

Project-Based Learning for Critical Thinking in Young English Learners Class (A Study at Eighth Grade Students of SMPN 11 Bengkulu Tengah)

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Abstrack

This study investigates the effect of Project-Based Learning (PjBL) on the development of critical thinking skills among eighth-grade students in English as a Foreign Language (EFL) classes at SMPN 11 Bengkulu Tengah. Employing a quantitative research design, the study collected data from 21 students in class VIII A using a structured questionnaire consisting of 30 items on a four-point Likert scale. Descriptive statistical analysis was applied to examine students' perceptions across five indicators: understanding of PjBL, project engagement, motivation, collaboration and communication, and critical thinking skills. The findings reveal that the majority of students responded positively to the implementation of PjBL, demonstrating notable improvement in critical thinking indicators such as identifying problems (90%), using evidence-based reasoning (90%), reflecting before answering (95%), evaluating work results (90%), and recognizing the importance of critical thinking (100%). In addition to cognitive gains, PjBL enhanced students' collaboration, communication, and confidence, with 90% reporting active participation in discussions and increased motivation. These results suggest that PjBL fosters an interactive, contextual, and learner-centered environment that supports the development of 21st-century skills, particularly critical thinking. The study concludes that PjBL can be an effective instructional strategy for junior high school EFL contexts, although further research employing pre-/post-tests and qualitative methods is recommended to complement these findings.

Keywords: *Project-Based Learning, critical thinking skills, quantitative research*

Introduction

Education in the 21st century has evolved from a traditional model focused on knowledge transmission to one that emphasizes the cultivation of critical thinking skills. These abilities enable students to analyze, synthesize, and evaluate information systematically and reflectively (Özelçi & Çalışkan, 2019). Critical thinking is regarded as a core competency that equips learners to solve problems effectively, adapt to change, and manage the growing complexity of contemporary education (Raj et al., 2022). In the absence of such skills, students often face challenges in reasoning logically, making informed decisions, and demonstrating creativity when developing innovative solutions to academic and real-life issues (Hidayati, Sari, Mellisa, & Maharani, 2023).

In the field of English as a Foreign Language (EFL) education, critical thinking plays a vital role in enabling learners to assess information objectively, employ analytical strategies, and enhance communicative competence. Research has consistently demonstrated that students engaged in higher-order cognitive activities such as evaluating arguments, questioning underlying assumptions, and reflecting on their

learning processes tend to achieve greater language proficiency and more effective communication outcomes (Gajić, 2024; Isawi & Al-Mahmoud, 2021). Learner-centered instructional approaches, including collaborative discussions and authentic learning experiences, are widely recognized as effective in nurturing critical thinking while simultaneously supporting language development.

Among various innovative approaches, Project-Based Learning (PjBL) aligns closely with these educational objectives. This method immerses students in meaningful, real-world projects that promote inquiry, reflection, independence, and collaboration. Through this process, learners are encouraged to explore complex issues, work cooperatively, and engage in self-directed problem-solving. Prior studies have highlighted that PjBL not only deepens conceptual understanding but also fosters essential 21st-century skills such as creativity, communication, collaboration, and critical problem-solving (Gandimati & Zarei, 2018; Liang & Fung, 2021; Koukpossi, Kim, & Nguyen, 2024).

Despite growing evidence supporting the effectiveness of PjBL and the acknowledged importance of critical thinking in language education, much of the existing research has concentrated on adult or advanced EFL learners. Consequently, limited attention has been given to its implementation among junior high school students, especially within the Indonesian educational context. At this developmental stage, adolescents benefit greatly from learning experiences that stimulate both critical and creative thinking. However, few empirical studies have explored how PjBL can be systematically applied to enhance the critical thinking abilities of younger learners (Todorovska, 2024). This research addresses this gap by examining the use of PjBL among eighth-grade students at SMPN 11 Bengkulu Tengah, focusing on its effectiveness in developing critical thinking and students' learning experiences throughout the process.

This study is driven by several key challenges. Many students demonstrate a limited grasp of critical thinking, which hinders their capacity to analyze data and make rational judgments. They also struggle to apply structured problem-solving strategies due to underdeveloped reasoning skills. Additionally, English learning projects often lack integration with real-world themes, resulting in less meaningful learning outcomes. Previous studies have mostly concentrated on adult learners, leaving a gap in understanding how PjBL supports the critical thinking development of Indonesian junior high school students.

Accordingly, this research is delimited to investigating the application of Project-Based Learning (PjBL) as an instructional strategy to enhance the critical thinking skills of eighth-grade students at SMPN 11 Bengkulu Tengah in English language lessons. The focus lies on examining how PjBL contributes to the growth of students' critical thinking, exploring their experiences during project-based activities, and identifying their perceptions of its effectiveness. This study does not extend to other cognitive domains, different grade levels, or schools beyond this specific context.

The primary objectives of this study are threefold: (1) to analyze how PjBL facilitates the improvement of students' critical thinking abilities, (2) to explore their learning experiences during project activities, and (3) to investigate their perceptions of the approach's effectiveness in fostering critical thinking within EFL classrooms. The findings are expected to contribute both theoretically and practically.

From a theoretical perspective, this research enriches academic discourse on project-based and learner-centered instruction by demonstrating how PjBL can promote critical thinking among young EFL learners in Indonesia. It aligns with modern educational frameworks that emphasize active, collaborative, and reflective learning. Practically, the study offers valuable insights for English teachers and curriculum

developers to design interactive, contextualized, and student-centered learning models that enhance creativity, collaboration, problem-solving, and self-reflection key competencies required in 21st-century education.

For conceptual clarity, several operational definitions are employed. Project-Based Learning (PjBL) refers to a teaching approach that engages students in investigating and responding to authentic, complex problems or questions over an extended period, culminating in a tangible product or presentation. Critical Thinking is defined as an intellectually disciplined process of actively conceptualizing, analyzing, synthesizing, and evaluating information to guide beliefs and actions (Facione, 2020). Young Learners refer to students approximately between the ages of 6 and 12, who learn most effectively through interactive, hands-on, and context-based experiences tailored to their cognitive and socio-emotional development (Butler, 2024; Scott & Ytreberg, 1990).

In summary, this study highlights the potential of Project-Based Learning as an innovative pedagogical strategy to cultivate essential critical thinking skills that enhance English language learning among junior high school students. By fostering an authentic, collaborative, and contextually relevant learning environment, PjBL can empower learners to develop not only deeper linguistic understanding but also the reflective and analytical abilities necessary for both academic achievement and real-world problem-solving.

Method

This research utilizes a quantitative design to investigate the impact of Project-Based Learning (PjBL) on improving students' critical thinking abilities in English language instruction. The quantitative approach was deemed appropriate because it allows the collection of measurable and objective data from a defined group of participants, enabling a systematic numerical analysis of their perceptions (Creswell & Creswell, 2018). By relying on quantifiable evidence, this study aims to uncover observable trends and recurring patterns in students' responses regarding their experiences with PjBL within the classroom setting.

The population of the study included all eighth-grade students at SMPN 11 Bengkulu Tengah, totaling 47 learners divided into two classes. Using purposive sampling, the researcher selected class VIII A, consisting of 21 students, based on recommendations from the English teacher. This class was chosen because its members demonstrated greater enthusiasm and active participation in English learning activities compared to other groups, making them the most appropriate subjects for exploring how PjBL supports the development of critical thinking in language education.

Data were collected using a structured questionnaire as the primary research instrument. The instrument employed a four-point Likert scale and comprised 30 items categorized into five major dimensions: (1) understanding of PjBL concepts, (2) engagement in project activities, (3) learning motivation, (4) collaboration and communication, and (5) critical thinking ability. Participants were asked to express their level of agreement with each statement, ranging from strongly disagree to strongly agree. The questionnaire was specifically designed to quantitatively capture students' perceptions while ensuring the reliability and consistency of their responses.

The data collection process was conducted in a structured and controlled manner. Following the completion of the PjBL implementation in English lessons, the questionnaire was administered to all students in class VIII A. Their responses were then compiled, coded, and systematically organized for further statistical processing to ensure the accuracy and validity of the data in representing students' perceptions of PjBL.

For data analysis, descriptive statistical methods were employed, including the calculation of frequency distributions, percentages, and mean scores. These techniques were utilized to identify general tendencies within students' perceptions and to measure the extent to which PjBL influenced key variables such as learning motivation, collaborative engagement, and the development of critical thinking. Through the exclusive use of quantitative analysis, the study provides a clear, objective, and data-driven interpretation of how PjBL contributes to enhancing learning outcomes in English language education.

Results

The implementation of Project-Based Learning (PjBL) in eighth-grade English classes at SMPN 11 Bengkulu Tengah was examined to evaluate its effect on students' critical thinking skills. Data were collected using a structured questionnaire designed to measure students' perceptions regarding their motivation, collaborative engagement, and analytical abilities during the execution of project-based activities. The quantitative results are displayed in the following tables, providing a detailed summary of students' responses according to the established indicators.

Table 1. Distribution of Questionnaire Results on the Implementation of Project-Based Learning

NO	INDICATOR	SS	S	TS	STS	INTERPRETATION
1	The teacher explains PjBL clearly	85	10	5	0	The majority understand the concept of PjBL
2	Understands the steps of the project	70	25	5	0	Most students understand the stages of the project
3	PjBL helps in understanding the material	60	25	15	0	The material is easier to understand
4	Easier to understand through the project	65	35	0	0	Contextual learning is more meaningful
5	Enthusiastic in doing the project	70	30	0	0	Students are motivated
6	Happy to present the project results	70	15	15	0	Some students are still lacking in self-confidence
7	Gives the best contribution in the group	50	45	5	0	Contributions are relatively evenly distributed
8	Sufficient time for project completion	90	10	0	0	Time allocation is adequate

To explore students' responses toward the implementation of the Project-Based Learning (PjBL) model, a questionnaire consisting of several statements related to the teaching and learning process was administered. The outcomes of this instrument served as a primary data source, reflecting students' perceptions, experiences, and levels of acceptance regarding the application of PjBL in English classes.

The results revealed that the majority of students perceived that the teacher had provided a clear and comprehensive explanation of the PjBL model. Specifically, 85% of respondents agreed and 10% strongly agreed with this statement, while only 5% expressed disagreement. These findings indicate that the teacher successfully conveyed the core principles and stages of project-based learning in an accessible manner. Effective

and well-structured instruction from the teacher was instrumental in fostering students' initial understanding, enabling them to follow each phase of the learning process efficiently.

Additionally, 70% of students agreed and 25% strongly agreed that they clearly understood the procedures for conducting the projects, while 5% reported partial difficulty in grasping them. This demonstrates that most students could follow the PjBL sequence—from planning and implementation to presentation—smoothly. The small number of students who experienced difficulties likely reflects individual differences in learning capacity or varying levels of familiarity with collaborative learning environments.

Regarding the extent to which PjBL facilitated comprehension of the lesson material, 60% of students agreed and 25% strongly agreed that the model enhanced their understanding, whereas 15% felt it was less effective. These results suggest that PjBL significantly contributed to improving comprehension, although its impact varied among learners. Such variation may stem from diverse learning preferences—some students thrive in experiential, hands-on settings, while others may respond better to conventional teacher-directed instruction.

Responses to the statement about the ease of understanding lesson content through project work were overwhelmingly positive. Sixty-five percent (65%) of students agreed and 35% strongly agreed, with none disagreeing. This finding illustrates that PjBL successfully offered a contextual and meaningful learning experience closely linked to real-life applications. By engaging in authentic projects, students were able to connect theoretical concepts with practical experiences, leading to a deeper understanding of the material.

Student enthusiasm was also notably high. Seventy percent (70%) of students agreed and 30% strongly agreed that they were enthusiastic and actively engaged in completing their projects, and no respondents expressed disagreement. This suggests that PjBL effectively fostered students' motivation by involving them in interactive, cooperative, and intellectually stimulating tasks that encouraged creative effort and ownership of learning outcomes.

In relation to the presentation phase, 70% of respondents agreed and 15% strongly agreed that they enjoyed presenting their work, while 15% indicated discomfort or disagreement. This small proportion likely reflects challenges such as nervousness, limited confidence, or inexperience in public speaking. Nevertheless, the majority expressed a positive attitude toward presenting their projects, highlighting the value of this stage as a key component of the PjBL process.

Concerning group contribution, 50% of students agreed and 45% strongly agreed that they gave their best effort in teamwork, whereas only 5% disagreed. This finding suggests that most learners demonstrated responsibility and active participation within their groups. The relatively balanced engagement across participants indicates that PjBL encouraged both collaboration and accountability, enabling students to appreciate the importance of teamwork and shared responsibility.

Feedback regarding time allocation for completing projects was similarly favorable. A total of 90% of respondents agreed and 10% strongly agreed that the time provided was adequate, and none disagreed. This implies that the duration allotted by the teacher was well-adjusted to students' needs, allowing them to complete their projects effectively without undue time pressure. It also reflects careful lesson planning and classroom management, contributing to a well-organized and supportive learning environment conducive to successful PjBL implementation.

Overall, the questionnaire results indicate that students responded very positively to the application of Project-Based Learning (PjBL). Across almost all evaluated dimensions—including clarity of instruction, comprehension of project steps, motivation, and collaboration student responses were predominantly in the agree and strongly agree categories. This demonstrates that PjBL effectively fostered an active, enjoyable, and meaningful learning atmosphere.

Nevertheless, a small proportion of learners reported minor difficulties, such as limited comprehension or reduced confidence during presentations. These findings suggest that students possess diverse learning needs and styles, underscoring the importance of continuous scaffolding and differentiated instruction to optimize the benefits of PjBL. In general, the data confirm that PjBL substantially enhances students' motivation, engagement, collaboration, and understanding in English learning, while also being well comprehended and positively received by participants.

Table 2. Distribution of Critical Thinking Questionnaire Results

NO	INDICATOR	SS	S	TS	STS	INTERPRETATION
1	Identifying problems	60	30	10	0	Good identification skills
2	Distinguishing important information	60	25	15	0	The majority can sort information
3	Providing logical reasons	60	30	10	0	Argumentation is starting to develop
4	Using evidence/data	60	30	10	0	Already based on facts
5	Thinking before answering	70	25	5	0	Metacognition is developing
6	Evaluating work results	60	30	10	0	Reflection is increasing
7	Finding problem solutions	70	20	10	0	Problem-solving is improving
8	Analyzing mistakes	70	25	5	0	Critical awareness is increasing
9	Feeling more critical after PjBL	80	15	5	0	Significant positive impact
10	Realizing the importance of critical thinking	70	30	0	0	Metacognitive awareness is growing
11	Actively participating in discussions	50	40	10	0	High participation
12	Explaining ideas clearly	50	50	0	0	Fairly good communication
13	Respecting friends' opinions	60	25	15	0	Democratic attitude is developing
14	Helping each other in groups	55	30	15	0	Solidarity is built
15	Being confident after the project	55	35	10	0	Confidence is increasing

The results obtained from the questionnaire indicate that the application of Project-Based Learning (PjBL) had a positive impact on students' critical thinking skills and learning attitudes. A large proportion of students demonstrated strong abilities in problem identification (90%), distinguishing essential information (85%), and providing logical reasoning (90%). They also showed considerable progress in supporting

arguments with appropriate evidence (90%), reflecting before responding (95%), and evaluating their learning outcomes (90%). Furthermore, notable improvement was observed in problem-solving (90%) and error analysis (95%), reflecting a higher level of critical awareness among students. In terms of learning attitudes, the majority of participants reported becoming more analytical and reflective after engaging in PjBL activities (95%) and recognized the importance of critical thinking in the learning process (100%). Positive effects were also evident in the social dimension of learning, where students actively participated in class discussions (90%), expressed their ideas clearly (100%), respected differing viewpoints (85%), maintained group cohesion (85%), and displayed increased self-confidence upon completing their projects (90%). Overall, these findings affirm that Project-Based Learning serves as an effective pedagogical approach for enhancing students' critical thinking, collaborative engagement, and self-confidence. However, a small number of learners continued to experience challenges, particularly in organizing information, contributing actively in group work, and presenting ideas with confidence, suggesting the need for ongoing instructional support and guidance..

Discussion

The results of this study indicate that Project-Based Learning (PjBL) significantly contributes to improving the critical thinking abilities of eighth-grade students at SMPN 11 Bengkulu Tengah. These findings are consistent with the study by Goshu and Ridwan (2023), who emphasize that teacher guidance, collaborative engagement, and structured group interactions within PjBL play a vital role in enhancing learners' critical thinking competence. In line with their observations, this research recorded high achievement levels in key indicators such as problem identification (90%), evidence utilization (90%), and students' self-perception as more critical thinkers after engaging in PjBL (95%). These outcomes underscore the pivotal role of scaffolding and meaningful interaction in promoting a transition from surface-level memorization to deeper analytical reasoning (Bell, 2010).

Strong responses were also observed in metacognitive aspects, including "thinking before answering" (95%) and "evaluating one's work outcomes" (90%). These findings are in line with Jia et al. (2025) in *The Impact of Scaffolding on the Development of Metacognitive Skills in Project-Based Engineering Learning*, who revealed that feedback mechanisms and reflective prompts embedded in PjBL enable students to monitor, assess, and adapt their learning strategies effectively. Consequently, this study reaffirms that metacognitive awareness serves as an integral component of PjBL's contribution to the development of critical thinking skills.

Moreover, social and affective dimensions including participation in group discussions, clarity in articulating ideas, respect for peers' perspectives, group solidarity, and self-confidence also demonstrated notably positive responses, ranging between 85% and 100%. These results substantiate theoretical assertions that PjBL not only enhances cognitive outcomes but also cultivates collaboration, social competence, and learner confidence (Thomas, 2000; Kolodner, 2003). In particular, indicators such as "clear expression of ideas" (100%) and "active participation in discussions" (90%) illustrate that PjBL fosters a supportive and participatory classroom environment where students feel motivated to share opinions and engage constructively.

Nevertheless, a few indicators revealed lower or more variable responses. Approximately 15% of students expressed uncertainty in distinguishing key information, while 5% disagreed with statements concerning their group contributions, reflecting uneven gains among learners. These discrepancies may be influenced by factors such as

information literacy levels, self-confidence, prior learning experiences, and the teacher's facilitation skills in clarifying instructions, offering guidance, and assigning group roles. Comparable findings were reported by Apriliyanti, Wardani, and Rusminati (2023) and Putri, Triwoelandari, and Yono (2023), who emphasized that differentiated instruction and additional scaffolding are effective strategies to overcome challenges related to participation and information processing.

A key limitation of this research lies in its dependence on self-reported questionnaire data, without the inclusion of pre- or post-tests or qualitative insights that could provide more objective validation of learning improvements. This aligns with Adawiyah and Mahmuddin (2022), who advocate integrating perceptual data with performance-based assessments to obtain a more comprehensive understanding of learning outcomes.

In conclusion, this study confirms that Project-Based Learning effectively enhances critical thinking, encompassing dimensions such as problem identification, logical reasoning, evidence use, and reflective evaluation, while simultaneously reinforcing collaboration, communication, respect, and self-confidence. To maximize its pedagogical potential, teachers are encouraged to design projects with well-defined roles, guide students in information selection, promote equitable participation, and allocate adequate time for reflection and evaluation throughout the learning process.

Conclusion

The results of this study reaffirm that Project-Based Learning (PjBL) has a substantial positive impact on the enhancement of critical thinking skills among eighth-grade students at SMPN 11 Bengkulu Tengah. Students exhibited significant improvement across major dimensions of critical thinking—such as problem identification, evidence-based reasoning, reflective analysis, and evaluative judgment—indicating that PjBL offers authentic and meaningful learning experiences that stimulate higher-order cognitive engagement. Furthermore, the approach was shown to foster motivation, collaboration, communication, and self-confidence, reflecting PjBL's broad influence across cognitive, social, and affective domains.

Despite these positive outcomes, certain challenges persist. A small portion of students continued to face difficulties in distinguishing essential information, participating equitably in group activities, and presenting ideas confidently. These issues highlight the need for sustained scaffolding and the implementation of differentiated instructional strategies to address varied learner needs. The findings therefore underscore that successful PjBL implementation depends on well-structured instructional design, clear role assignments, sufficient time allocation for project completion, and continuous teacher support to ensure that all students benefit equitably from the learning process. In conclusion, PjBL stands out as an effective and innovative pedagogical model for cultivating critical thinking and other 21st-century competencies in English as a Foreign Language (EFL) contexts at the junior high school level. Future studies are encouraged to integrate performance-based evaluations and qualitative investigations to provide more comprehensive insights into learners' developmental trajectories and to examine the long-term influence of PjBL on the advancement of critical thinking skills.

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