TRANSFORMATION OF THE MINDSET AND ENTREPRENEURIAL SKILLS OF POLYTECHNIC STUDENTS THROUGH A PROJECT-BASED LEARNING APPROACH

Hapsa Usman[1)], Nonce Farida Tuati[2)], Deetje W. Manuain[3)]
[1,2,3)]Accounting Department, Kupang State Polytechnic,
hapsagemini1978@gmail.com

ABSTRACT

Entrepreneurship learning from an early age is needed to improve the progress of a country. The presence of entrepreneur groups can create jobs, increase welfare and per capita income, and reduce unemployment. This research aims to find ways to improve entrepreneurial mindset and entrepreneurial skills through Project-Based entrepreneurship learning. The method used in this study is an action research with a Project-based Learning (PJBL) approach applied to 2nd semester students of the public sector accounting study program with 80 students divided into 16 groups as informants. The findings in this study show that PJBL produces product development outputs from each student group team formed and in accordance with the Minimum Completeness Criteria (KKM). Therefore, PJBL plays an important role in improving students' entrepreneurial mindset and entrepreneurial skills in honing their knowledge and skills to become entrepreneurs.

Keywords: Entrepreneurial mindset; Entrepreneurial skill, Project-based Learning.

1. INTRODUCTION

Technology has become the basis in human life (Aprillinda, 2019). Everything seems to be infinite and unlimited due to the development of the internet and digital technology. The current era has affected many aspects of human life, both in the fields of economy, politics, culture, art, including the world of education. All efforts are made to adapt to the new era. The concept of *society 5.0* is a concept that has become part of the strategic plan adopted from Japan through the thinking of "*Basic Policy on Economic and Fiscal Management- ment and Reform*" (Zulkarnain, 2020). The concept of *society 5.0* offers solutions to overcome all challenges arising from the era of the industrial revolution 4.0 accompanied by the emergence of various disruptions as a sign that the world is increasingly full of turmoil, uncertainty, complexity, and ambiguity (DITPSD, 2021).

Currently, Indonesia is entering a disruptive era of learning towards *society* 5.0 which is faced with the demand for its human resources to become human balancers in achieving economic progress through solving various problems related to the empowerment of economic development and social problems, especially in the field of education. The world of education has a great responsibility to train a generation that is ready to run the *era of society* 5.0, so strategic efforts, such as instilling a way of thinking that must be habituated to be analytical, critical, and creative, are very necessary. This way of thinking is termed *Higher Order Thinking Skills* (HOTS) (Binus University, 2020).

A country can achieve prosperity, if the country has at least 2% of the total population of entrepreneurs, while one of the requirements to become a developed country is that the ratio of the number of entrepreneurs reaches at least 14% of its total population (Chrysnaputra & Pangestoeti, 2021). *Entrepreneurship* is an important mechanism to encourage the selection process, namely creating a diversity of knowledge that plays an important role in economic growth (Audretsch & Keilbach, 2004). In addition, (Schramm, 2006) defines *entrepreneurship* as a process experienced by a person or a group of people to assume economic risks in an effort to create a new organization and exploit new technologies or innovation processes that produce value for others. *Entrepreneurship* also plays a role in bridging the gap between knowledge and the market, creating new businesses, and bringing new products to the market (Wijatno, 2009).

In previous research, *entrepreneurial skills* refer to activities or practical knowledge to build and run a business (Mamun, Kumar, Ibrahim, & Yusoff, 2018). On the other hand, a study of 427 students as a sample found that to create an entrepreneurial spirit to form *entrepreneurial skills*, the family environment factor has a strong influence, because of the perception of students towards their parents' performance as *entrepreneurs* (Hahn, Minola, Bosio, & Cassia, 2020).

The application of principles and methodologies towards the formation of life skills or life *skills* of students through the curriculum developed by the school, one of which is carried out by the development of *entrepreneurial* education. In addition, *the entrepreneurial* competence given to students makes them effective figures in their lives.

If students have entrepreneurial skills, they can become more responsible individuals for their personal and social lives.

Jufri and Wirawan (2014) mentioned that to create a good *entre-preneur* spirit, the internalization process does not only begin when the child has entered school age, but the process can begin as the child develops. Before children enter school age, the process of internalizing entrepreneurship can be carried out through education by parents and other family members. This process can be continued by teachers, when children enter school age through various ways, both through the introduction of *entrepreneurship* in the learning process in the classroom and outside the classroom. In the learning process in the classroom, teachers can take advantage of *the Project-based Learning* (PJBL) learning model to introduce the concept *of entrepreneurship* to students.

Project-based Learning (PJBL) is a learning model that focuses on the central concepts and principles of a discipline, engages students in problem-solving activities and other meaningful tasks, provides opportunities for students to work autonomously to construct their own learning, and leads to the creation of valuable and realistic products (Thomas, Mergendoller, & Michaelson, 1999). According to Boss and Kraus (in Yunus, 2014), PJBL is a learning model that emphasizes student activities to solve various *open-ended* problems and apply their knowledge in working on a project to produce a certain authentic product. By using PJBL, *problem-solving* skills and efforts to cultivate Higher *Order Thinking Skills* (HOTS*)* in students can be improved (Maryani & Fatmawati, 2018).

The learning model in this study is applied to 2nd semester students of the Public Sector Accounting study program which focuses on the fields of Online business development, Creative Economy, Culinary, and marketing and *its output is expected to produce students who are compatible*, able to think creatively, and have a leadership spirit, dare to take risks, obey business ethics, have expertise in the field of technology, think critically, think logically, be able to communicate non-verbally, be able to prepare plans, have strategic planning, be able to build a work team, be able to manage time, and follow trends. Facts show that Vocational graduates still find it difficult to face the challenge of meeting the needs of reliable human resources in the world of work (Neisya & Pramudita, 2021).

In general, the big challenge faced is that not all universities are able to develop the curriculum together with the world of work and have facilities that are not up to standard (Neisya & Pramudita, 2021). These challenges are also faced by the Kupang State Polytechnic in the implementation of quality and relevant education for the industrial world. In addition, the majority of universities still tend to apply a monotonous learning model, so that students are only able to absorb the material without the ability to implement the material they have learned in class. In addition, this condition also has an impact on the low level of student creativity. This is in line with the results of a study that states that the PJBL model has a significant effect on students' creative thinking skills (Rohman, Ishafit, & Husna, 2021). Therefore, the learning model for students needs to be balanced with the field learning model.

The existence of these challenges can be made a priority in order to improve the condition of students in universities, namely students so that they are in line with the needs of the world of work, so that it becomes an advantage of vocational universities. Kupang City is dominated by university colleges with a total of 18 university universities (Ministry of Education and Culture, 2021). To answer these challenges, this study harmonizes learning in the classroom through *the Project-based Learning model* which is expected to be able to trigger and spur students to play an active role in the learning process to improve the *entrepreneurial mindset* and *skills* of Kupang State Polytechnic students. From this description, this study aims to find ways to improve *entrepreneurial mindset* and *entrepreneurial skills* through entrepreneurship learning.

This research aims to:

1. To find out the process of applying the project-based learning model in improving Entrepreneurial Mindset and Entrepreneurial Skills
2. To find ways to improve entrepreneurial mindset and entrepreneurial skills through entrepreneurship learning

2. THEORETICAL STUDIES

Concept Entrepreneurial Mindset

An entrepreneurial mindset is basically not achieved with a business plan, but by developing personal attributes and behaviors related to how to identify opportunities and enthusiasm and commitment in realizing them (Gillin & Hazelton, 2020). Furthermore, (McGrath & MacMillan, 2000) states that an entrepreneur-oriented person with an *entrepreneurial mindset* (EM) is more selective about living with uncertainty than avoidance, seeing things more simply than others who see them in a complex way, willing to learn something that comes from taking risks. The same thing was conveyed by the Worcester *Polytechnic Insitute* which stated that EM is a *problem-solving* approach as a model for recognizing opportunities to actualize ideas (Bodnar, Jadeja, & Barrella, 2020). So, the tendency to find, evaluate, and take advantage of opportunities refers to EM. In addition, the spirit *of entrepreneurship* is also symbolized as EM, which

is a form of innovation actualization from the findings of opportunity development.

Entrepreneurial mindset in education aims to help students access entrepreneurship subjects and facilitate the development of teaching methods to foster *an entrepreneurial* spirit. The importance of *entrepreneurship* education to encourage the development of EM in students (Gentile, Dal Grande, & Fulantelli, 2014). In this context, *entrepreneurship* education plays a dual role in the process of knowledge and skills in entrepreneurial activities with learning methods as well as learning subjects (Kouakou, Li, Akolgo, & Tchamekwen, 2019). The same opinion is also explained through the results of research on many factors that can affect the entrepreneurial skills of the millennial generation in the *N-Power* Program in Kogi state, Nigeria (Enimola, Orugun, & Nafiu, 2019). These factors include *mindset*, *entrepreneurial spirit*, interest, and readiness of benefits that are influenced by the entrepreneurial skills of the youth in the program (Enimola *et al.*, 2019).

Academics can contribute to community development by creating new business opportunities through their *entrepreneurial skills*. Therefore, the formation of entrepreneurial skills is sought through involvement in entrepreneurial activities, both in the learning environment and the family environment. A previous study using 427 students as a research sample found that the creation of an entrepreneurial spirit to form *entrepreneurial skills* that have a strong influence is a family environmental factor (Hahn *et al.*, 2020). This is due to the perception of students towards the performance of parents as entrepreneurs (Hahn *et al.*, 2020).

Model Project Based Learning

As the core of learning1. According to Thomas et al, project-based learning (PjBL) is a learning model that provides opportunities for lecturers to manage learning in the classroom by involving project work2. According to Trianto, project-based learning is defined as a teaching that tries to relate technology to everyday life problems that are familiar to students, or lecture projects on campus. From some of the opinions above, it can be concluded that project-based learning is a project-based learning activity, where students and teachers develop a project whose implementation is associated with daily life problems.

According to the Buck Institute for Education4, some of the characteristics of project-based learning include: 1) students as decision-makers and create frameworks; 2) there is a problem whose solution is not predetermined; 3) students as process designers to achieve results; 4) students are responsible for obtaining and managing the information collected; 5) conducting continuous evaluation; 6) students regularly review what they are doing; 6) the final result is in the form of a product and its quality is evaluated; and 7) the classroom has an atmosphere that tolerates error and change.

From the characteristics mentioned above, it is known that the active role of students is indeed necessary to create a situation where the project that is a task and will be carried out by the student can run well. For this reason, mutual cooperation in completing tasks is very necessary so that the goals of project-based learning can be carried out properly. Student business projects can be measured by several indicators that can be implemented by looking at the following frame of thinking:

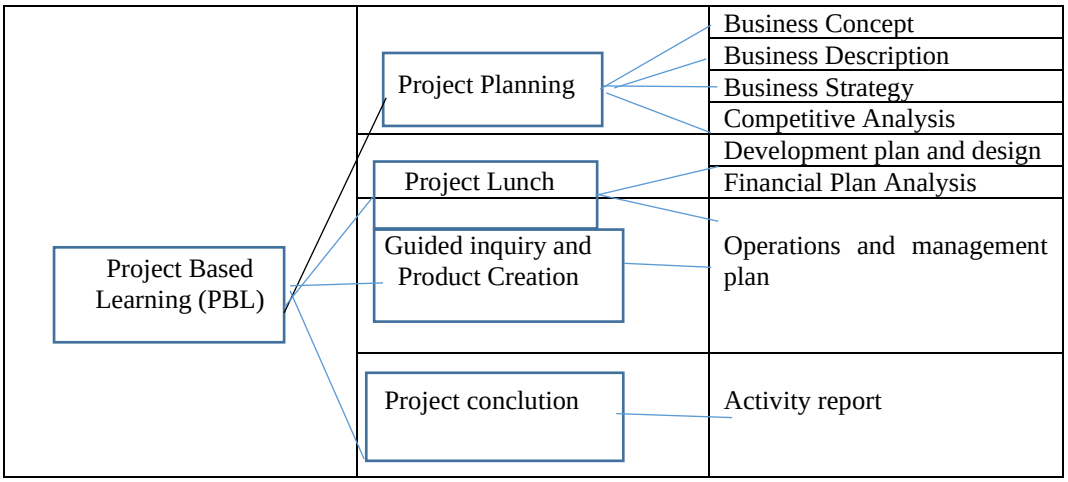


Figure 1. Syntax and business plan project of Kupang State Polytechnic students

From the syntax and business plan projects that will be carried out by students in entrepreneurship courses by students, all study programs at Ploiteknik Negeri Kupang are carried out in accordance with the plan that has been determined in advance, so that later maximum and satisfactory results of activities will be obtained. Especially student learning outcomes and experiences obtained by students in implementing business plans that have been made previously. The following is the

concept of improving student learning outcomes, namely: With the application of the project-based learning model in entrepreneurship courses, it is hoped that student learning outcomes will increase. Where the success of project-based learning depends on the role of lecturers and the active participation of students in the learning process. With the research concept:

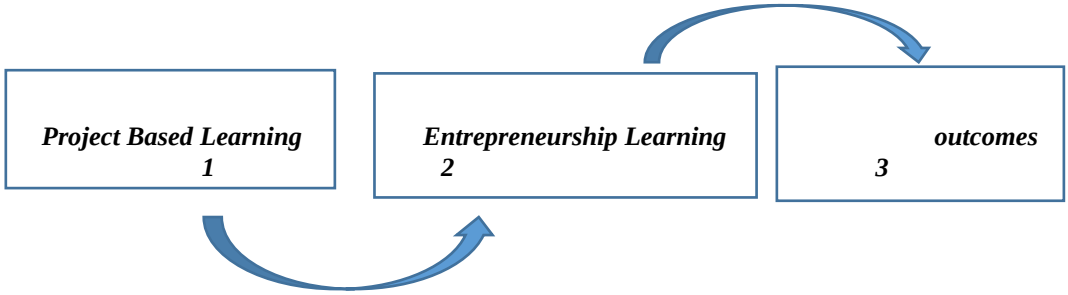


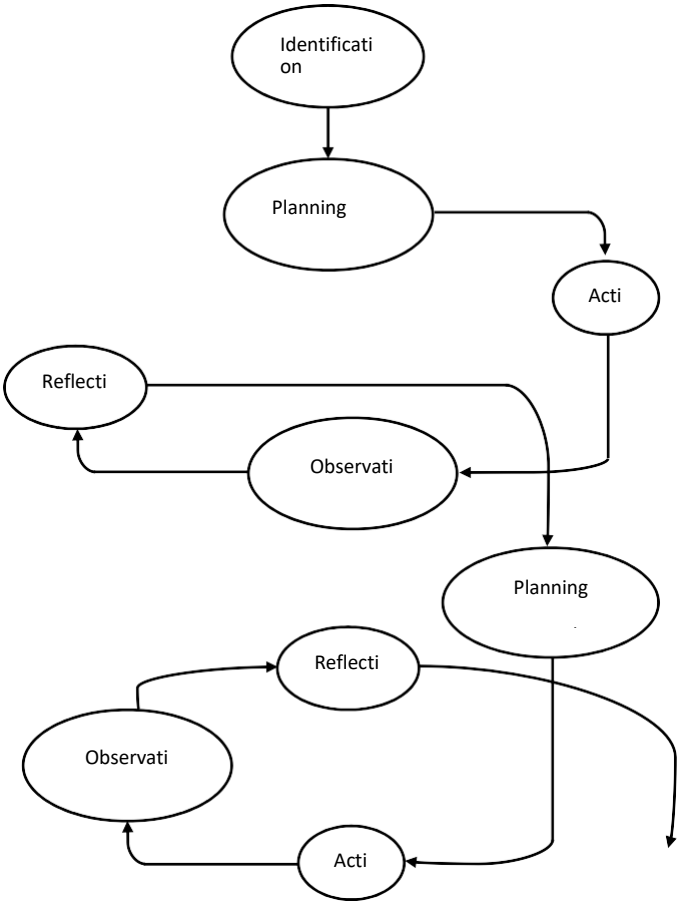
Figure 2 Concept of project-based learning

3. RESEARCH METHODS

This research is a type of action research through *the Project-based Learning* (PJBL) method. Action research is defined as a systematic study with the aim of gaining understanding, developing practical reflections, increasing positive change, and improving the lives of individuals involved in the action (Mills, 2000). Data collection techniques through interviews and observations. With a total of 90 students consisting of 80 students as participants, the head of the Department, the Head of the Study Program and the effective lecturer of the Entrepreneurship Course as informants. The determination of 20 groups of 80 students was based on the need for data regarding the profile of the Department, Student Character, and Entrepreneurship learning model.

This stage of research refers to the Hopkins spiral model. According to Hopkins (1993) (in Sanjaya, 2016), the implementation of action research is carried out by forming a spiral starting from feeling the existence of a problem, preparing a plan, carrying out actions, making observations, holding reflections, replanning, carrying out actions, and so on. The spiral model developed by Hopkins is shown in Figure 1 (Sanjaya, 2016). Based on the Hopkins model, the action research steps carried out in this study are described below. The first stage of action research begins by identifying the area to be researched. At this initial stage, the researcher has conducted a pre-cycle on two classes of Semester 2 students of the Public Sector Accounting Study Program. The pre-cycle is used to determine the target area used for research. The researcher determined Semester 2 students which were used as research areas. The selection is based on the relevance of the topic of discussion studied by students. Furthermore, the researcher continued the pre-cycle by compiling questions related to *entrepreneurial mindset* and *entrepreneurial skills.*

The second stage, the researcher formulates an action plan. At this stage, the researcher identifies and formulates the problem. The results of problem identification and formulation show that the learning model applied is too monotonous, so that students experience saturation in the learning process. In addition, there is a lack of knowledge and practices about *entrepreneurship* owned by students. Therefore, the researcher chose action research with *the Project-based Learning* (PJBL) learning model with the aim of developing *an entre-preneurial mindset* and *entrepreneurial skills.*



Source: Sanjaya (2016).

Figure 1. Action Research according to the Hopkins Model

The third stage, the researcher carried out actions and observations from the formulation of the plan that had been prepared previously, which began by training *public speaking* students totaling 16 Mhs groups through class discussions with the topic of project *pro- progress* discussion whose *output led to product development including: (1)* What products are proposed; (2) The reason why you choose the product; (3) Benefits and uses of the product; (4) Product attributes ranging from the name to the product appearance design; (5) The selling price of the product, and (6) The calculation of the estimated profit of the product. During the implementation of these actions, researchers also made observations at the same time. As a reflection, after the data was obtained from the results of the action test and observation from the phasing of the first cycle to the third cycle, the researcher drew a conclusion whether the three cycles were continued or stopped on the basis of the results of the action trials and observations that had been carried out.

4. RESULTS AND DISCUSSION

Pre-Cycle

1. Problem Identification Stage Kupang State Polytechnic is a State University engaged in vocational education. The implementation of learning outcomes is 60% practice and 40% theory, while entrepreneurship learning activities are implemented in accordance with the field of competence The focus is online business development, various culinary and marketing. The results of the interviews show that the knowledge and application of entrepreneurship in daily life is still very low. The results of the pre-cycle interview are presented in Table 1.

Table 1.1 Data on Pre-Cycle Interview Results

No.	Question	yes	Not	%
1.	Do you have a smartphone/similar?	73	7	91,25
2.	Have you started your business online (individual or group)?	15	75	18,75
3.	Have you ever calculated the cost of production?	18	62	22,5
4.	Have you ever calculated the selling price of a product?	18	62	22,5
5.	Is your smartphone often used for games?	70	10	87,5
6.	Is your smartphone already used for business?	10	70	12,5
7.	Are you familiar with the Google My Business app and Google Primary?	3	77	3,75
8.	Are you familiar with the terms Dropship and Dropshiper?	3	77	3,75
9.	Have you ever ordered a product on one of the marketplaces?	9	71	11,25
10.	Have you ever promoted on the marketplace?	2	78	2,5
Average				27,6

Source: Primary data processed (2024).

The data in Table 1 is the result of an analysis of interviews at the pre-cycle stage with 80 participants which shows that the level of understanding of online business and online marketing in entrepreneurial learning is 27.62%. This number is still relatively very small and shows that students or participants need to take action to understand more about online business and marketing to improve their entrepreneurial mindset and entrepreneurial skills.

Cycle I

2. Planning Stage

In bloom theory, the taxonomic form of bloom has three domains (cognitive, affective and psychomotor) that must be mastered or studied by Independent Entrepreneurship participants. Bloom's taxonomic goals are theoretically divided into three domains, namely: cognitive domain, which contains behavioral behaviors that emphasize intellectual aspects, such as knowledge, understanding, and thinking skills. affective domain, containing behavioral behavior. The point is that a person can always understand, live and practice. In the activities of the Independent entrepreneurship program in strengthening the student entrepreneurship ecosystem, 3 basic competencies are expected which are derivatives of Bloom's mind in the concept of Bloom's taxonomy, namely:

Table 2.1 Entrepreneurial Competencies

It	Entrepreneurial competence	
1.	Cognitive competence	Know, Understand, Apply, Analyze,Evaluate, Create or Start
2.	Psychomotor Competence	Imitation, use, assembling and designing
3.	Affective Competencies	attitudes and behaviors in response speed

Sumber: ..... (thn)

In addition, other competencies needed are the ability to think critically, reason, create, communicate, collaborate, and solve problems (Unikarta, 2021). The most important thing is a character that can reflect the profile of Pancasilaist students, such as curiosity, initiative, persistence, adaptability, leadership spirit, and social and cultural concern (Unikarta, 2021). These competencies can be obtained, if students are able to understand and implement what is conveyed by the lecturer in class. Therefore, the researcher prepares a plan based on the findings of problems that occur in the classroom at the planning stage.

This study uses the Project-based Learning (PBL) learning method as a project-based learning strategy to improve students' learning development so that they are able to plan, implement, and evaluate projects applied in classroom learning (Shih & Tsai, 2017). Activities carried out in the planning stage through the PBL method include: (1) Developing a

Learning Implementation Plan (RPP) in accordance with the Basic Competencies (KD) that will be achieved by lecturers and students; (2) Compiling learning materials; (3) Determine the learning media; and (4) Creating learning scenarios.

Cycle II

3. Action and Observation Stage I

In the initial stage of the action, the researcher provided material to the participating students in accordance with the Learning Implementation Plan (RPP) that had been made previously. In addition, researchers also practice public speaking skills through class discussions. Action activities in Cycle II are shown in Table 2.

Table 2. Schedule of Learning Activities in Cycle II

Cycle	meeting	Day /Date	Hour	Material	Learning media
II	1	Tuesday, 19/03/2024	7.30-10.30	Design Thinking	Face-to-face
II	2	Tuesday, 16/04/2024	7.30-10.30	Business Ideas and Opportunities	Face-to-face
II	3	Tuesday, 23/04/2024	7.30-10.30	Digital Marketing	Zoom Meeting
II	4	Tuesday, 07/05/2024	7.30-10.30	Product Design	Face-to-face
II	5	Tuesday, 14/05/2024	7.30-10.30	Business Plan	Face-to-Face and Presentation
II	6	Tuesday, 21/05/2024	7.30-10.30	Market validation	Selling practice

Source: Primary data processed (2024).

Observations were also carried out in this study along with action trials. Observations are carried out by fellow lecturers (observers) through the observation sheet that has been prepared. A summary of the observation results is shown in Table 3. Based on the observation results in Table 3, the activity of the participating students was much better than in the pre-cycle stage (27.62%). The average percentage of student activity was 67.34%. However, students at this stage experience obstacles in verbal, mental, and promotional creativity. Table 3. Results of Observation of Student Activity in Cycle II

Table 3. Results of Observation of Student Activity in Cycle II

No.	Indicators of Entrepreneurial Mindset and Skills	Observed Behavior	yes	Not	%
1.	Visual activities	Students pay attention to the lecturer during the presentation of the material.	65	15	81,25
2.	Oral Activities	Active discussion through questions and answers about the material presented	36	44	38,75
3.	Listening activities	Pay attention to and listen to the explanations of teachers and friends who are expressing opinions	80	0	100
4.	Writing Activities	Record the results of the resume of each material submitted by the lecturer.	80	0	100
5.	Mental Activities	Responding to Lecturer's questions during discussions.	34	46	42,5
6.	Emotional Activities	Be actively involved in class discussions.	41	39	51,25
7.	Simulation activities	Mobility in Creation and Innovation	62	18	77,5
8.	Promotional Activities	Dominance of Promotional Media	38	42	47,5
Average					67,34

Source: Primary data processed (2024).

This can be seen in the percentage of verbal activity indicators only reaching 38.75% and mental indicators 42.5%, and promotional creations 47.5% This means that student participants tend to be passive and only some students dominate when discussing in class. Therefore, the researcher reviewed the class discussion activities aimed at practicing their public speaking. The review is a reflection of the actions in Cycle II, so the researcher changed the class discussion model to create a more active classroom atmosphere when conducting class discussions. Furthermore, the researcher gave

instructions to all students to apply the material that had been delivered in class through product development using the Project-based Learning method.

Cycle III

4. Action and Observation Stage II

Based on the reflection and analysis in Cycle II, researchers have prepared solutions to correct these shortcomings so that the learning process can run more effectively than in Cycle II. However, the planning formulation still refers to Cycle I. Activities carried out to improve entrepreneurial mindset and entrepreneurial skills are shown in Table 4.

Table 4. Schedule of Learning Activities in Cycle III

Cycle	meeting	Day /Date	Hour	Material	Learning media
III	6	Tuesday, 14/05/2024	7.30-10.30	Business project plan presentation	Zoom Meeting
III	8	Tuesday, 21/05/2024	7.30-10.30	Advanced Progress Presentation	Face-to-face
III	9	Tuesday, 28/05/2024	7.30-10.30	Project finishing presentation.	Face-to-Face and Presentation
III	10	Tuesday, 04/06/2024	7.30-10.30	Product Fithing	Practice

Source: Primary data processed (2024).

From the actions in Table 4, the observer plays a role in making observations at each meeting, so that the results of his observations are concluded in Table 5.

Table 5. Results of Observation of Student Activity in Cycle III

No.	Indicators of Entrepreneurial Mindset and Skills	Observed Behavior	yes	Not	%
1.	Visual activities	Students pay attention to the direction of the lecturer during the presentation of the material.	71	9	88,75
2.	Oral Activities	Presentation of project progress represented by two Mhs in each group	55	25	68,75
		Active discussion through questions and answers about the progress conveyed by students.	52	27	65
3.	Listening Activities	Pay attention and listen to the explanation of the lecturer and friends who are conveying their opinions.	72	8	90
		Listen and carry out the instructions given by the Lecturer for the development of the project in each team.	67	13	83,75
4.	Writing Activities	Make notes from the results of the discussion which is the progress of the project.	70	10	87,5
5.	Motor Activities	Resulting in product development.	71	19	88,75
		Calculate the cost of acquisition of products to be sold.	45	35	56,25
6.	Mental Activities	Responding to Lecturer's questions during discussions.	38	42	47,5
		Make decisions in groups related to product development plans.	41	39	51,25
7.	Emotional activity	Be bold, calm and friendly in the challenge of selling products	33	47	41,25
		Actively involved in project planning/group product development starting from planning to evaluation of project results.	71	9	88,75
8.		Involved and active in market valuation	55	25	68,75

	Simulation activities	Creative selling	62	28	77,5
Average					77,21

Source: Primary data processed (2024).

The results of these observations showed that there was an increase in the percentage of several indicators with an average value of 77.21%. To strengthen the argument of the data, the PBL learning method can be used to improve entrepreneurial mindset. This is proven through the process, namely students can think critically, creatively, and innovatively through product development which is preceded by the creation of product innovation ideas to the final result of a product development. In addition, the ability to think creatively is related to the ability to think fluently when students from four teams of PJBL learning are Shredded Fish, Purple Sweet Potato Sago, Moss Chocolate Jelly and Accessories Group. For sweet potato sago made from cassava and shredded fish made from sea fish.

The form of PBL's success in improving entrepreneurial skills is proven when students can present product development progress and discuss with their peers. Other data is supported by the results of observation analysis of student activity on visual and mental activity indicators. In the indicators of oral activities in the second and third cycles, there was a decrease with a percentage of 39.05. This is due to the discussion rules that only ask representatives of each group to make a presentation. However, in the mental activity indicator, the percentage of student activity from cycle II to cycle III has increased, from 38.46% to 41.52%. This success is an effort to improve communication skills through public speaking practice. In fact, such abilities are also carried out by Jack Ma, a successful entrepreneur who shows that several aspects of these competencies are role models in the process of mastering entrepreneurial competencies by Jack Ma, one of the aspects is communication skills (Buana, 2018).

In addition, students can complete the challenge given by the researcher to market 30 pcs of products within 30-45 minutes. In addition to practice, the success of the learning method can be seen through the average score on the student learning outcome observation sheet, which is 76.40 which shows the achievement of the Minimum Completeness Criteria (KKM) of 70.00.

5. CONCLUSIONS AND SUGGESTIONS

Adaptation to face the era of the Preneur generation and advanced Indonesia, the development of entrepreneurial technology is always pursued by lecturers as professional educators. The Project-based Learning (PJBL) learning model can be applied to students to improve their entrepreneurial mindset and entrepreneurial skills through their innovative product outputs. In the process, the students are guided to be able to produce finished products. Through intensive monitoring and monitoring at each meeting, both virtually and face-to-face, students can present every progress of the resulting project and carry out practice on the planned business products starting from the production planning, marketing, to financial stages. At the final stage, lecturers and students evaluate together starting from product elements, production, marketing to obstacles that are weaknesses in their activities. In addition, the average score on the observation sheet that reaches KKM can also be used as a benchmark.

The findings of this study confirm and strengthen various analyses in previous studies that the PJBL method which aims to improve the entrepreneurial spirit has an important role in improving the entrepreneurial mindset of students in honing the process of mastering knowledge and skills to become an entrepreneur who can think critically, creatively, and innovatively. In addition, the improvement of compatible entrepreneurial skills, namely the ability to think creatively, have a leadership spirit, dare to take risks, obey business ethics, have technological expertise, think critically, be flexible, think logically, be able to communicate nonverbally, make plans, have strategic planning, build a team, manage time, and follow trends. From these findings, the PJBL learning model can be a reference for Entrepreneurship Lecturers to build an entrepreneurial mindset and entrepreneurial skills in students. This study has limitations in the observation time period and the number of informants analyzed, so it is recommended that future research can continue for further research.

BIBLIOGRAPHY

1. Clouse, R. W., Aniello, J., & Biernaeki, J. (2005). A problem-based learning environment for engineeringring entrepreneurship. In *Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition*.
2. Gentile, M., Dal Grande, V., Fulantelli, G., La Guardia, D., Messineo, L., Ottaviano, S., .. & Allegra, M. (2014). Fostering an entrepreneurial mindset in upper secondary school. *Italian Journal of Educational Technology*, *22*(2), 74-80.
3. Gillin, L. M., & Hazelton, L. M. (2021). Bringing an entrepreneurial mindset to

health-care: a new tool for better outcomes. *Journal of Business Strategy*, *42*(4), 278-287.

4. Hahn, D., Minola, T., Bosio, G., & Cassia, L. (2020). The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective. *Small Business Economics*, *55*, 257-282.
5. Jufri, M., & Wirawan, H. (2014). Internalization of the entrepreneurial spirit in children. *Jakarta: Kencana*.

6. Audretsch, D. B., & Keilbach, M. (2004). Entrepreneurship and regional growth: an evolutionary interpretation. *Journal of evolutionary economics*, *14*, 605-616.

7. Ilahiyyah, I., Iriani, S. S., Harti, H., & Izzuddin, M. G. (2022). Implementation of Project-based Learning to Improve Entrepreneurial Mindset and Entrepreneurial Skills in Nurul Islam Vocational School Students. *Journal of Maksipreneur: Management, Cooperatives, and Entrepreneurship*, *11*(2), 197-211.

8. Bodnar, C. A., Jadeja, S., & Barrella, E. (2020, June). Creating a master entrepreneurial mindset concept map. In *ASEE Annual Conference and Exposition, Conference Proceedings* (Vol. 2020, p. 389).

9. Buana, D. E. (2018). *JACK MA'S ENTREPRENEURIAL PROCESS (A CONTENT ANALYSIS STUDY)* (Doctoral dissertation, Ciputra University Surabaya).

10. Chrysnaputra, R. D., & Pangestoeti, W. (2021). The Role and Function of Islamic Entrepreneurship in Indonesia's Economic Development. *Al-Iqtishod: Journal of Sharia Economics*, *3*(1), 28-48.
11. Sugiyono. Educational Research Methods. Bandung: Alfabeta, 2010.
12. Arikunto, S. (1998). Research Approach. *Jakarta: Rineka Cipta*.
13. Setyosari, P. (2010). Research and development methods. *Jakarta: kencana*.
14. Tampubolon, S. M. (2014). Classroom Action Research for Professional Development of Educators and Sciences (Jakarta: Erlangga).
15. Kupang State Polytechnic Vocational PpM Guide 2024 Edition