

**LEARNING METHOD TRAINING PROJECT BASED LEARNING (PBL)
FOR STUDENTS STIT NAHDHATUL ULAMA AL FARABI
PANGANDARAN**

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Abstract

The purpose of this service activity is to provide knowledge and skills to prospective teachers of Islamic Religious Education at STIT NU Al Faraby Pangandaran in applying the *Project Based Learning (PBL) learning method*. The implementation of this service uses training and simulation methods including the provision of material, demonstrations, exercises, and simulations. Evaluation is carried out to determine the understanding and skills of trainees by comparing the results of the pre-test and post-test then analyzed quantitatively with the calculation of *N-Gain*. The results of this service show that prospective teachers who are students of the PIAUD STIT NU Al Faraby Study Program can apply the *Project Based Learning (PBL) learning method* with all learning steps well. With this activity, it is hoped that in the future prospective PIAUD teacher students can apply the PBL method directly in teaching practice (Teaching Internship Activities) besides that it can also directly increase confidence in carrying out their teaching duties after graduating at their respective workplaces. **Keywords:** Project-Based Learning, Knowledge and Teaching Skills, PIAUD Study Program.

INTRODUCTION

Education has a strategic role in the development of a country because education will create quality and competitive human resources. Education is a very crucial aspect in this challenging globalization period because it is expected to develop talented, creative, and innovative human resources (Gaol et al., 2023; Tarigan et al., 2023; Siagian et al., 2023). Education should form skilled, creative, and innovative human resources. The capacity for *critical thinking, creativity, collaboration, and communication is what is referred to as the "4C's talent," and it is an ability that everyone needs to possess to be successful in the 21st century* (Herman et al., 2022; Suharyat et al., 2022; Syaputra & Sariyatun, 2020; Ancient et al., 2022). The ability of students to think in a higher order is one of the competencies of the

21st century (*Higher Order Thinking Skills*). To improve the overall quality of students and the education system, higher-order thinking skills are an important component of any learning process (Daryanti et al., 2019; Suharyat et al., 2022).

The results of the *2018 Programme for International Student Assessment (PISA)* survey, which came out in March 2019, show several education problems in Indonesia. Indonesia ranks 74th out of 79 countries in reading, science, and math skills, meaning that it scores not very high in those areas. The results of the PISA study show that Indonesian students are still not good at answering questions about critical thinking, logic, and problem-solving.

To develop students' critical thinking skills, teachers must shift from teacher-centered to student-centered learning techniques. Analyzing, synthesizing, formulating judgments, and developing and applying new knowledge to real-world situations are examples of the cognitive processes involved in critical thinking. Therefore, critical thinking skills are essential to the learning process because they allow students to learn through discovery. The ability to think critically is essential for the future of all societies around the world.

One of them is participating in a project-centered educational model (*Project Based Learning*). Inquiry-based teaching strategies such as project-based learning (PBL) get students actively involved in building their knowledge by having them work on relevant projects and create useful outcomes (Brundiers & Wiek, 2013; Krajcik & Blumenfeld, 2006; Wijayanto et al., 2023). Krajcik & Blumenfeld (2006) mention six benefits of PBL by answering the following questions: What are the driving questions? What are the learning objectives? What are the benefits of PBL? To complete a project, students must collaborate to identify real-world problems and develop creative solutions that combine theoretical understanding with practical experience and physical buildings. Teachers usually act as facilitators, providing constructive criticism to students and words of encouragement to accelerate and deepen their learning (Guo et al., 2020; Sidauruk, Silalahi, and Herman, 2020).

The results of Ralph's (2016) study reviewed fourteen studies that adopted PBL in STEM education. It turns out that PBL increases the development of knowledge and skills of learners. Students also feel that PBL encourages collaboration and discussion in groups. However, some students report a lack of motivation for teamwork. In line with the study (Chen & Yang, 2019), comparing the effect of PBL and direct teacher instruction on students' academic achievement in primary, secondary, and higher education. PBL in this study shows a learning process with student involvement in working on authentic projects and product development. The results showed that PBL had a more positive impact on student academic achievement than direct instruction did.

Teachers as learning agents have a very crucial role in ensuring the quality of effective and quality education. One of the keys to success to improve the quality of learning is mastery of the right learning method. It should be acknowledged that the competence of teachers in Indonesia currently still faces several challenges. Competence is a set of knowledge, abilities, and task behaviors that teachers must possess, internalize, master, and actualize to carry out professional obligations in the classroom, also known as teaching. Although many teachers are motivated to provide excellent education, some difficulties must be overcome to improve their professional competence (Dudung, 2018). Although many teachers are highly dedicated and committed to providing a good education, there are still some issues that need to be addressed to improve their professional competence. The Ministry of Education and Culture

(Kemendikbud) estimates that there will be 3.31 million educators in Indonesia during the 2022–2023 school year. Of the approximately three million ten thousand instructors we employ (including government employees and private sector workers), more than half are untrained in their fields. Law Number 14 of 2005 concerning Teachers and Lecturers requires teachers to have this certificate as an affirmation of their professionalism (Ministry of Education and Culture).

One of the challenges in improving teacher competence is the lack of access to education and training. Not all teachers have equal access to professional education and training. Some teachers may not have the opportunity to participate in professional development programs due to limited resources and opportunities. For this reason, joint efforts are needed to overcome this, including by involving universities to provide training to teachers so that teacher competence can increase.

METHODS OF COMMUNITY SERVICE ACTIVITIES

The implementation of this service uses training methods, and simulations with several stages, namely the preparation stage, the activity implementation stage, and the evaluation stage. At the preparatory stage, the activities carried out include; reviewing the location of the place of activity and completing the administration of permits at STIT NU AL FARABY as a partner in the implementation of this service. Administration and transportation preparation from Bekasi to Pangandaran, which is 369.8 km away (travel time 7 hours 14 minutes), certainly requires physical preparation and excellent vehicles. Making training materials (study materials in the form of PPT, treatment to the service team with their respective Standard Operating Procedures, preparation, and duplication of Pre-test / post-test instruments). These preparations have been prepared well in advance of departure. Training materials and technical implementation of simulations are sent through the WhatsApp group of trainee students. The making of banners has been prepared since long ago at the Bekasi campus, which is fully handled by the administrative team of the Graduate School. The next stage is the implementation of activities using training, demonstration, simulation, and evaluation methods. Details of the activities are as follows;

- a. Starting with the provision of pre-tests to all training participants, then the service team delivered material about PBL for approximately using 90 minutes in it including question and answer activities.
- b. Furthermore, one member of the service team gave an example of how to teach PBL by demonstrating each step in detail so that it can be seen well by all training participants.
- c. Furthermore, the training participants were grouped into 5 groups with each group consisting of 7-8 students. Each group was given directions to read and understand carefully the philosophy of teaching using PBL. In addition, they were reminded to recall the initial explanation and demonstration that had been demonstrated by the service team.
- d. Each group was given 10 minutes to conduct a PBL simulation with the subject of Islamic Religious Education (PAI) that they had mutually agreed upon. After each group simulated, the service team provided recommendations and input for improvements to their shortcomings and weaknesses, in this session the service team also gave opportunities to other groups who watched to provide comments.

- e. Furthermore, after the entire group conducted the simulation, the class was returned to normal and each participant was given a post-test to find out their knowledge and understanding during the training. The post-test results are processed by the postgraduate administration team who participated in this activity. The results of the post-test are *used as feedback* to the training participants as well as a service team document to be used as material for reports and making service articles.

RESULTS OF SERVICE ACTIVITIES AND DISCUSSIONS

This community service activity was attended by 37 prospective teacher students of PIAUD STIT NU AL FARABY, Pangandaran, West Java. In this activity, various kinds of mentoring are carried out; among others, how to apply *project-based learning methods*, distribute lesson materials, provide group discussion assignments, and provide PBL learning method simulation assignments. At the beginning of the activity, the first speaker delivered material on the application of *project-based learning* as an innovative learning model. Material was delivered by Dr. Yayat Suharyat. At this stage, participants show an enthusiastic attitude towards the material presented because the PBL learning model is new to them and can help their task in teaching in the future. In delivering the material, it is also explained the learning process using the *project-based learning method* which consists of 6 steps of student learning activities consisting of; determination of basic questions, preparing project planning, preparing schedules, evaluation of experience, testing results, and monitoring.

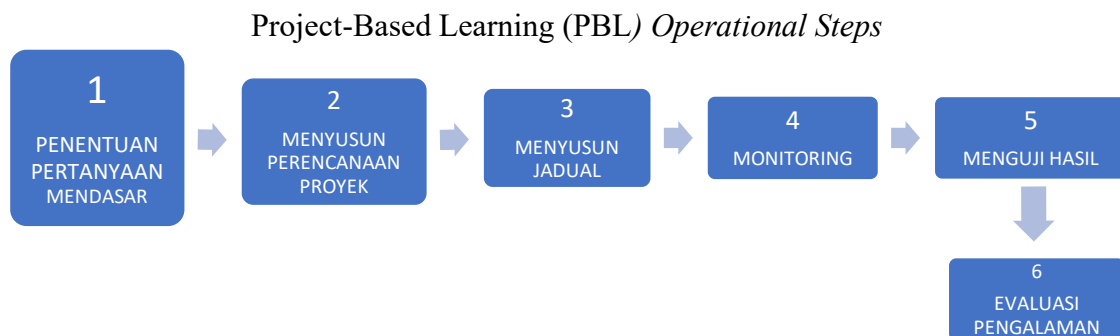


Figure 1: Project-Based Learning Operational Steps

The steps of these activities can be developed according to the needs of each school, the essence of the *project-based learning method* is to foster students' critical thinking power. The *project-based learning method* has been widely modified by learning experts, including by developers of constructivism learning theory and ADDIE learning theory. According to them, critical thinking is a very important ability in today's information and technology era. Students need to analyze, assess, and solve problems with critical and rational thinking. This is also by constructivist learning theory which emphasizes the active role of students in building their knowledge and understanding. According to this theory, students should not passively receive information from the teacher or the environment, but they actively structure their knowledge through complex mental processes. Similarly, ADDIE learning theory encourages students to be able to use their reasoning power effectively in improving critical thinking skills through

the application of ADDIE (*analysis, design, development, implementation, evaluation*) in designing and implementing learning (Arini et al., 2013). The ADDIE learning approach provides a systematic and structured framework for developing learning strategies that focus on building critical thinking skills.

Reiser and Mollenda created the ADDIE Learning Model in the 1990s. Among ADDIE's many uses is as a blueprint for developing dynamic, efficient, and supportive training program infrastructure and resources. The development of the ADDIE method relationship looks like this:



Figure 2. ADDIE Approach Model

1. *Analysis (Analysis)*. The analysis stage is the first step in the training process. At this stage, the identification of training needs and objectives is carried out. Research and analysis are conducted to understand the background of trainees, their characteristics, the current level of knowledge and skills, as well as the challenges or problems encountered. The results of this analysis will help determine the most appropriate content, methods, and approaches for training.
2. *Design*. At the design stage, based on the results of previous analysis, training materials, and learning methods are designed in more depth. Specific learning objectives are set, and teaching materials and training materials are arranged following a systematic learning path. In addition, the right learning strategy is also determined to achieve learning objectives effectively.
3. *Development*. The development phase involves creating training materials and trial testing to ensure that they are by the objectives and plans that have been set. The development also involves selecting the right media and learning tools to support the training process.
4. *Implementation*. After all the training tools have been prepared, the implementation phase begins. A competent teacher or instructor will send training to participants by ensuring the material is delivered clearly, and appropriate learning methods are used. At this stage, active interaction with participants is essential to ensure a proper understanding of the material and learning methods.

5. *Evaluation.* The evaluation phase is the final step in the ADDIE theory. At this stage, training is evaluated to measure the extent to which objectives have been achieved and to assess the effectiveness of implementation and learning methods used. This evaluation may involve feedback from participants, observations, tests, or other instruments to gather data about training results. The results of this evaluation will help identify potential improvements and changes that can be implemented in future training.

After the expository of the PBL material, a simulation process was then carried out, where each participant in groups discussed preparing for a demonstration of teaching practices with the PBL method among fellow training participants. On this occasion, there were 5 groups, each group consisting of 7-8 people.



Picture 3: Presentation of PBL Material by Dr. Yayat Suharyat



Figure 4. Group Training Participants Prepare Simulation Material

After the entire group simulated with input from the service lecturer team and training participants, a post-test was held. The pre-test and post-test results are presented below.

Table 1. Results of Comprehension Test and Simulation of Trainees

No	Student Name	Pre Test	Post Test
1	Samsul Gunawan	70	90
2	Aslih Wahidan	50	80
3	Arif Rahman	60	90
4	Acep Ridwan	50	80
5	Nisa Nurrohman	80	90
6	Ai Siska Silvia	60	80
7	Santi Setiawati	50	80
8	Irma Royani	70	90
9	Nurwan	70	100
10	Halimahtusa'diyah	60	80
11	Farha Nailly	50	90
12	Mutmainah	60	100
13	Siti Jenab	90	100
14	Dede Nurhida	60	90
15	Aspi Nurjanah	70	90

16	Siti Julaeha	70	100
17	Imas Mashafah	70	80
18	Amarulih	70	100
19	Jijan Nurjaman	60	90
20	Uminah	60	90
21	Salsabila	50	90
22	Ashfi A.	60	90
23	Azi	70	100
24	Ujang Kurniawan	70	100
25	Acep Rifki	50	90
26	Dede Ulfah	50	90
27	Renaldi	60	90
28	Miftahul Jamil	80	100
29	Fahmi Ihinnudin	50	90
30	Sandy	80	100
31	Gian Laras	70	90
32	Siti Rahmawati	80	80
33	Evi Puspita	60	90
34	Eni Nuraeni	60	100
35	Sri Cahyani	50	90
36	Ruda'i	50	90
37	Ika Puspita	60	90
Average		63,0	90,8

$$N \text{ Gain} = \frac{\text{Nilai Posttest} - \text{Nilai Pretest}}{\text{Nilai Ideal} - \text{Nilai Pretest}}$$

$$N \text{ Gain} = \frac{90,8 - 63,0}{100 - 63,0} = 0,752$$

Remarks: Ideal Value is the highest value (maximum) that can be obtained by trainees. The N-Gain value consists of 3 categories, and is shown in the table below:

Table 2. Categorization of N-Gain Value

No	Rated N_Gain	Categorization
1	$g > 0,7$	Tall
2	$0,3 \leq g \leq 0,7$	Keep
3	$g < 0,3$	Low

Source : (Setiani et al., 2019)

The result of the N-Gain calculation is 0.752 and based on the categorization table of the n-Gain value obtained, it is included in the high category. The data showed that the differentiation between pre-test and *post-test* scores was significant, which meant that there was a change in knowledge for the better among trainees. The comparison of pre-test scores with *post-test* scores shows an increase in knowledge so that the opportunity (probability) for

improving the skills of prospective PIAUD teachers at STIT NU AL Faraby in using the *Project Based Learning (PBL)* learning method will be very open. The value of knowledge and understanding above includes the value of simulating teaching using these methods directly in the classroom. The positive implication expected from this condition is that the professional competence of prospective teachers in the PIAUD STIT NU Al Faraby study program, Pangandaran, will also increase. So that it will directly be able to improve the quality of learning interactions when serving as a teacher. This condition shows that teacher competence will increase and quality of the learning process.

Based on Table 1, the comparison of the average value of the pre-test with the post-test (Pre-test < Post-test) = 63.0 < 90.8. This means that the level of understanding of STIT NU Al-Faraby students about *Project Based Learning* is in the very good category (being in grade 1) based on the assumption of final grades commonly used in course assessment. The categories used are as follows:

Quality Score (AM) and Quality Letter (HM)		
Criterion	Quality Score (AM)	Quality Letter (HM)
1. Excellent	81-100	A
2. Good	71-80	B
3. Enough	60-70	C
4. Less	45- 59	D
5. Less Than Once	< 44	E

Source: UNISMA Academic Guidelines, 2015

Teacher Competence

In this era of globalization, the availability and quality of a country's human resources (HR) are as important as the quantity and quality of its natural resources; In particular, the availability of educated educators who can meet the challenges that arise along with changes that occur in all fields. Therefore, the school serves as a basis for developing capable human resources, making professional teaching skills very important.

Law Number 14 of 2005 states that teachers are professional educators whose main task is to educate, teach, guide, direct, train, assess, and evaluate students in formal education pathways for early childhood education, primary education, and secondary education. Teachers play a very important role in deciding how much and how well they teach, which helps improve the quality of education at the national level. Teachers act as learning managers, helping to create effective learning, create good learning materials, and improve students' ability to listen to lessons and understand the educational goals they need to achieve. This requires changes in how classes are organized, how they are run, the methods and strategies used to teach and learn, and how teachers think and act when they are responsible for teaching and learning. Teachers must plan and implement the learning process, evaluate learning outcomes, provide advice and training, and conduct research and community service. This is especially true for teachers in higher education.

A competent educator is a person who can fulfill his responsibilities in the ways described above (Akbar, 2021). "Teachers must have academic excellence, competence, educator

certification, physical and mental health, and the ability to achieve national education goals," reads Article 2 of Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers. The goals of national education cannot be met without teachers who have at least a bachelor's degree (S1) or diploma (D-IV), who are experts in their fields, who are physically and psychologically healthy, and who are certified educators.

Competency is defined as the ability to execute at a certain level in a certain context, whether that context becomes a specific job or several industries (Febri Giantara, 2019). According to Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers, competence is a set of knowledge, skills, and behaviors that must be possessed, lived, and mastered by teachers or lecturers in carrying out professional duties.

Ministerial Regulation No. 16 of 2007 on Academic Qualifications and Teacher Competencies, issued by the Indonesian Ministry of National Education, provides further clarification on the skills and knowledge that educators should possess. The rule sets out four main competencies that educators, especially teachers, must have:

1. Personality Competencies, personality abilities, and identity as educators who become role models for students. This skill shows that the teacher is a figure worthy of admiration and imitation. In other words, instructors should be role models for their students.
2. Pedagogic competence, more specifically pedagogic competence, is directly related to the mastery of educational disciplines and other sciences related to its teaching duties. Pedagogic competence also refers to pedagogic competence. As a result, a teacher is required to have a previous educational background to practice his profession. The academic competence of teachers includes a wide range of responsibilities.
3. A teacher's professional competence is measured by their capacity to acquire a broad and in-depth understanding of the subject matter they teach, allowing them to direct their students to conform to established educational benchmarks. Therefore, professional competence refers to the capacity, areas of expertise, and basic skills educators must learn for them to fulfill their responsibilities as teachers. These competencies include: 1) The ability to compile general and in-depth subject/learning material as the core of syllabus construction; and 2) Able to master the subject matter / learning broadly and deeply.
4. Social competence can be defined as the ability of educators to communicate and interact effectively and efficiently with learners, fellow educators, parents or guardians of learners, and the wider community

Since a teacher's performance is based on the integration of these four abilities, a successful teacher is a professional educator who has a strong command of the subject matter being taught and an understanding of how to deliver that subject to students. Each teacher is responsible for carrying out their teaching responsibilities to build a learning environment and methodology that encourages students to actively develop their potential in areas such as religious and spiritual fortitude, personality, intelligence, and noble character, as well as relevant skills (Tahawali & Aimang, 2019). Furthermore, (Habib et al., 2022) conveyed the results of their research that simultaneously independent and collaborative learning methods (PBL) have a significant effect on academic performance with a p-value of $0.000 < 0.05$.

Furthermore, partially, the independent learning method has a negative relationship and does not significantly affect academic performance with a p-value of $0.144 > 0.05$. While partially, collaborative learning methods have a positive relationship and have a significant effect on academic performance with a p-value of $0.000 < 0.05$. The results of this study further show that PBL is very effective in fostering learners' learning independence to achieve the expected behavior change. Similarly, the results of research conducted by (Astuti, 2020) stated that positive and significant results were shown by the increasing learning achievement of students subjected to PBL learning methods, and showed better results than student achievements subjected to conventional methods. This shows that the PBL learning method is effective in increasing student achievement in the PIAUD Study Program educational profession courses. The ability of the PBL method in improving the critical thinking of students in secondary schools has also been tested with similar results, namely a good increase in students' thinking skills, especially for MIPA teaching materials. (Rosmasari & Supardi, 2021). In the end, as stated (Donosuko, 2021) from the results of his research, education is not just a transfer of knowledge which, in quotes, means only prioritizing the achievement of goals without paying attention to the process and abilities of students. Educating is not just a transfer of knowledge which, in quotes, means simply prioritizing the achievement of goals without regard to the student's processes and abilities. Learning and learning activities are effective if their implementation is based on the potential of students who are synergized with the right learning methods and techniques so that targeted students can grow and develop proportionally in terms of physical, social, and psychological (mental, intellectual, and emotional children) It is also to obtain balanced and integrated results between intellectual (cognitive), abilities, attitudes (affective), and skills. Learning and learning activities are effective if their implementation is based on the potential of students who synergize with (psychomotor).

CONCLUSION

Improving teacher skills in the learning process is absolute because it is the main way to impart knowledge and knowledge. Teachers are required to be creative in using learning methods that are by the character of the teaching material and the ability of the students taught. Some conclusions that can be obtained from this training activity are:

- a. Training participants can carry out activities well with a high level of attendance and discipline so that the knowledge gained can be measured and seen in the high acquisition of the N-Gain category (0.752), as well as automatically obtained the difference in pre test scores with post-tests ($63.0 < 90.8$) or in other words, there is a change in knowledge from Quality Letter C (Sufficient) to Quality Letter A (Very Good). Thus, the professional competence of prospective PIAUD teachers at STIT NU Al Faraby Pangandaran is very open to being able to carry out teaching duties well in the future.
- b. In the simulation of activities using methods among their friends, they can be seen with high activeness and enthusiasm, excited and full of joy. This condition shows that trainees enjoy the course of training and use their reasoning to explore skills in the use of *Project Based Learning* (PBL) methods.

- c. The PBL method is a method that explores the critical power of students, therefore teacher skills must continue to be honed so that every step of learning with this method can truly grow students' academic, social, and spiritual skills.

Recommendations

Preparing qualified education personnel is a necessity so that this nation's generation has a comparative advantage and competitive advantage. Teachers are the driving engine of the progress of the nation's civilization. The modernization of civilization and development, intelligence, and noble values of a nation can only be taught by professional teachers. Listening to the activities that have been carried out in the form of *project-based learning* training for STIT NU AL FARABI students, the following can be recommended:

- a. Teaching skills are very important competencies to master, the more you know how to teach your students, the more dexterous and wise a prospective teacher will be in determining teaching methods that suit the character of students, and the type of teaching materials that will be delivered to students. Furthermore, methodology training must be attempted to be carried out on a scheduled and systematic basis according to the development of science and technology.
- b. Along with the advancement of Information Technology, mastery of methodology must be followed by skills in the use of technology in teaching. PBL is a teaching methodology that can be recommended in schools, but the existence of PBL must be supported holistically with information technology and teaching technology that is currently developing rapidly.
- c. The ultimate goal of teaching is behavior change, so there must also be an evaluation technique that is regularly implemented to measure the effectiveness of using a teaching method that is often used by teachers in their teaching activities.

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