

PROCEEDING AISTEEL

THE FIRST ANNUAL INTERNATIONAL SEMINAR
ON TRANSFORMATIVE EDUCATION
AND EDUCATIONAL LEADERSHIP

DEVELOPING FUTURE TEACHERS' EDUCATIONAL MODEL



Medan, November 19th, 2016
Auditorium Building - UNIMED

THE
Character Building



ORGANIZED BY:
POST GRADUATE SCHOOL, STATE UNIVERSITY OF MEDAN
NORTH SUMATERA - INDONESIA
JLN. WILLEM ISKANDAR PSR. V - MEDAN ESTATE

PROJECT BASED LEARNING: TO IMPROVE STUDENT LEARNING INDEPENDENCE

Tri Effiyanti^{1*}, Deni Adriani², M. Fitri Rahmadana³

^{1,2,3}Faculty of Economy, State University of Medan, Medan, Indonesia

*Corresponding author: triellivanti@yahoo.com

Abstract-Microeconomics is the foundation subject of many advanced subjects in domain of economics education programs. For comprehensive understanding about this topic, students needs to learning independently. Independent learning will complement the student's understanding from what they got in the classroom. Unfortunately, independent learning is becoming a classic problem in micro-economics subject. Study habits of the students in the previous level which many depend on the classroom activity was still attached at the beginning level of the college. With project-based learning (PBL), researchers encourage the students to associate the insights that gained in the classroom into the ideas which must be confirmed in real circumstances. The purpose of this research is to improve student learning independence with project-based learning method. This research is a classroom action research which conducted in microeconomic subject in economic education department at the State University of Medan, Indonesia. Three cycles have been implemented. After third cycle, the students begin to show changes in learning styles. Students began to be not depend on the mandatory literature that provided by the teaching team. Students began to feel need of other literature beside of mandatory literature to comply an explanation of the phenomena that they found when implementing a project. Thus, students studied independently to resolve their problem. This study recommends the application of project-based learning on micro-economic subject and other relevant subjects. Basic subjects, such as microeconomics, has a critical point for other subjects. The level of understanding of this subject will affect the students absorption level in next advanced subject. The use of project-based learning is able to encourage independent learning for comprehensive understanding of the subject material.

Keywords: PBL, Learning Independence, Action Research

1. INTRODUCTION

Education is a process in order to influence the students in order to adapt to the environment and can develop in accordance with its potential. Basically, the process of education requires independent learning of students to produce effective learning. Learning independence is a condition of learning activities that not depend on anyone else, high motivation, and responsible to solve the problem of learning. Learning independence would be achieved if students actively control their own tasks, evaluate and plan further in learning something new.

Independent learning of students in the subject of microeconomics for this is still relatively low. It can be seen from the learning environment of students in the class who tend to be passive. Students are less responsive to micro-economic issues that are presented by the lecturers. Furthermore, the tasks created by the students is done only from the material in a mandatory textbook, the tasks have poor variety of content and reference. These indicators indicate students have less learning independence. Lecturers must always be reminded that students should enrich the knowledge from a variety of references and able to associate the phenomena with the topics covered in class. The lack of student learning independence is suspected because it is less precise methods and learning approaches used.

To solve these problems researchers apply project-based learning model (Project-Based Learning) in micro-economic class. Project-based learning is considered as the relevant solutions to overcome the problems of teaching in courses microeconomics. Project-Based Learning focuses on the concepts and the main principles of a discipline, involving the various parties in practice that are relevant to the learning objectives, thus giving the opportunity to the students to work autonomously construct how to learn on their own, and ultimately produce works valuable and realistic. Project-Based Learning emphasizes learning activities that are relatively long duration, holistic, interdisciplinary, student-centered, and integrated with practice and real-world issues. Through this learning ability of students is expected to grow according to its potential. In addition, this study will produce an active student learning, faculty act as a facilitator and motivator in learning. This study aims to improve student learning independence with the implementation of project-based learning course on microeconomics.

2. THEORITICAL REVIEW

2.1 Independent Learning

According to Ali and Asrori (2005), "Independence is an internal force individuals obtained through the process of individuation". Individuation process is the realization of selfhood and the process towards perfection. According to Hamzah B. Uno (2007), "Methods of studying the appropriate speed itself is also called self-learning". The purpose of the student's own pace is has its own responsibility, in accordance with the speed of his own to create a successful learning. Everything is based on specific learning objectives and an assortment of activities with a variety of learning resources related.

Tirtarahardja and S.L. La Sulo (2005) states that "Independence in learning is learning that the ongoing activity is driven more by their own volition, his own choice and their own responsibility". The thrust of the internal individual has a key staple in children's learning activities. Obtaining the results obtained child's learning, both specific skills and competencies to be able to achieve if vicariously in the process of acquiring the learning outcomes. While Broad (2006) stated that the responsibility is the most important thing in learning independence. Responsibility is man's consciousness of behavior or intentional act or not on purpose.

Thus, it can be concluded that independent learning is a learning process conducted over the internal drive of the individual without relying on others, has its own responsibility to master the competencies in order to solve a problem. In this case the student will have a plan in learning, their desire to solve problems on their own, participate actively, their desire to move forward, learn the initiative himself, and evaluate yourself.

In addition to its potential from birth, the development of self-reliance is also influenced by a variety of stimulation that comes from the environment. According to Ali and Asrori (2005), there are a number of factors that affect the independence of the study are as follows:

- 1) Gene or the offspring of parents. gene or the offspring of parents. Parents who have high independences as nature often produce children who have the independence as well.
- 2) The pattern of parenting. How parents parenting will affect the development of the child's independence.
- 3) The system of education in schools. The education process in schools that do not develop democracy education and tend to stress of an understanding without argument will inhibit the development of independence. Instead, the process of education which emphasizes the importance of respect for the child's potential, granting rewards, and will facilitate the creation of a positive competitive independence.
- 4) The educational system in the community. System of a society that overemphasize the importance of hierarchical social structure, a feeling of insecurity or seized as well as lack of respect for the manifestation of the potential in productive activities, may hamper the development of self-reliance. Conversely, a safe community environment, appreciate the expression of the child's potential in the form of various activities, and not too hierarchical will stimulate and encourage the development of the child's independence.

Based on the description, it can be concluded that independent learning is influenced by heredity, upbringing of parents, the education system in the community and in the school education system. In the system of education in schools can not be separated from the role of teachers in managing learning. The use of innovative learning model that will promote independence and creative students in completing the tasks of learning.

2.2 Project Based-Learning

Iwamoto (2016) found that the group involved in the project and take an active role in the learning involved obtaining a higher yield on a multiple choice exam compared with the group that was not involved in the project. The key indicators for the student's academic performance are: 1) high self-efficacy; 2) high perceived level of control; and 3) the growth mindset (Iwamoto, 2016) So that, Information on individual characteristics and context right challenge for him becomes an important aspect in the implementation of project-based learning (Meyer et al., 1997). Furthermore, Barron (1998) has identified that the learning activities beginning with project based learning is the important things besides (a) Determine the Appropriate learning objectives to deep understanding; (B) provide scaffolds such as embedded learning, learning tools sets, and contrast cases, (c) ensuring opportunities for self multiple formative assessment and revision; and (d) develop social structures that promote participation and a sense of agency.

Project-based learning can be viewed as a method, models, or approaches that focus on core concepts and principles of a discipline, in order to facilitate the students are actively involved in some investigation and problem solving in real-world problems,

Project-based learning can be viewed as a method, the model or approach that focuses on the concept and principles of the core discipline, facilitate the students are actively involved in the investigation, solving real-world problems, tasks meaningful other, and produce a real product with the aim of increasing motivation, ability to think critically, understand the material thoroughly, and improve the skills of the students (Jagantara et al, 2014)

Widyantini (2014) argued project-based learning is a learning model that provides the opportunity for teachers to manage the classroom learning by involving project work. Project work includes tasks that are complex based on problems (problem) as the first step in collecting and integrating new knowledge based on their experiences in the move in a real and requires students to perform the activities of designing, solve problems, make decisions, conducting investigations, and gives students the opportunity to work independently or in groups. The end result of the project work is a product which include written or oral reports, presentations or recommendation.

Learning projects can be set up in collaboration with a single instructor or instructors double, while learners learn in a collaborative group between 5-7 people. When learners work in teams, they found the skills to plan, organize, negotiate and build consensus on issues task to be done, who is responsible for each task, and how the information will be collected and presented. Skills identified by learners is a very important skill for success in life (Hutasuhut, 2010).

Learning that utilize the project is inseparable part of the research and issues. Students must know various information from recent studies to address issues and topics that should be solved. Furthermore, students are then able to design synthesis in the form of problem-solving applicative project. In this process the students are stimulated power of reason, creativity, development of ideas, initiative, and courage to take strategic decisions. This project can be done individually or in groups.

PBL implementation steps undertaken in this study was adapted from the procedure PBL Baron (1998) adapted to the characteristics of students who are the subject of research. First, Design collaboration: Students are divided into several groups. Then the students are given a topic of current issues that correspond to the learning objectives. This topic will stimulate students' curiosity. Second, Assessment: After the project is implemented, then assessed by the lecturer. Assessment is useful to confirm the suitability of understanding possessed by students with learning objectives. Third, Revised: In the latter case, the student was asked to make improvements on the aspects that have not been right. In this process, the lecturers provide guidelines so that students know the strategies to implement the project properly and is able to achieve the learning objectives. Lastly, Presentation: After going through a series of improvements the student must submit the achievements of the project is performing in front of the class. The results of this project should be an indicator of achievement of learning goals. In general, this procedure can be reviewed at the figure below:

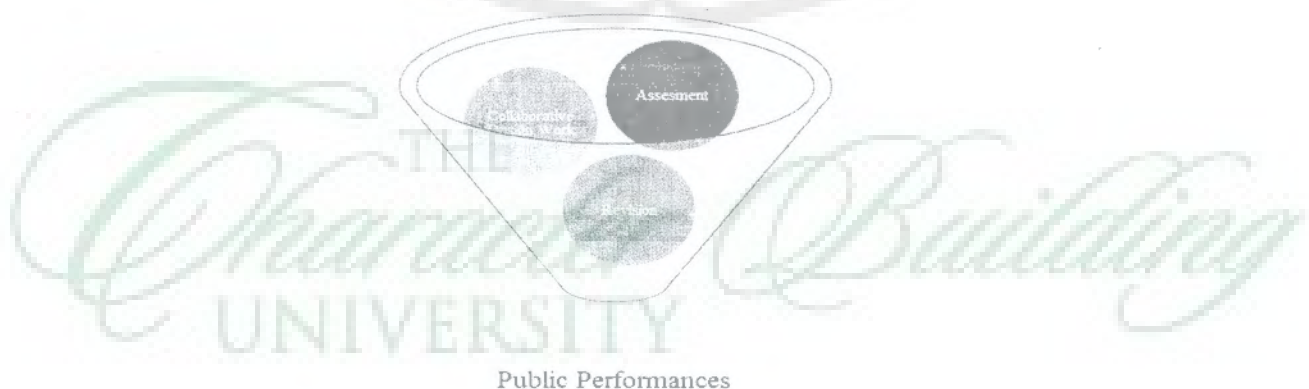


Figure 1: Project Based Learning (Adapted from Baron, 1998)

2. METHOD

This research was conducted in the course of Microeconomics first half with a sample of 40 people. Using purposive sampling technique. This type of research is the Classroom Action Research (Classroom Action Research). This research adapt the procedure of action research that developed by <http://aisteel.unimed.ac.id/proceeding-aisteel-2016/>

Lewin (1945) and Adelman (1993). Cycle Action Research is done through three cycles consisting of four stages in each cycle, including: 1) planning action, the planning phase of this, researchers conducted a discussion of PBL implementation techniques that will be done in class that became the subject of research. PBL implementation procedures are documented in the syllabus, 2) Implementation of the action, stage acts done in the classroom to conduct learning activities in accordance with what has been arranged in syllabus and the cycles that have been planned. 3) observation, independent learning qualitatively observed through observations made by the lecturers during the learning process in the classroom. 4) Reflection, from the process of observation, researchers and lecturers to identify weaknesses in the application of PBL action. Such reflections will generate corrective measures in the next cycle.

3. RESULT AND DISCUSSION

In PBL that has been done, the researchers challenge the students to learn to work with a group looking for a solution for the existing project. Projects carried out is used to stimulate the curiosity of students so motivated to complete the task and responsibility. Researchers form the group consisting of 4-5 members. Then the researchers gave the project to be discussed and resolved in groups. At each meeting, one of the groups presented the results of the class, while the other group responding to the group who presented the results. Researchers and students confirm knowledge as to achieve understanding in accordance with the purpose of learning. Microeconomics level of independent learning of students in this study can be seen from the prior action until the end of the third cycle class action. Increased independence of Microeconomics student learning can be observed during the group discussion, presentation of the results of the discussion and the results of student assignments.

Researchers of this action carried out in three cycles. A cycle I Microeconomics student learning independence there have been improvements, but have not achieved the expected results. The first cycle was conducted at the market price of the material. In Cycle I, researchers gave the project to the students to list the chili price in the market. Of the project the students are required to review and compare it with the price of chili pepper prices the previous week and the week after. Commodities chili selected because they tend to fluctuate, making it easier for students to understand the concept of supply, demand and market price as competencies to be achieved. In these projects the students are also asked to make a bargain price of chili to obtain the agreed price of the pepper. After getting the pepper price data, students are asked to identify a phenomenon that occurs based on theory and previous research. Students are expected to identify the problem and find the answer through a variety of literature. Furthermore, the students were asked to develop a synthesis of solving problems through advanced research or policy recommendations. However, in the first cycle, students learn self-reliance is not so visible. Of draft papers and presentations, the student has not shown that he had read various scientific literature and have not been able to provide feedback and recommendations as expected. Overall the students are still passive and still less crowded atmosphere of discussion and in the end still be dominated by the lecturer.

Cycle II carried out on the material elasticity of demand and supply. In this cycle, the researchers gave the project to the students to assess consumers regarding the price of pepper in the market. Of the project students were asked to review the consumer about the price of chili and compare it with the price of chili week before and a week after. After getting the pepper price data, students are asked to identify a phenomenon that occurs based on theory and previous research. In the second cycle, the students have started learning independence there was an increase. Of draft papers and presentations, students have started to show that he had read various scientific literature and has been able to provide feedback and advice. The increase occurred is still on some students, but most of the other students still passive. Discussion has started bustling atmosphere.

Cycle III carried out on the consumer behavior topic. In this cycle, the researchers gave the project to the students to assess consumers that classified based on those revenue/economy level regarding chilli prices in the market. Of the project the students were asked to review the purchasing power of consumers who have low economic income, medium and high to the chili. After getting the data, students are asked to identify a phenomenon that occurs based on theory and previous research. In the third cycle, students learn independence there have been improvements. Of draft papers and presentations, students had already shown that he has read the scientific literature and has been able to provide comments and recommendations on the phenomenon. Overall the students were active and interactive atmosphere of discussions have occurred between the presenter and the audience. Because the learning objectives have been achieved, the research cycle was stopped in the third cycle.

4. CONCLUSIONS

Of the three cycles have been implemented, the students begin to show changes in learning styles. Students begin does not depend on the material shall be provided by the teaching team. Students begin to require other literature outside of literature required to comply with an explanation of the phenomena that they get when implementing a project. By itself independent learning of students appear along with the implementation of the project that has become his responsibility. The study recommends the application of project-based learning course on micro-economic and other relevant subjects. basic subjects, such as microeconomics, has a critical point for other subjects. The level of understanding of this course will affect the absorption of students in the subject of the next. The use of project-based learning student is able to encourage independent learning towards a comprehensive understanding of the material.

Researchers recommend to the educators, especially in microeconomics course, to use PBL in order to maintain the quality of student learning independence. While the implications of learning independence is the achievement of learning objectives and learning outcomes. Researchers also recommended the college leaders to advocate the educators to use PBL in the implementation of the teaching. Further research can be done by modifying the strategy of PBL to be applied in the classroom. Innovation PBL can be done by adjusting the technical application of PBL to student characteristics, availability of teaching materials, and availability of campus facilities. Strategic use of PBL could be a key issue in learning innovation as disclosed by Baron (1998). Furthermore, subsequent researchers can use different research methods such as pure experimental or quasi experimental.

REFERENCES

- [1] Adelman, Clem, "Kurt Lewin and The Origins of Action Research," *Educational Action Research*, vol. 1, no. 1, pp. 7-24, 1993
- [2] Ali, Mohammad and Mohammad Asrosi, *Psikologi Remaja*. Jakarta: PT. Bumi Aksara, 2005.
- [3] Baron, Brigid J.S., Daniel L. Schwartz , Nancy J.Vye , Allison Moore , Anthony Petrosino, Linda Zech & John D. Bransford, "Doing With Understanding: Lessons From Research on Problem- and Project-Based Learning," *Journal of the Learning Sciences*, vol. 7:3-4, pp. 271-311, 1998.
- [4] Broad, James, "Interpretations of independent learning in further education," *Journal of Further and Higher Education*, vol. 30, no. 2, pp. 119-143, 2006.
- [5] Hutasuhut, S., "Implementasi Pembelajaran Berbasis Proyek (*Project-Based Learning*) Untuk Meningkatkan Motivasi Dan Hasil Belajar Mata Kuliah Pengantar Ekonomi Pembangunan Pada Jurusan Manajemen FE UNIMED," *PEKBIS (Jurnal Pendidikan Ekonomi Dan Bisnis)*, vol. 2, no. 01, 2012.
- [6] Hamzah, B. Uno, *Profesi Kependidikan*. Jakarta: PT. Bumi Aksara, 2007.
- [7] Iwamoto, Darren H., Jace Hargis and Ky Vuong, "The Effect of Project-Based Learning on Student Performance: An Action Research Study," *International Journal for the Scholarship of Technology Enhanced Learning*, vol. 1, no. 1, pp. 24-42, 2016.
- [8] Jagantara, I Made Wirasana., Putu Budi Adnyana, Ni Luh Putu Manik Widiyanti *e-Journal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi IPA*, vol. 4, 2014.
- [9] Lewin, Kurt, "Action Research and Minority Problems," in *Resolving Social Conflicts*, G.W. Lewin, Ed. New York: Harper and Row, 1946.
- [10] Meyer, Debra K., Julianne C. Turner and Cynthia A. Spencer, "Challenge in a Mathematics Classroom: Students' Motivation and Strategies in Project-Based Learning," *The Elementary School Journal*, vol. 97, no. 5, pp. 501-521, 1997.
- [11] Tirtahardja, Umar & La Sulo, *Pengantar Pendidikan*. Jakarta: PT. Rineka Cipta, 2005.
- [12] Widyantini, Theresia. (2016, April 10). Penerapan Model Project Based Learning (Model Pembelajaran Berbasis Proyek) dalam Materi Pola Bilangan Kelas VII [Online]. Available: <http://p4tkmatematika.org/2014/04/penerapan-model-project-based-learning-model-pembelajaran-berbasis-proyek-dalam-materi-pola-bilangan-kelas-vii/>