist in the syllabus, (3) the learning process is performed on entrepreneurship courses are still focused on mastering theory and administration skills not exhaustive, only in the form exercises that do not lead the student to produce a business plan, (4) the final project of entrepreneurship courses are still not represent the rest of the material that has been described.

Associated with one of the obstacles encountered during the observation, a business plan aimed as a reference for students in new businesses when they finish the study, the fact still cannot be made by the student. This is certainly contrary to the learning outcomes of the entrepreneurship courses. After attending the course entrepreneurship is expected that each student is able to create a business plan as a provision for them in facing the business world. The fact that happened on the field, the implementation of the science of entrepreneurial learning process has not been implemented optimally. Based on the explanation of the constraints in entrepreneurial learning, it becomes the main reason for the development of entrepreneurship module based products.

With the conclusion of products based entrepreneurship module, it is expected that students are able to design a business plan in order to create new job opportunities in accordance with their fields. Therefore, there should be a development of entrepreneurship module-based products, so that later in the process of entrepreneurial learning. Based learning products are able to guide and lead

the student to produce a business plan as the ultimate goal of the learning process.

One of the learnings that are relevant to the vocational field is production-based learning, this model facilitates the learner to think, analyze and capable of producing the product (Ganefri & Hidayat, 2015; Kusumaningrum, Ganefri & Hidayat, 2015; Kusumaningrum, Hidayat, Ganefri, Anori, & Dewy, 2016; Hidayat, 2017a; Ganefri, Hidayat, Kusumaningrum, Dewy & Anori, 2017; Yulastri, Hidayat, Ganefri, Islami, & Edya, 2017; Ganefri, Hidayat, Kusumaningrum, & Mardin, 2017; Hidayat, 2017b). Based learning with this product allows it to be applied in the field of vocational entrepreneurial learning, teaching and learning entrepreneurship so that students can master the material of entrepreneurship with the concept of learning by doing approach to a product-based learning model. Not only learning-based product that also has to do with entrepreneurship but the reinforcement learning models insightful student vocational life skills entrepreneurship is also strongly associated with entrepreneurship (Mursid, 2017).

The purpose of this study is limited to the implementation of results product based entrepreneurship module which is assumed to be able to help to make good changes to student learning outcomes and active students in vocational higher education.

Module

A module is a unit of the teaching program arranged in specific shapes for learning purposes. Russel (1994) explains that "teaching module is a package that contains a lesson unit concept". The module is a package of lessons individualize teaching programs by allowing learners to master one set of lesson content before switching to the other units of the content.

Definition module is also disclosed by Arai (2009) states, "a module is a complete unit and stand-alone and consists of a series of learning activities designed to help students achieve a number of objectives were formulated specifically and clearly". According Sudjana & Rivai (1997) describes the module is defined as the smallest unit of the teaching and learning program in detail to explain: (1) The purpose of instructional be achieved. (2) The topic will be the basis of the learning process. (3) The main points of the material

being studied. (4) The status and function modules unity of a broader program, (5) The role of the faculty in teaching and learning, (6) The tools and resources that will be used, (7) The activities of learning to do and lived pupil sequentially, (8) Gazette the work to be completed by the student and, (9) the evaluation program will be implemented.

Limitations on the module above the opinion of experts differ but basically have in common, namely that the modules of a curriculum package is provided for independent study and the nature of learning geared to the principle of individual differences. So it can be said module is a complete measurement tool, a unit that can function individually, separately, but also can serve as the unity of all the other units.

The Purpose of Learning Modules

The use of modules in the learning activities intended for educational purposes can be achieved effectively and efficiently. The students can follow the teaching program according to the speed and capabilities of its own, more independent learning, self-study to know the results, emphasizing mastery of subject material optimally (mastery learning). Furthermore, Cece (1992) states the learning process through module serves to: (1) The increase motivation to learn optimally, (2) Increased creativity of lecturer in preparing the tools and materials required and individual services are more stable, (3) to embody the principle of continuous advance is not limited to, (4) to create a system of active student learning. Thus the use of the module in the learning activities is possible for every student to learn its corresponding capabilities and controlled all lesson materials in their entirety.

Characteristics

To produce modules that can increase the motivation to learn and can be said to be good and interesting, in the writing of the module by the directorate of education personnel (2008), if the module has the following characteristics:

Self Instruction

It is an important characteristic of a module, with the character it allows a person

to learn independently and not depend on other parties.

Self Contained

The module is said to be self-contained if all the necessary learning material contained in the module. The aim of this concept is to give the students studying the learning material thoroughly because the learning material is packed into one unified whole. If you have to do division or separation of material from a competency standard/basic competence, must be done with care and attention to the breadth of competency standard / basic competencies that must be mastered by the learner.

Stand Alone (Stand Alone)

Stand alone is a characteristic module that does not depend on materials/other media, or should not be used in conjunction with teaching materials/other media. By using modules, learners do not need other teaching materials to learn and or tasks on the module. If the students still use and rely on teaching materials other than the modules are used, the materials are not categorized as a stand-alone module.

Adaptive

Modules should have high adaptability to the development of science and technology. Is said to be adaptive if the module can adjust the development of science and technology and flexible/flexible use in a wide range of hardware (hardware).

Friendly/Familiar (User-Friendly)

Modules should also meet the rules user-friendly or friendly/familiar with the wearer. Every instruction and exposure to information that appears to be helpful and friendly to users, including the ease of accessing the user in responding and liking. The use of simple language, easy to understand and use the term commonly used, is one form of user-friendly.

Learning to approach project work or by using module-based product disclosed by Bahri, (2009) has the following characteristics: (1) The student becomes the center or as an object that is actively studying the learning process, (2) projects planned focused on goals learning that has been outlined in the

Standards of Competence and Basic Competence in the curriculum, (3) Project developed by the questions as a framework of the curriculum (curriculum-framing question), (4) project is directly related to the real life world, (5) Students demonstrate knowledge through a product or performance, (6) Technology supports and enhances student learning. (7) Thinking skills are integrated into the project.

Product-Based Entrepreneurship Module

Products Based Learning

Learning by using a product-based learning model is learning that directs learners in systematic work procedures and standards to make or complete a product (or service), through the production process / the real work (BSNP, 2008). The product based learning module is an "open-ended form of contextual activity-based learning and a troubleshooting section through a collaborative effort" (Sunaryo, 2005). According Ganefri (2013) refers to "production-based learning models is defined as the procedures or steps that need to be performed by the educator to Facilitate learners to actively learn, Participate and interact, with a competency-orientation to produce a product either goods or services required". The definition was explained that Product based learning module contains procedures or steps that need to be done by educators to facilitate learners to actively learn, participate and interact, with the orientation of the competence to produce a product in the form of goods or services required. In addition, it is done collaboratively; Product based learning module should also be innovative, unique and focused on solving problems related to the lives of the learners or the needs of the community or the local industry.

Assessment of Learning Outcomes by Product based learning module

Assessment of learning outcomes with the use of product-based entrepreneurship module is basically a standard assessment of competence includes assessing aspects of knowledge, skills, attitudes, conformity of products/services, and the suitability of the execution time integrated components: preparation proposal, the implementation of production processes, reports, activities and culmination (presentation/test/presentation).

Learners declared competent if it meets the minimum standards required by the performance criteria of each basic competence. Determination achievement trial participants based on the value of the lowest value of basic competence in a unit of competency test.

RESEARCH METHODS

This study was a research & development (research & development). According to Borg (1989), in the implementation of development research is an attempt to develop or produce and validate a production that is used in learning. Stages of the development of this research using starting from Analysis, Design, Development, Implementation (ADDI).

This study was limited to the implementation of product-based entrepreneurship module, the implementation is to look at learning outcomes of the implementation of good product based entrepreneurship modules of cognitive, affective and psychomotor.

The procedure of this development can be seen in the following figure. A more detailed description of the procedures described in the following development.

The analysis was conducted to identify possible trouble in entrepreneurial learning through field surveys and literature studies. The analysis includes the analysis of needs such as analysis of curriculum and student analysis. The results of this analysis can be used to develop products based entrepreneurship modules.

Modules should be developed on the basis of the results of the analysis of needs and conditions. Keep in mind the material definitely learn what needs to be compiled into a module, how the number of modules required, who is going to use, what resources are needed and have been available to support the use of modules, and other things are considered necessary. Furthermore, the design of the modules developed is considered the most appropriate to the various data and objective information obtained from analysis of requirements and conditions. The shape, structure and component modules like what it can meet the various needs and conditions.

Establishing designs. Design by Hamalik (2008) is "an indication that gives basic, direction, goals, and techniques adopted in initiating and carrying out an activity". The

position of design in the development of the module is as one of the components of the underlying principles of development and provides direction techniques and the different stages of the module.

This phase verifies the form of troubleshooting to be performed and determine the appropriate test methods. This phase includes the translation needs and learning goals into objectives based entrepreneurship module manufacturing specific products. This stage entrepreneurship module-based design products according to the needs analysis conducted. Moreover, at this stage was also designed instruments to perform validation instrument production.

Based on a design that has been developed, compiled module required. The process of drafting module consists of three main stages. First, define strategies for learning and teaching the appropriate media. At this stage, to consider various characteristics of competencies that will be studied, characteristics of learners, and the characteristics of the context and circumstances in which the module will be used. Second, produce or physically embody module. Components of the module include learning objectives, learner pre requisites necessary, the substance or study materials, forms of learning and supporting components. The third was developing assessment tools. In this regard, it should be taken to ensure that all aspects of competencies (knowledge, skills, and attitudes related) can be assessed on the basis of certain criteria that have been set.

Furthermore, this development stage to generate and validate entrepreneurial learning modules based products. The validation process is accompanied by discussions or interviews with experts on the improvements to be conducted. Rancangan entrepreneurial learning modules based products prior consultation with an expert or experts and counselors. Then, the draft is considered by people who are competent (validator) who have understood the principle of the development of entrepreneurial learning modules based products, namely the engineering faculty lecturer and lecturer in entrepreneurship. Validation of this module there are three kinds, namely (1) validation of the module, is whether the modules that have been designed according to the course syllabus, (2) validity

module format, the suitability of the components of the module with the elements that have been defined, (3) the validity of the presentation, the validity of which is associated with the use of language, writing, drawing, and the appearance in the manufacture of learning media.

A module that has been produced is then used/implemented in the learning activities. Learning activities carried out in accordance with the grooves that have been outlined in the module. Learning activities ended with the assessment of learning outcomes. Implementation of measures also follows the rules that have been formulated in modules.

The implementation phase was done by preparing the learning environment and student involvement in the preparation of lectures consisting of faculty and students. Students were given a product based entrepreneurship module to determine the learning outcomes of the module use.

Design implementation lectures using one group pretest-posttest. The pretest was given at the beginning of the lecture. Posttest granted at the end of lectures.

Table 1. One Group Pretest – Posttest Design

Pretest	Treatment	Posttest
Q1	X	Q2

Source: (Sugiyono, 2014)

Description:

Q1 : Initial tests (pretest) prior to the treatment given

X : The treatment of the group that is learning to use the Product-Based Entrepreneurship Module

Q2 : Final Test (posttest) after the treatment was given

Technique of Data Analysis

Analysis learning outcomes of the implementation of the product-based entrepreneurship module consisted of:

Cognitive Aspects of Learning Outcomes

Learning outcomes used to measure cognitive learning outcome gained from providing test questions to students before and after learning by using product-based entrepreneurship module in the form of entrepreneurship multiple choice test.

Learning Outcomes Affective Aspects of

Learning outcomes in the affective aspects derived from the measurement results against established criteria.

Table 2. Indicators attitude

No.	Attitude Indicator
1	Implementing the SOP and K3
2	Honesty
3	Discipline
4	Persistence
5	Cooperation
6	Innovative
7	Inquiry
8	Responsibility
9	Keeping the workplace

Aspects Psychomotor Learning Outcomes

Results of a study on psychomotor aspects can be seen from the results observations of events and activities in which students work and an assessment of the product/tool designed student. The psychomotor assessment categories on the product/tool produced on entrepreneurship learning by using module-based products can be seen in Table 3.

Besides using descriptive analysis was used to analyze statistical data by describing or represents data that has been collected as without meaning make conclusions or generalizations apply to the public (Sugiyono, 2013). This descriptive analysis aims to provide an overview of entrepreneurial learning

conditions in the faculty of engineering in higher education.

RESULTS AND DISCUSSION

Entrepreneurship courses held in the form of theoretical and practical so that it can be used as a future capital of students after graduation. Entrepreneurial learning is a process of enhancing the entrepreneurial spirit of students by using a variety of methods appropriate to the capabilities provided. Moreover, entrepreneurial learning is an educational process that serves to guide students in a systematic and targeted in order to foster entrepreneurship.

Noting the particular characteristics of the learning process of learning a unique and comprehensive entrepreneurship, entrepreneurship module development potential based products to meet the demands of the learning. "Module-based products can be directed learners in systematic work procedures and standards to make or complete a product (or service), through the production process/the real work" (BSNP, 2008).

The excess module is a product-based support existing teaching materials, provide an opportunity for students doing work practices oriented to the market, and to improve the competence of students as well as to foster the entrepreneurial spirit of students. In addition to the unavailability of products based modules on entrepreneurship courses.

Table 3. Indicators of psychomotor

No	Aspects	Description	Score
1	Planning	Loading topics, objectives, materials/tools, work steps, schedule, time, approximate data to be acquired, the implementation of the project, a list of questions or the format used according to the purpose.	20
2	Gathering of data	a. Data information recorded with a neat, clear and complete. b. The accuracy using a tool/material	15
3	Data processing	a. There is a classification of data, interpretation of data in accordance with the purpose of implementation of the work. b. There is a description of the implementation work.	15
4	Reports	Formulate a topic, formulate the goals, writing tools and materials, outlines how to work (operational measures) Systematically report writing, using communicative language. Presentation of data is complete, contains conclusions and suggestions.	20
5	Products / tool's	Success in the construction and installation of the circuit in the instrument neatness.	30
Total Score			100

This learning module development process is done with 5 stages of development as in the model used is the ADDIE development model consists of five main stages, namely, analysis (analysis), design (design), develop (development), and Evaluate (evaluation).

The analysis carried out through several activities, namely the analysis of curriculum and student analysis. This stage was conducted as a basis for developing a product based entrepreneurship module on entrepreneurship courses that can be used to facilitate self-learning students. After conducting the analysis phase, there was obtained product based learning entrepreneur module that presents 9 learning topics. Each topic interconnections that will direct students produce a product that can foster the entrepreneurial spirit of the students.

Research on the development of learning modules (Pebruanti & Munadi, 2015) and entrepreneurial learning modules in vocational education (Anggraini & Sukardi, 2015; Anggraini & Sukardi, 2016; Prasetya, & Sukardi, 2016). However, the development of products based entrepreneurship modules in vocational higher education was never produced and applied. The module was developed in accordance with the curriculum of courses for students of Faculty of Engineering Entrepreneurship in Higher Education.

Students' Learning Outcomes

Measuring the improvement of learning outcomes on cognitive aspects obtained was by providing test questions to students before and after the learning using entrepreneurship module-based products in the form of a multiple choice test. In the aspect of affective and psychomotor, learning outcomes obtained through an assessment by the observer (lecturer) in accordance with the indicators assessed as attitude, skills, and products produced by students when learning activities practice take place, well before using modules with after using module-based entrepreneurship product.

Before using Learning Module-Based Enterprise Products

a. Learning Outcomes Cognitive Aspect

Referring to the cognitive aspects of learning outcomes before using the product

based entrepreneurship module on entrepreneurship courses showed that student results, amounting to 31 had an average of 66 learning outcomes, including the category is quite effective. The data on student results before using the product based entrepreneurship module.

Table 4. Percentage Cognitive Aspects of Learning Outcomes Before Using the Module

No	Value Range	Frequency	In%	Category
1	0-54	5	16.13	Not effective
2	55-64	6	19.35	Less effective
3	65-79	18	58.06	Effective enough
4	80-89	2	6.45	effective
Total		31	100	
average result of learning outcomes = 66				Self-effective

It can be seen students who score sufficiently effective category or ≥ 65 numbered only 18 people and got effective category values ≥ 80 only accounts for 2 people. Based on learning outcomes data before using module-based products, we can conclude that learning-based module product before use is quite effective.

b. The Learning Outcomes of Psychomotor Learning and Affective Aspects

Assessment results of psychomotor and affective were seen through the observation by the observer on aspects of skills and attitudes current practice activities underway. Psychomotor aspects are skills students during practical learning activities take place. The preliminary stage was the preparation of tools and materials. Observations at the implementation stage, among others, work in groups, using the tool, dexterity, cleanliness, and others. Meanwhile, observations in the closing stages were on aspects of the observations recorded correctly, demonstrating the results of lab work, as well as the equipment used to clean back.

On the affective aspects are observed, among others, honesty, self-discipline, rigor, perseverance, friendship, innovation, responsibility and enthusiasm in the learning process. Social attitudes include work together in groups; appreciate lecturers and friends, as well as interaction with professors and friends. For data assessment psychomotor and affective aspects of students after calculated before

using the product based entrepreneurship module.

Table 5. Percentage of Psychomotor Learning and Affective Aspects Before Using the Module

No	Range Value	Frequency	In%	Category
1	65-79	19	61.3	Sufficiently effective
2	80-89	12	38.7	Effective
Total		31	100	
average result of learning outcomes = 78,5				Self-effective

Data from student results on the psychomotor and affective towards practical learning electronic circuit shows the results are quite effective. The average student is quite skilled in psychomotor activity required in a practical learning. But the skill that is not controlled perfectly by students is less nimble students using the tools and assembling electronic components. As well as on the affective lack of discipline, rigor, perseverance, and enthusiasm of students in the learning process.

Learning after implementing Product Based Learning Module-Based

a. Cognitive Aspects of Learning Outcomes

Referring to test results after using products based entrepreneurship modules in the course of practice shows that the electronic circuits student results, amounting to 31 had an average of 85 learning outcomes, including effective category.

Table 6. Percentage of Cognitive Learning Module After Using

No	Range Value	Frequency	In%	Category
1	65-79	5	16.13	Effective enough
2	80-89	17	54.83	Effective
3	90-100	9	29.03	Very Effective
Total		31	100	
average result of learning outcomes = 85				effective

It can be seen students who score sufficiently effective category or ≥ 65 amounted to only 5 people and got effective value ≥ 80 categories totaling 17 people then who score highly effective category ≥ 90 amounted to 9 people. Based on data outcomes after using the product based entrepreneurship module, we can conclude that after using the learning

modules based entrepreneurship effective product.

b. The Learning Outcomes of psychomotor and affective Aspects

Assessment results on psychomotor and affective can be seen through the observation by the observer on aspects of skills and attitudes current practice activities underway using product based learning module. The assessment which includes skills, attitudes, conformity of products/services, and the suitability of the execution time integrated components: preparation of proposals, the implementation of production processes, reports, activities and culmination (presentation/test/presentation).

Table 7. Percentage of Psychomotor Learning and Affective Aspects After Using product based Entrepreneur learning module

No	Range Value	Frequency	in%	Category
1	80-89	1	3.2	Effective
2	90-100	30	96.8	Very effective
amount of		31	100	
average result of learning outcomes = 95				highly effective

Based on student learning outcomes in psychomotor and affective to entrepreneurial learning, it showed very effective results. The average student is skilled in psychomotor activity required in a practical learning. Rating is the highest located on the dexterity of the students using the tools and assembling electronic components so as to produce a product/tool suite has commercial potential. And also in the affective domain of students showed discipline, rigor, perseverance, and very enthusiastic students in the learning process by using a product based Entrepreneur learning module.

Based on the analysis and description have been done on the effectiveness of the two item indicators showed that the activity of the students while performing in the entrepreneur learning by using product based Entrepreneur learning module, that is in the active category and student results on the was good at cognitive aspects, while affective and psychomotor aspects were in the effective category. These results have provided the conclu-

sion that product based Entrepreneur learning module on the criteria the products are effective for use in the entrepreneurship courses.

Discussion

Learning outcomes test is used to determine the effectiveness of the learning process. The learning result is the ability of the students as they go through the process of learning experiences. The learning experience effective form of learning activity and can realize the goal of good learning outcomes. The purpose of the assessment of learning outcomes is to measure what level of success of the learning process that has been implemented.

From the description above shows that the use of modules developed easier for students to understand the material so that student learning outcomes for the better. Like what is proposed by Rashid & Mansour (2007) "the evaluation is the process of determining the extent to which the learning process has been achieved". Based on cognitive aspects of learning outcomes for entrepreneurial learning data indicates that of the 31 students who take the test before they use entrepreneurship module-based products have an average of learning outcomes are 66, with a category quite effective. The average results of student learning in psychomotor and affective aspects of 31 students before using the module are 78.5 with a category quite effective.

Based on data from the cognitive learning of the 31 students who took the tests after they use entrepreneurship module-based products have an average of learning outcomes at 85, including effective category. Likewise, student learning outcomes assessment in psychomotor and affective aspects have an average of learning outcomes, of 95, is included in the category of very effective. This shows that an increase in student results before and after using the product based entrepreneurship learning module. So, it can be concluded that learning by using modules can be said to be effective in improving student learning outcomes either on cognitive, psychomotor and affective.

Despite the many advantages obtained through the use of product based entrepreneurship learning module but the obstacles that need attention i.e. time management.

CONCLUSIONS

Based on these results it can be concluded as follows:

1. Research development of product based entrepreneurship learning modules developed using ADDI stages, limited at the implementation stage.
2. Learning by using product based entrepreneurship learning module can improve student learning outcomes in vocational higher education.
3. Product based entrepreneurship learning module has advantages over the module in general, one that is very important is this product based entrepreneurship learning module, it means the module that guides learners are able to produce products oriented to the needs of society and the business industry. In addition, products made extremely have commercial potential that vocational scientific competence of each student can be directly applied in entrepreneurial learning activities in this module.

Furthermore, based on the results of this study suggested activities to faculty, students, and vocational higher education in order to develop and use product based entrepreneurship learning module. In addition, the researchers can serve this research product as a reference and the development of advanced research.

REFERENCE

- Anggraini, A., & Sukardi. (2015). Pengembangan modul prakarya dan kewirausahaan materi pengolahan berbasis product oriented bagi peserta didik smk. *Jurnal Pendidikan Vokasi*, 5(3), 287-296. Retrieved from <https://journal.uny.ac.id/index.php/jpv/article/view/6484>
- Anggraini, F., & Sukardi. (2016). Pengembangan modul pembelajaran kewirausahaan model student company di smk negeri 1 Godean. *Jurnal Pendidikan Vokasi*, 6(1). Retrieved from <http://journal.uny.ac.id/index.php/jpv/article/view/8113>
- Badan Pusat Statistik. (2017). *Berita resmi statistik: keadaan ketenagakerjaan*

- Februari 2017. No. 47/05/Th.XX, 05 Mei 2017.
- Badan Pusat Statistik. (2016). *Berita resmi statistik: keadaan ketenagakerjaan Agustus 2016*. No. 103/11/Th.XIX, 07 November 2016.
- Bahri, A. (2009). *Sistem Pembelajaran Abad 21*. Retrieved September, 5, 2013, from http://www.ubb.ac.id/menulengkap.php?judul=Sistem%20Pembelajaran%20Abad%2021Q%3E&&nomorurut_artikel=252
- BSNP (2008). *Model-model pembelajaran SMK*. [online]. <http://elpramwidya.wordpress.com/2009/04/22/model-pembelajaran-di-smk/>. Diakses pada tanggal 15 Desember 2013.
- Borg, W. R. (1989). *Educational Research, an Introduction*. New York: Longman Inc.
- Cece, W. (1992). *Upaya pembaharuan dalam pendidikan dan pengajaran*. Bandung: Remaja Rosda Karya.
- Direktorat Tenaga Kependidikan, Direktorat Jenderal Peningkatan Mutu, Pendidik Dan Tenaga Kependidikan, Departemen Pendidikan Nasional. (2008). *Penulisan Modul*. Retrieved from <http://gurupembaharu.com/home/wp-content/uploads/downloads/2011/02/26-05-A2-B-Penulisan-Modul.doc>
- Fiet, J. (2000). The pedagogical side of entrepreneurship theory. *Journal of Business Venturing*, 16, 101–17.
- Ganefri. (2013). The Development of Production-Based Learning Approach to Entrepreneurial Spirit for Engineering Students. *Asian Social Science*, 9(12), 162-167. <http://dx.doi.org/10.5539/ass.v9n12p162>
- Ganefri & Hidayat, H. (2015). Production based Learning: An Instructional Design Model in the context of vocational education and training (VET). *Procedia-Social and Behavioral Sciences*, 204, 206-211. <https://doi.org/10.1016/j.sbspro.2015.08.142>
- Ganefri, Hidayat, H., Kusumaningrum, I., Dewy, M.S., & Anori, S. (2017). Learning outcomes in vocational study: a development of product based learning model. *The Social Sciences*, 12, 831-838. <http://medwelljournals.com/abstract/?doi=sscience.2017.831.838>
- Ganefri., Hidayat, H., Kusumaningrum, I., & Mardin, A. (2017). Needs Analysis of Entrepreneurship Pedagogy of Technology and Vocational Education with Production Based Learning Approach in Higher Education. *International Journal of Advanced Science, Engineering and Information Technology*, 7(5), 1701-1707. <http://dx.doi.org/10.18517/ijaseit.7.5.1510>
- Hamalik, O. 2008. *Kurikulum dan pembelajaran*. Jakarta: Earth Literacy.
- Hidayat, H. (2017a). Impact of Learning with the Production Based Learning Model in Vocational Education. *International Journal of Research in Engineering and Social Sciences*, 7 (2), 1-6. http://indusedu.org/pdfs/IJRESS/IJRESS_1057_92032.pdf
- Hidayat, H. (2017b). How to Implement Technology Science for Entrepreneurship by Using the Product-Based Learning Approach and Participatory Action Learning System in Higher Education?. *Advanced Science Letters*, 23(11), 10918-10921. <https://doi.org/10.1166/asl.2017.10186>
- Kirby, D. (2004). Entrepreneurship education: can business schools meet the challenge?. *Education & Training*, 46(8), 510-19
- Kusumaningrum, I., Ganefri & Hidayat, H. (2015). Improving students' entrepreneurial interest using production based learning model in TVET. *Advances in Social Science, Education and Humanities Research*, 14, 69-74. doi: 10.2991/ictvet-14.2015.17
- Kusumaningrum, I., Hidayat, H., Ganefri, Anori, S. & Dewy, M. S. (2016). Learning outcomes in vocational education: a business plan development by production-based learning model

- approach. *International Journal of Environmental and Science Education*, 11(18), 11917-11930.
<http://files.eric.ed.gov/fulltext/EJ1122558.pdf>
- Matley, H. (2005a). Entrepreneurship education in the United Kingdom business schools: conceptual, contextual and policy considerations. *Journal of Small Business and Enterprise Development*, 12(4), 627-43
- Matley, H. (2005b). Researching entrepreneurship and education, Part 1: What is entrepreneurship and does it matter?’, *Education & Training*, 48(8/9), 665-77
- McKeown, J., Millman, C., Sursani, S.R., Smith, K., & Martin, LM (2006). Graduate entrepreneurship education in the United Kingdom. *Education & Training*, 48(8), 597-613
- McMullan, W. & Long, W. (1987). Entrepreneurship education in the 1990s. *Journal of Business Venturing*, 2, 261-75
- Mursid. R. (2017). Pengembangan model pembelajaran penguatan vocational life skills mahasiswa berwawasan Kewirausahaan di bidang teknik mesin. *Jurnal Pendidikan Vokasi*, 7(1), 110-122. Retrieved from <https://journal.uny.ac.id/index.php/jpv/article/view/12653>
- Pebruanti, L & Munadi. S. (2015). Peningkatan motivasi dan hasil belajar pada mata Pelajaran pemograman dasar menggunakan modul di SMKN 2 sumbawa. *Jurnal pendidikan vokasi*, 5(3), 365-376. Retrieved from <https://journal.uny.ac.id/index.php/jpv/article/view/6490>
- Republik Indonesia. peraturan pemerintah republik Indonesia nomor 32 tahun 2013 tentang perubahan atas peraturan pemerintah nomor 19 tahun 2005 tentang standar nasional pendidikan (2013)
- Prasetya, E.R., & Sukardi. (2016). Pengembangan modul prakarya dan kewirausahaan materi kerajinan berbasis proses di SMK. *Jurnal pendidikan vokasi*, 6(2), 154-161. Retrieved from <https://journal.uny.ac.id/index.php/jpv/article/view/9552>
- Russel, J. D. (1994). *Modulator Instructional System*. New York: Nichol Publisher Company.
- Sudjana, N., & Rivai. A. (1997). *Media pengajaran*. Bandung: Sinar Baru Algensindo.
- Sugiyono. (2013). *Statistik untuk penelitian*. Bandung: PT. Alfa Beta
- Sugiyono. 2014. *Metode penelitian kuantitatif kualitatif dan RnD*. Bandung: PT. Alfa Beta
- Sunaryo, S. (2005). *Pembelajaran Berbasis Proyek dan Pembelajaran Berbasis Masalah*. Pelatihan Model Pembelajaran KBK. P3AI UNY.
- Undang-Undang Republik Indonesia Nomor 20 Tahun 2003. *Tentang Sistem Pendidikan Nasional*. Penerbit: BP Citra Jaya. Jakarta.
- Yulastri, A., Hidayat, H., Ganefri, Islami, S. & Edya, F. (2017). Developing an Entrepreneurship Module by Using Product-Based Learning Approach in Vocational Education. *International Journal of Environmental and Science Education*, 12(5), 1097-1109.