THE ACTUALIZATION OF PROJECT-BASED ASSESSMENT IN ENTREPRENEURSHIP EDUCATION BASED ON LOCAL EXCELLENCE IN MEASURING SKILLS OF VOCATIONAL HIGH SCHOOL STUDENTS

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Abstract

This study is part of a study on the development of entrepreneurship education model based on local advantages to improve the vocational skills of high school students in the city of Mataram. One purpose of this study is to obtain project-based assessment tools to measure the vocational skills of high school students on the subjects of entrepreneurship. This study uses a model of research and development Borg and Gall (1983) The main stages include: (1) a preliminary study; (2) the development of the initial product consisting of the preparation of design models, preparation of prototype product models, initial product testing through test validation and test experts is limited; and (3) test the final product in the form of pre-experiment using a static group comparison design. Data in the test phase of products are obtained by using questionnaires, focus group discussions, and implementation of project-based assessment. All the data were then analyzed by descriptive quantitative and independent sample t test. The results of the study are as follows: (1) assessment component covers all aspects of planning, implementation, results / products, and reporting that comes with the operational and measurable assessment rubric; (2) the expert validation test results indicate that the average score of 4.72 with a very good category; (3) the results of consistency test conducted by two assessors showed a correlation coefficient 0.934 with a probability value of 0.000. Thus a reliable project-based assessment instruments; (4) the results of the model test showed tcount at 18.54 with a probability value of 0.000. Thus, project-based assessment instrument is recommended to be used to measure the vocational skills of high school students in the eyes of local excellence in entrepreneurship education. Based on these findings, the school and relevant agencies can use these instruments, either in the form of socialization, doubling, workshops, and implementation.

Keywords*: Project-Based Assessment, Entrepreneurship, Vocational Skills*

Introduction

In learning process, assessment has a strategic position, because it can provide a framework for determining the learning objectives and the progress of the learning process. Assessment is used to measure learning outcomes Reigeluth and Merrill (1978; 1979) and Degeng (2013: 186) classified into three, those are effectiveness, efficiency and sense of learning. Further Reigeluth and Merrill (1978; 1979) stated that learning effectiveness can be measured by associating it with the learning objectives (competencies) and the type or characteristics of the field of study. Referring to this theory, it is in the context of entrepreneurial learning, assessment should be directed to the measurement of entrepreneurial competencies of students on entrepreneurial attitudes and behaviors, including students' vocational skills (Direktorat Pembinaan SMA, 2007: 8). This reflected that these

competencies are likely to lead to the goal and supporting procedural orientation and prerequisites of the procedural steps in conducting sequence activities (Degeng, 2013: 58), so that the assessment also lead to these obligated competencies.

However, problems arose and became one of the focus of this study was the use of assessment was not relevant to the field of study characteristics and competencies being measured, particularly on the subjects of entrepreneurship education. Sukardi et al. (2012) findings: for example, the assessment was used to focus on the limit of the written test, even in the Wildan et al. (2011) finding stated that the assessment conducted tend to to measure the lower-level cognitive aspects. Of course, this condition is not in accordance to the characteristics of entrepreneurial education that emphasizes the value of the character and behaviors of entrepreneurs (Wennekers & Thurik, 1999) included entrepreneurial skills/vocational skills (Priyanto, 2012). The characteristics of this field of study was strengthened by the some findings of research that stated that the attitude and behaviors of entrepreneurs was entrepreneurial competence which was established through entrepreneurship education (Birdthistle et al., 2007; Taatila, 2010; 2008; Sowmya et al., 2010).

In addition, as entrepreneurship education in Senior High School is one form of local content, its content is more focused on local advantages in order to develop skills of students (Direktorat Pembinaan SMA, 2007: 8). Thus, entrepreneurship education is directed to the completion of the children' social problems as dropout, unemployment, and others. Central Bureau of Statistics (BPS Indonesia, 2013), for example, noted that 9.74% of graduated Senior High School became unemployed, and it is only about 25% who pursue their study to a university, which was indicated on the Gross Enrolment Ratio of University was 18.3 (BPS Indonesia, 2013). This Scientific responsibility entrepreneurship education is in line with the thinking of social reconstruction theory on oriented problem solving of the learners, such as the less skills as proposed by Gourge S. Counts, Harold Rugg, and Theodore Brameld (McNeil, 2006: 38; Bagenstos, 1977). In terms of implementation, social reconstruction theory can be applied in the form of: problem solving oriented development of the students (White, 2002); students' potension based aim and content (McNeill, 2006: 38); learning emphasized on shared learning activities, interaction, cooperation (Joyce et al., 2001) including practice (Hung, 2002); and evaluation of learning that involves students (McNeill, 2006: 39).

Based on these problems, it is important to do the construction of entrepreneurial learning, both related to content (such as the use of local advantages), learning (learning-based joint activities, interaction, collaboration, and practice), and assessment (use of

authentic assessment). Construction of such assessment is important because the assessment conducted on to measure low level cognitive aspects by relying on the written test as the main instrument. Therefore, the focus of study is to provide directed project-based assessment tools to measure students' vocational skills. Assessment can assess the performance of the project (process) as well as the results of the practice (product) conducted by the students themselves whether conducted by students, peers, or by the teacher (Bergh et al., 2006). This assessment consists of four main parts, namely planning, implementation, product/results, and reporting (Puskur Balitbang, 2006: 36). Thus, one of the goals of this research and development, which is to produce a project-based assessment tool used to measure viable vocational skills of high school students on the subjects of entrepreneurship based on local advantages.

Research Method

This study used *research* and *development* method which refered to Borg and Gall (1983: 773) by conducting appropriate adjustments to the existing conditions. In addition, this model combined with the principles of constructivist-oriented design, such as the collaboration between researchers/developers with users during the development process, design and development activities were integrated, and the final model was opensive and flexible (Willis, 2000; Willis & Wright, 2000). At least there were some main stages in this study, namely: (1) conducted a preliminary study using survey methods (Ary et al., 2002: 375) in all Senior High Schools in the city of Mataram NTB. The data was collected by using questionnaires in the form of semantic differential, focus group discussion (FGD), and a review of documents, which were then quantitatively analyzed descriptively; (2) the development phase consists of the preparation of the model design and preparation of prototype products. Construction of a prototype model of the product was done in a participatory manner involving research subjects. Especially for the assessment using project-based assessment (Bergh et al., 2006) which has four aspects of assessment, namely: planning, implementation, results/products, and reporting; and (3) the stage of testing the effectiveness of the model was done through initial product testing and final product testing. Initial product testing was done through expert validation test of Education Research and Evaluation. The consistency test of the assessment was carried out by comparing the test results of the assessment of vocational skills by two assessors, as suggested by Gronlund and Waugh (2009: 65). The final test of the product was done through field trials in the form of pre experiments using static group comparison design (Borg & Gall, 1983: 680; Creswell, 2009: 241). To reduce the weaknesses of this design, researchers tried to match the two

classes in terms of intelligence, interest in entrepreneurship, the same infrastructure, the ability and sincerity teachers, allocation of time and learning schedule.

Results

The explanation the results of the study is focused on the construction of the assessment instruments. The survey found that the assessment instruments construcfed by teachers in entrepreneurship education in the city of Mataram SMA is not relevant to the characteristics of the subjects and competencies being measured, such as vocational skills of students. The study revealed that the assessment of learning is still focused on written test. In addition, tests were developed more directed at the cognitive level of knowledge and understanding. There are few teachers who developed non-assessment tests, such as project appraisal, performance, portfolio, and the like.

Referning to results of the needs analysis and principles of social reconstruction, the entrepreneurial learning was indicated local skills/regional production skills, like crafting gold/silver/pearl to be the main content. This content became an instrument of social problem-solving of graduated students from Senior High School, so the goal is emphasized on motoric skills (vocational skills). The implication for assessment was the uses of the assessment of measuring students' vocational skills, such as project-based. This assessment was conducted to know the achievement of learning objectives, efficiency, and attractiveness of teaching as thinking Reigeluth and Merrill (1978; 1979). In addition, the uses of project-based assessment becomes more relevant because the structure of the content in entrepreneurship education based local advantages showed more procedural relationship of the steps in carrying out production activities. Based on the analysis of the problems and needs as well as referring to the social reconstruction theory, the researchers collaboratively established the use of project-based assessment to measure the vocational skills in producing jewelery gold/silver/pearl. The design project-based assessment is visualized in Table 1 below.

Table 1. Description of The Design Project-Based Assessment Entrepreneurship Subject-Based on Local Excellence

No.	Item	Description
1	Planning	Planning included the task project done by student, time planning, the division of tasks among group members, preparation of materials and practice tools/Completion of the documentation tools during practice.
2	Implementation	The Implementation, included: the use of precision tools, precision use of the practice, how to practice, the accuracy of the

		order of production practices, and timeliness during practice.
3	Products / Results	The results of the practice of real product / project completion sspects included: the truth of the resulting product, neatness, cleanliness, fineness products, precision measurement, and the strength of the product installation.
4	Reporting	Related to the accuracy of systematic project reports, completeness of reporting, mastery of the material, communicative presentation, use of media presentation, and data support.

Source: Primary Data Processing

Components of the project based on the above assessment was equipped with an assessment rubric that included a detailed description of the types of specific performance and the criteria that will be used to assess student projects. Assessment rubrics were arranged in the form of a Likert scale that has three options, namely: good (score 3), adequate (score 2), and medium (score 1).

Expert validation test results indicated that the product-based assessment project is very good. The results of the assessment validation obtained an average score of 4.72 in the interval 1-5 in the excellent category. These results reflected that all aspects of assessment tools, either related to the planning, implementation, product/results, or reporting was adequate, included assessment rubric. Overall, the component was feasible assessment used to measure entrepreneurial competencies (skills of vocational students).

Furthermore, for the instrument realibility, the product test was then conducted using project based assessment tools. Through assessment by two assessors, as suggested by Gronlund and Waugh (2009: 65). The scores from both assessors are correlated to identify the consistency of assessment instruments. The test results indicated that project-based assessment tools were used consistently and recommended to be used to measure students' vocational skills on the o entrepreneurship subjects. Test results can be seen in Table 2 below.

Table 2. Summary of Test Results Consistency Project-Based Assessment Instruments

Instrument	Evaluator	Mean	Sd.	r value	Sig.	Conclution
Based Assessment Project	1	87.83	5.109	.934	.000	Consistent
	2	88.13	4.077			

Source: Primary Data Processing

The test of final product is carried out through pre experiments using static group comparison design. The results of statistical tests (independent-samples t test) effect of the

use of project-based assessment of vocational skills visualized in Table 3. Prior to testing the effectiveness, first tested in the form of requirements analysis tests of normality and homogeneity. The results of the analysis of normality shows the Kolmogorov scale Smirnovhitung value of 1.183 with a probability value of 0.112> 0.05. Thus, the data of vocational skills of students in both classes are normally distributed. The results of the homogeneity tests show magnitude of F values of 0.285 with a probability value of 0.595> 0.05. It was concluded that both classes variance is homogeneous.

Table 3. Results of t Test Using Project-Based Assessment of Vocational Students Skills

Class / Group	N	Mean	Sd.	Value t	Df	Sig.
Experiment	40	88.13	4.07	18.54	78	.000
Static	40	70.33	4.49			

Source: Primary Data Processing

The data in Table 3, it can be concluded that there are significant differences between vocational skills of the experimental class than that of static class. Vocational skills higher than the experimental class. Thus, the uses of project-based assessment instrument to measure the vocational skills of high school students in the eyes of local excellence in entrepreneurship education. This difference can be understood, because the assessment of learning in the experimental class was adjusted to the competencies measured. Additionally, in the assessment process involv students in the planning and evaluation aspects based on principles of social reconstruction.

Discussion

Entrepreneurship education in Senior High School, which was one form of local content that aimed to equip students with the skills through the use of local potential including local advantages (Direktorat Pembinaan SMA, 2007: 3). Referring to this aims, the entrepreneurship education focused on skill formation, so the goal was likely to lead to the goal and supporting oriented procedural prerequisites (Reigeluth and Merrill, 1979; Degeng, 2013: 58). In the context of learning outcomes according to Gagne and Briggs (1979: 51), the goal was likely to lead to the capability of motoric skills. Thus, entrepreneurship education was directed towards the formation of skills for students in managing the local advantage in order to obtain provisions for independent living after Senior High School graduation.

Observing these characteristics, the assessment should ideally emphasize on the use of authentic assessment, such as project-based assessment, performance, products, and so on. However, the results of preliminary studies clearly illustrate that the devices used less in

accordance with the demands of the entrepreneurial substance. This has inconsistence of the impact of entrepreneurship education on students learning outcomes (Packham et al., 2010; Frank et al., 2005; Jones et al., 2008). This difference by Cheng et al. (2009) caused by content differences, learning, and assessment used. This inconsistence triggered the reconstruction on the subjects of entrepreneurship education, particularly in the aspects of assessment. This reconstruction produced project-based assessment tool for entrepreneurship education subjects of local advantages based on the theory of social reconstruction.

The resulting product can not be separated the theoretical social reconstruction. Berger and Luckmann (1990: xv) as the main character in the social sciences (sociology) believed that the ontology paradigm of the social construction of reality as a social construction which was created by the individual to the social world around them. The theory of social reconstruction was then applied to education pioneered by Gourge S. Counts, Harold Rugg, and Theodore Brameld (Oliva, 1992; McNeil, 2006: 38; Bagenstos, 1977; Stanley, 1981). Principles of social reconstruction has great impacts on tradition of social constructivism in psychology initiated by Vigotsky (Schunk, 2012: 337) and often being refferered in conducting research (Deulen, 2013; Hung, 2002).

The application of this theoretical construction of the device resulting in entrepreneurship education that can be seen from two sides, which is a process of learning and assessment. First, one of the applications of this theory of learning was that learning is not only done in a collaboration, interaction, and cooperation in building knowledge based on reality or social problems, but also done through the practice directly. Practice was done outside the classroom with artisans on how to produce jewellery ring and bracelet cross pearl. This practice became a tool or a solution to social problems, such as less of skill that have an impact on unemployment. This process was proven by the acquisition of learning outcomes in the form of Senior High School vocational skills. This was consistent with the findings of Hung (2002), which stated that social reconstruction based learning could improve student learning outcomes, because learning is not only constructed through the interaction between ideas and the ideas that they had with the social reality, but a child's ability to interpret reality in the form of social practice. Vigotsky (Schunk, 2012: 338) also stated that students will be able to raise their competence (including vocational skills) on each of their zone of proximal development after getting a help from an adult or a friend. Such assistance can be given through practice at an early stage, then slowly reduced until the student is able to practice by themself. Much earlier, Stanley (1981) in a study of the socio-oriented education recommend to educators to help students recognize social change and social problems not only through the process of interaction, but also through the process of conducting an investigation in a

community practice. Thus, if the reconstruction of social learning is a process of interaction and cooperation, then the activity is a tool to change practices/solutions in society.

Second, the implications of the learning process was the uses of real evidence-based assessment of learning. To measure the students' practical abilities, then the uses of the written test was less precise because it could not reveal the student's skills. Thus, the proper uses of project-based assessment used as measuring processes as well as products of student learning outcomes. The outcomes assessment was carried out to identify the achievement of learning objectives and assessment process to know the achievement of efficiency and attractiveness of teaching as stated by Reigeluth and Merrill (1978; 1979). The results of this study demonstrated the feasibility of the uses of project-based assessment to measure the vocational skills of high school students in the local entrepreneurship education. This findings reinforced previous findings that the project-based assessment much empirical support through several studies (Bergh et al., 2006; Doppelt, 2003). Doppelt is findings (2003), for example, stated that the project-based assessment can be effective in measuring the competence and skills of the students as it provides real experiences during the completion of the project. This was also supported by the research findings of Werth (2009) which indicates that project-based assessment is very significant in helping students develop new policing skills, demonstrating how information learned in class applies to field work, aiding in the recall of class material, developing problem-solving skills, and learning the skills needed to work in law enforcement groups in the field.

Conclusions and Sugestions

Based on the above explanation, it can be concluded that: (1) assessment instruments developed by teachers in Entrepreneurship at SMA Kota Mataram is less relevant to the characteristics of the subjects and competencies being measured, such as vocational skills of students; (2) one of the products developed is the assessment based project relying on the theory of social reconstruction. Assessment component covered aspects of planning, implementation, results/products, and reporting that comes with the assessment rubric operational and measurable; (3) the results of the validation test experts obtained an average score of 4.72 with a very good category; (4) the consistency of test results based on an assessment by two assessors showed a correlation coefficient 0.934 with a probability value of 0.000. Thus project-based assessment is a reliable instrument; (4) The results of the model test showed t-count at 18.54 with a probability value of 0.000. Thus, project-based assessment instrument used to measure the worth of vocational skills of high school students in the eyes of local excellence in entrepreneurship education.

Based on these findings, then: (1) the school can take those advantages of these products. It is can be through socialization, duplication products, internal workshop for teachers of entrepreneurship education, through the implementation of classroom action research, through the implementation of Lesson Study, and others; (2) Policy Makers (Department of Education) can also use it. It can be done through multiplication for all schools, *training of trainers* (TOT) for supervisor, facilitating school made training programs or workshops, facilitated through the implementation of PTK, and others; (3) other researchers can follow up these findings, either through the uses of different methods, the extension of the device components of assessment, the effectiveness of different test parameters, the expansion of the subject, the test on non-formal educational institutions, and others.

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