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The Effectivenees Entrepreneurship Project for Kognitive Abilities Students in Waste Treatment

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Abstract. This study to apply entrepreneurship project learning to high school students. The research method was a *weak experiment,* with the research design "*The One-Group Pretest-Postest Design*". The population used in this study were all class X high school as many as 10 classes totaling 360 students. The sample used in this study were 1 class taken using *cluster random sampling*. Data collection is done through *pretest* and *posttest*. The results of the analysis show that entreprneurship project can improve students' mastery of concepts. In addition, the creativity of students in finding tofu waste treatment is good enough by making products that are aesthetically and economically valued appropriately.

INTRODUCTION

In the 21st century and society 5.0, humans must have life skills to be able to compete in the global world. Entrepreneurship is an indispensable skill for the well-being of people around the world in the 21st century, and its support is limited as natural resources become increasingly competitive. An entrepreneurial spirit that is trained and honed well since adolescence will create innovative human resources that can free the country and its country from dependence on natural resources. Of course what is needed is entrepreneurship that has a major impact on improving economic performance by supporting the welfare of the country through the creation of useful original works. Learning now must be able to produce students who have life skills. It can be taught through project learning. Project-based learning can be seen from entrepreneurial activities, namely teaching students to produce a product that can compete and can increase income for themselves. Project-based science is always framed by a discipline of inquiry. All disciplines have the same implementation stages, namely introduction, assignment, source,

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process, *scaffolding* and guidance, collaboration/cooperation, reflection, discussion, evaluation and *follow-up* student[1].

Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System Article 26 paragraph 3 states that Life skills are personal skills, social skills, intellectual skills, and vocational skills to work and independent business. One element of life skills, namely vocational skills to work or independent business, can be grown through entrepreneurship-based education. Some characteristics of the entrepreneurship project model are problems or challenges raised to students, an atmosphere that supports/tolerates changes and mistakes, students design processes to determine solutions to problems, students make decisions, students periodically reflect on activities that has been carried out, the evaluation process is carried out continuously, the final product will be evaluated qualitatively[2]. Entrepreneurship is a very important aspect, not only for carrying out a business activity (business) but also in dealing with various activities of daily life.

One of the things that can be done to overcome student problems is a learning approach. Learning with an entrepreneurial approach can increase students' interest in entrepreneurship. Waste management learning provides opportunities for students to maximize their potential to make products. The essence of entrepreneurship learning is that students can turn materials into useful and economically valuable products. In addition to growing interest in entrepreneurship, learning with an entrepreneurial approach can also increase students' environmental awareness. Entrepreneurship is the application of creativity and innovation to solve problems and efforts to take advantage of opportunities faced every day [3]. Entrepreneurship in the waste treatment project is expected to be able to facilitate students' understanding of the environment and foster creativity in manufacturing waste treatment products. On the present and future, it seems that entrepreneurship becomes absolutely necessary, because in line with the demands of the rapid change in the paradigm of natural growth and the change towards globalization where it demand innovation or change in paradigm of education.

Learning is not about making students polite, obedient, honest, respectful, loyal, and easy to get along with. However, students need to strengthen their creative thinking and independent learning. The nature of garbage disposal includes a curious attitude towards objects, natural phenomena, and living things. Improve cognitive ability in processing waste and gain knowledge and knowledge from experience[4]. Today, environmental problems are becoming increasingly serious. Environmental problems today are likened to a snowball that continues to grow. The problem is no longer local, regional or national, but world class. The environment is an absolute part of human life. In other words, the environment is closely related to human activities where humans find food and drink and fulfill other needs from the environment and natural resources.

In the 2013 curriculum, students need to play an active and creative role. The role of students here is to focus their creativity on turning used items that are no longer useful into everyday items. Basically every child has their own creativity in learning and there is no place to develop it. Therefore, the researcher raised this topic, where students wanted to develop their creativity by turning the garbage around them into something of value[5]. On the present and future, it seems that entrepreneurship becomes absolutely necessary, because in line with the demands of the rapid change in the paradigm of natural growth and the change towards globalization where it demand innovation or change in paradigm of education. Project-based entrepreneurship learning is considered a good method that will contribute to fostering creative personality in the environment. Researchers have explored the relationship between creativity and mastery of student concepts.

RESEARCH METHODS

The research method used was *weak experiment* or *pre experimental design.* Measurement of students' mastery of concepts was carried out through *pretest* and *posttest*, so the research design used the one-group pretest-postest design[6]. Research subjects were 36 students of 10th grade high school. Concept mastery was a test score of the evaluation results or *post-test* and *n-gain* that captured through multiple choice tests on the concept of pollution and environmental preservation. Measured aspects of cognitive domain according to Bloom have been revised by Anderson & Karthwohl, at the level of remembering (C1), understanding (C2), applying (C3), analyzing (C4), valuing (C5), and creating (C6)[7]. Data processing using parametric statistical tests and non-parametric statistical programs SPSS *for windows* 24. Hypothesis testing of students' concept mastery in this study used parametric statistical z test analysis, because the data were normally distributed.

RESULT AND DISCUSSION

The entrepreneurial learned process was the actual attitude/behavior of students facing real situations regarding environmental problems and the problems they face from student responses. According to research found that students' relationship with the environment motivates students to care, acquire environmental concepts, be aware of the environment, and participate in activities that have a positive impact on the environment. concluded that I could[8]. Student proficiency was measured using 15 multiple choice questions for students to complete. The amount of data stored is 36 students.

Statistics student's mastery of concepts process entrepreneurship project on waste management concept can be seen in Table 1.

TABLE 1. Statistics Frequency Value *N-Gain* Mastery Concepts Students

Category N-*gain*	Frequency	%
Low (<0,3)	**13**	**36**
Middle (0,3-0,7)	**20**	**56**
High (>0,7)	**3**	**8**

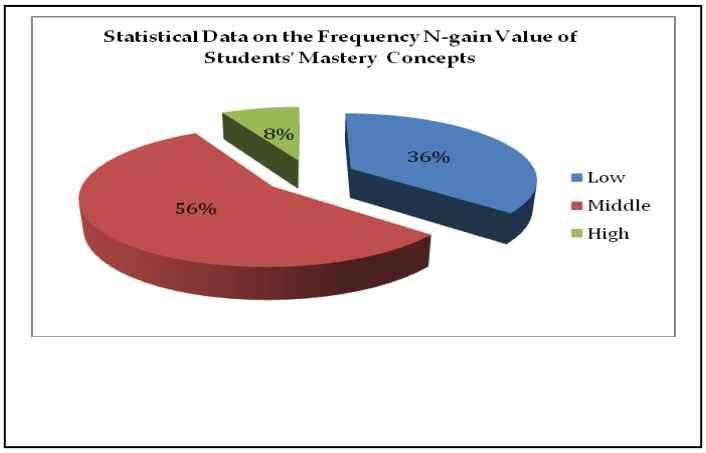

FIGURE 1. Diagram of value *the n-gain* mastery concepts students

From these data we can it is known that there has been an increase in the value obtained by students after the implementation of the learning entrepreneurship project on waste treatment materials. The acquisition of the average value of *N-gain* has increased. Results N-gain should be supported by other statistical test, which in this case using the Z-test as shown in Table 2.

TABLE 2. Z-test Statistics

Test Statistics[a]	
	posttest – pretest
Z	-4.030[b]
Asymp. Sig. (2-tailed)	0.000
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

Based on the data in the table above, note that the value of significance (2-tailed) was 0.000> 0.05 so that it can be concluded that H_0 was rejected and H_a accepted . Thus, a significant difference between the pretest and post test scores indicates that entrepreneurship has a significant effect on students' concept mastery.

DISCUSION

Therefore, there is a big difference between the results of the pre-test and post-test, indicating that entrepreneurship learning has a significant effect on students' mastery of concepts. Researchers express different opinions and produce different results from their research. That is, the relationship between the overall level of scientific creativity in the mastery of biological concepts is statistically significant, but the correlation coefficient between some scientific creativity skills and biological concept skills were very low. This means that learned concepts were a must, but not creativity. Entrepreneurship learning improves students' mastery of concepts. Specific preferences related to waste disposal. For example, students want to plan solutions to pollution problems, students have determination and dedication, and conceptualize the specific value of discovering students and benefiting the environment. As the research findings show, one of the goals of science education is to encourage eco-friendly people with better attitudes and behavior towards environmental protection[9].

Students want to go into the field to solve problems related to environmental damage, especially waste disposal in this case. Based on entrepreneurship, it increases students' desire to tackle the problems they face in their real world environment and in their learning activities. Similar to the notion of increasing environmental sensitivity, there is a need to raise awareness and environmental sensitivity about pollution and concept acquisition [10]. Students undertake a project to recycle waste into useful products. I am satisfied because I am actually taking steps environmental measures. In addition, students must be somewhat satisfied with taking and reacting to these behaviors. This shows that the concept of environmental management is one of the biological concepts related to human life. Therefore, it is recommended to use a learning approach that requires students to rediscover or build on the truths learned.

Science education aims to discover and apply the natural environment so that students can better understand it[11]. Learning the concepts will help you solve the problem of environmental degradation. Students need to understand environmental conditions and problems before taking environmental protection measures (Hansen, 2000). Since they are future leaders, planners, policy makers, and environmental educators, it is best to increase environmental awareness among the community, especially students[12]. However, based on statistical tests, the application of entrepreneurship-based learning provides evidence that it can affect students' concept acquisition and increase students' awareness and awareness. Analyzing some of the opinions of the figures above, we can conclude that mastery of concepts is not only understanding, but also the ability to apply the concepts presented in the problem. Understanding the concept can be interpreted as a way to understand or know well the process, behavior, and learning material. In science subjects, especially biology subjects, it is very important to master the concept. There is a relationship between one concept and another so that students have no difficulty in learning the concept of the next lesson.

One way to measure students' ability in physical concepts is to conduct an assessment. Opinions about evaluation are the process of determining student learning outcomes through measuring activities or learning outcomes. By using learning methods that involve students directly, they become passionate about learning and develop skills that have a positive impact on their learning outcomes and themselves. This evidenced by research which concludes that students need to experiment with various ways to improve higher order thinking skills [13]. Through learning entrepreneurship projects students are guided and directed how to take concrete actions/ behave systematically or through several stages, things intended to get used to in their daily lives. Students are expected to have the desire to take concrete actions, students are able to take concrete actions and are satisfied after taking concrete actions, students are interested in learning about waste treatment, students have certain preferences related to waste management, for example students like to plan a solution to solve a problem pollution, students have a determination and commitment, and the concept of a certain value that is found by students and beneficial to the environment.

One of the goals of science education is to enhance individuals who are environmentally conscious with better attitudes and behaviors with respect to environmental protection[14]. Students already have the desire to go directly to the field in solving problems related to environmental damage, especially in this case waste management. To increase environmental sensitivity, awareness and sensitivity to the environment regarding pollution and mastery of concepts must be increased[10]. Students doing projects to recycle waste into useful products, there will be a feeling of satisfaction because they have taken concrete action on the environment. In addition, students assume that the level of satisfaction in acting or responding, must be by taking action like that. Mastery of concepts is useful in solving environmental damage problems. Students need to understand the state of the environment and

environmental issues before taking environmental measures[15].

However, based on statistical tests provide evidence that the application of entrepreneurship projects affects the mastery of student concepts and can increase student awareness and awareness. Someone can be said to master the concept if the person really understands the concepts learned so that they can explain using their own words in accordance with the knowledge they have, but do not change the meaning that is in them[13]. Analyzing the opinions of some of the figures above can be concluded that mastery of the concept is not just understanding, but also able to apply the concepts given in a problem. Understanding the concept can be interpreted as a process, deed, a way to properly understand or know a true learning material. The use of learning methods that directly involve students will stimulate students' enthusiasm in learning and produce abilities that have a positive impact on learning outcomes as well as themselves. Students must try different methods to improve higher-order thinking skills and to develop risk taking. One of the higher order thinking abilities is creative thinking and mastery of concepts[16].

CONCLUSION

Students need to be trained to make a project that is useful for the environment and society through the concepts learned. After students can make a product and connect with the concept of waste treatment through learning entrepreneurship projects, the mastery of student concepts has increased. Mastery of student concepts has increased after learning the entrepreneurship project. Students and teachers give positive responses to learning the entrepreneurship project. Students state that learning can increase creativity, motivate learning, foster awareness, awareness and responsibility for preserving the environment. The teacher realizes the importance of teaching science not just understanding concepts, but how teachers can produce graduate students who will later be ready to face problems in real life by using the science they already have.

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