

## Improving Students' Critical Thinking Skills by Using Project-Based Learning (PBL)

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### ABSTRACT

The goal of this study is to see if Project-Based Learning may help students develop critical thinking skills. The purpose of this study was to see if Project-Based Learning is beneficial to English Study Program students at IAIN Curup. The study used a quasi-experimental methodology to determine the impact of Project Based Learning on IAIN Curup's Critical Thinking. This study employs a Critical Thinking exam to determine students' Critical Thinking abilities. Three pre- and post-tests are included. The pre-test was used to assess students' critical thinking before they received therapy, and the post-test was used to assess the changes in students' critical thinking after they received treatment. Students enrolled in IAIN Curup's English Study Program who took a Speaking class were the subjects. Project-based learning has a considerable impact on students' Critical Thinking abilities, according to the findings. Based on the study,  $t_{observed} > t_{table}$ , this conclusion may be drawn. As a result, employing the Project Based Learning technique to improve critical thinking abilities may be concluded.

**Keyword:** Improving, Project Based Learning, Critical Thinking, University Students.

### INTRODUCTION

Education is impacted by the changing times, which need individuals to acquire 21st century abilities. A shift in learning activities is the result of the influence. Learning in the twenty-first century should ensure that students acquire twenty-first-century skills, such as skills, work habits, and character traits that are seen to be necessary for a successful existence. Students must have (1) learning and innovation skills, such as critical thinking and problem solving, communication and cooperation, creativity and innovation; (2) information, media, and technology skills; and (3) life and career skills as a result of their learning activities (Trilling & Fadel, 2009 in Anazifa, 2017).

The world is constantly changing. Students must brace themselves for the changes. Students must prepare for the skills required in the twenty-first century. This is especially true for today's university students. Critical Thinking is one of the skills required for students to be self-directed learners. This ability will aid them in adjusting to university life. However, because of the teacher-centered nature of the classroom, critical thinking skills are frequently overlooked. Students must be able to distinguish between facts and opinions and verify accurate information in order to be considered independent learners. Based on preliminary findings from research conducted at IAIN Curup's English Study Program, several issues with their critical thinking skills existed, including difficulty in attempting to provide reasoning when in discussions, struggle just to echo friends' answers and no idea about the topic of discussion, and difficulty in combining the information they knew and information they obtained before making a decision, all of which resulted in low critical thinking skills. In other words, students remained passive and lack the initiative and courage to innovate and be creative while learning. Most students were not accustomed to critical thinking during the defense process. This is due to the fact that knowledge transfer from lecturers



(Teacher-Centered) to students was still referred to as the learning process. Because students had not been actively participating in lectures, the lectures had become less interesting and monotonous, and as a result, the students' learning outcomes had not been as anticipated.

Critical thinking instruction in lectures is becoming increasingly important for students. According to some studies, learning that improves thinking skills can improve learning outcomes (Bren, Cook, Durham, Emrey, & Yu, 2014). The ability to think critically is required in order to filter information, make decisions, and organize strategies in order to achieve success. As a result, lecturers should focus on these skills while students are learning in the classroom.

A learning model to develop students' critical thinking skills should be considered in light of these phenomena. PBL (Project-Based Learning) is a learning model that encourages pupils to use higher-order thinking skills. Project-based learning, according to Kosasih (2014), is "the learning strategy that uses a project or activity as the aim." It means that project-based learning (PjBL) focuses on students' activities in the form of data gathering and utilization to create something useful for the students or others, while remaining connected to the Basic Competence in Curriculum. This learning model employs a scientific approach developed in response to the level of development of student thinking, with a focus on student learning activities. As a result, students will participate in the learning process based on their skills, comfort, and learning interests (Anand Jayprakash Vaidya, 2011). Project-based learning methods are important because they fit into 21st-century teaching and skill assessment. Because there is group learning, communication, and critical thinking involved. Project-based learning is a learning strategy that employs problems as a first step in collecting and integrating new knowledge based on experience in real-world activities, according to (Muliawan & Nahar, 2017). This indicates that the learning model involves students in problem-solving so that they can produce original results / products as a result of the learning process.

Students learn more effectively when they are involved in meaningful activities. "Tell me, and I will listen; teach me, and I will remember; involve me, and I will learn," Franklin said. This model is suitable for students ranging from elementary to university level. PBL allows students to collaborate on conceptual understanding, apply prior knowledge, and learn new skills. A project can be created by combining several disciplines. Other advantages of PBL include allowing students to demonstrate higher skills, improving student achievement, challenging students to solve real-world problems, becoming a good collaborator, motivating students, improving content knowledge, and meeting the needs of students with a wide range of skills and learning styles. Furthermore, Rahman (2014) concludes that PjBL can improve concept mastery, problem solving ability, communication ability, critical thinking and creative thinking ability, and character development.

The ability to think critically and reflectively is referred to as critical thinking. As a result, it assists individuals in making decisions about what to believe or do through intellectual processes such as conceptualizing, applying, analyzing, and evaluating information, which leads to creation. Students use these skills to solve problems in novel situations, make inferences and generalizations, combine information in novel patterns, and make evidence-based decisions. Critical thinking is defined as "the development and evaluation of arguments" by Shirkhani and Fahim (2011). Furthermore, (Dwyer, Hogan, & Stewart, 2015) stated that "critical thinking provides a similar definition with a more detailed illustration of the purposes of judgment," defining critical thinking as "a metacognitive process that, through purposeful, reflective judgment, increases the chances of producing a logical conclusion to an argument or solution to a problem." In other words, critical thinking is a more systematic way of thinking. Critical thinking implementation is used in English teaching when language is used in a contextual learning activity that encourages students to interpret, collaborate, and solve problems about the topic discussed, reflect on the use of language, and create an original work (Bowell & Kemp, 2005). As an example, consider the act of speaking. Teachers who can pique students' interest in active opinion by posing controversial statements or questions will train them to think more in structured and to try to reason with factual data. The ability to argue scientifically will improve students' critical thinking skills. According to (Drew, 2008), the ability to choose, assess, analyze, reflect, question, and ask a question is a requirement of Critical Thinking skill at the university level. As a result, Critical Thinking can be defined

as students' capacity to recognize difficulties, make proper assumptions, draw correct conclusions, evaluate with factual evidence, and come to realistic conclusions.

In light of the aforementioned issues, the researcher devised the study's goal: to determine how Project Based Learning methodologies influence the critical thinking skills of IAIN Curup students enrolled in the English Study Program.

## RESEARCH METHODOLOGY

This study employs a quasi-experimental design. According to Gay, L., Mills, and Airasian (2006), the quasi-experimental method tests hypotheses for causal relationships by requiring researchers to manipulate at least one free variable in order to control the other variables and then make observations of bound variables. The researcher had done pre-tested three times prior to the treatment. The goal is to evaluate students' initial critical thinking abilities. The researchers then repeated the critical thinking tests three times after the treatment to see if there was a difference in pre-test scores and post-test scores during treatment with project-based learning methods.

This study was conducted at the State Islamic Institute (IAIN) Curup, which offers Speaking classes as part of its study program. This study's population consisted of students enrolled in the English Study Program of the IAIN Curup study program for the 2019-2020 academic years. The study population was given normality and homogeneity testing tests as part of this study. The sample for this study is a six-year semester student in the 2019-2020 academic years. There was only one class used in the study, and there was no control group. Cluster random sampling techniques were used in selection.

Critical Thinking tests were used to collect data from students. At the end of the treatment, the researcher administered the Critical Thinking test in the form of Speaking. The Critical Thinking guide or scoring rubric for Critical Thinking rubric from the *Center for Teaching, Learning, and Technology at Washington State University* could be used to evaluate EFL students' Critical Thinking ability in Speaking (2006). The research data was obtained through the student's Critical Thinking ability test in Speaking, and the test was carried out using normality tests, homogeneity tests, and hypothesis tests; t-test. The null hypothesis (Ho) and alternative hypothesis (Ha) are the two types of hypotheses. This research hypothesis is:

Ho: Techniques such as Project Based Learning (PjBl) have no discernible impact on students' Critical Thinking abilities.

Ha: Techniques such as Project Based Learning (PjBl) have a significant impact on students' Critical Thinking abilities.

## FINDING AND DISCUSSION

Project-based learning is closely related to the concept of critical thinking. The ability to argue in an organized fashion demonstrates critical thinking. In this case, students must be able to analyze a specific idea or ideas and reach a conclusion. They must be able to carefully analyze it, identify and evaluate the ideas, and develop them for the better. According to the study's findings, Project Based Learning techniques have a significant impact on improving the critical thinking skills of students in the IAIN Curup English Study Program. According to the researcher's findings during the teaching and learning process, the project-based learning method is capable of making students involved in decision-making and accountable for discovering and managing information. This is due to the fact that students develop a genuine project as part of the process in order to boost student learning and make it more effective. As a result, this Project Based Learning method is confident in its ability to assist students in developing their Critical Thinking skills.

Students are encouraged to create and produce the best possible work during the Project Based Learning process. For example, when discussing idols, lecturers in this case begin with essential questions that necessitate in-depth investigation and real-world realities such as a figure that deserves to be idolized. It can be seen in his accomplishments, scientific discoveries, or even the work of a phenomenal idol

figure. Essentially, the questions should focus on the problem in order to stimulate students' critical thinking. According to Wogu (2016), critical thinking teaching necessitates students' abilities to assess data, ignite and organize ideas, sustain beliefs, make comparisons, draw conclusions, evaluate arguments, and solve problems. In-depth conversation can pique kids' interest, and they will learn to express themselves in a systematic manner. As a result, instructors bring up hot and intriguing issues based on the interests of students.

Learning is done collaboratively when using the project-based learning method. In this case, students and their group friends can plan out the project in as much detail as possible. Prepare a schedule of activities for completing the project as a group effort. Students conduct exploration, assessment, interpretation, and information systems in the core activities of project creation to acquire knowledge and skills. The assessment process is strengthened as a result of student learning achievement by providing feedback on the level of understanding attained by students. Lecturers lead discussions about student projects that are displayed in groups. This is where Critical Thinking skills come in handy for evaluating new ideas, selecting the best, and modifying as needed.

Students are required to argue rationally and objectively during this process. Students are challenged to be more creative when creating a project because the results are presented in front of the class once the project is completed. Students will be trained to think more intuitively, logically, and analytically as a result of this learning activity. The goal of this Project Based Learning method is to make learning more meaningful for students by providing experiences such as digging for information directly, creating projects, communicating the work to others, and working in groups. As a result of the findings of this study, it can be concluded that learning through Project Based Learning methods can improve student critical thinking.

Furthermore, it was discovered in this study that what was conveyed by Kurubacak (2007) who suggested that Project Based Learning is more effective in promoting critical thinking of students in many disciplines when compared to traditional learning techniques. Based on the statement, it can be stated that Project Based Learning strategies enable the development of students' Critical Thinking abilities in all areas included in this study. Furthermore, Project Based Learning is stated as a technique that helps improve problem-solving capacity, with project-based learning environments improving problem-solving skills and making students more active and successful in tackling complicated problems (J. Larmer, J. Margendoller, 2015).

The role of a lecturer in adopting this Project Based Learning method in classroom learning determines student performance in Critical Thinking. In this instance, teachers must be able to pick a topic that is both provocative and hard in order to enhance students' critical thinking skills. Lecturers must be able to become facilitators and liven up the classroom atmosphere during the discussion stage by effectively facilitating interaction between students in their opinion speeches. Similarly, lecturers and students can collaborate on project design and engage in the monitoring of the student project's progress. Lecturers can direct students to intergroup presentations (sharing) at the presentation stage, with the goal of communicating their genuine creation. This stage will encourage the emergence of new questions/problems, which in turn will inspire the emergence of new ideas. Lecturers must be more engaged in this situation and be able to open new perspectives or provide student ideas. As a result, Project Based Learning can assist students boost their drive to learn, improve their skills in discovering and obtaining knowledge, and give students with learning and practice in structuring projects in order to produce the best work possible.

Many factors make traditional learning less successful, necessitating the development of more effective learning technologies such as Project Based Learning. Project Based Learning, according to Musa et al. (2012), places a greater emphasis on the completion of a project through a series of research activities that have been methodically created and completed collaboratively. Students will be more active and motivated as a result of the hurdles they face in the learning process.

Researcher could eventually draw conclusions from the numerous talks and findings of various experts and researchers that this project-based learning method has a major impact on college students' critical thinking capacity, particularly students of English Study Program at IAIN Curup. It is worth

noting that this project-based learning method is regarded as an intelligent answer to the problem of low critical thinking quality among English Study Program students enrolled in the IAIN Curup.

## CONCLUSION

Based on the study's findings and analysis, the following research conclusions could be drawn: Students with low critical thinking abilities during learning process could be improved by using project-based learning methods to improve their critical thinking abilities. Based on the analysis, this conclusion could be drawn ( $t$  observed  $>$   $t$  table). The hypothesis ( $H_a$ ) is then accepted, and students of English Study Program at IAIN Curup critical thinking skills were seen to improve as a result of Project Based Learning. It shows that project based learning has given nice impact and brought good influence to students who suffered low critical thinking abilities. This research could be the reference to the lecturer or teacher to develop students' critical thinking during the learning process. Project based learning also focused on student-centered than teacher-centered which means students would be more active in a class and let them to find the way to solve the problem.

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