

Project-Based Learning to Improve Creative Thinking

Skills in Early Childhood

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ABSTRACT

Creative thinking skills are essential for every individual, particularly for early childhood, as they form a fundamental basis for children to explore and maximize their potential. However, field research indicates that, on average, children's creative thinking abilities are still underdeveloped. This condition is influenced by a lack of self-confidence, which causes children to feel hesitant or shy about expressing their ideas, as well as limited knowledge that hinders their ability to think creatively. This study aims to improve early childhood creative thinking skills through the implementation of Project-Based Learning (PjBL). The research employed a Classroom Action Research (CAR) design conducted in two cycles, involving 22 children at TAAM Qur'an Bahrusysyifa' Kindergarten, Lumajang. The results showed that in Cycle I, only 31% of children reached the "very well developed" category, while in Cycle II this percentage increased significantly to 86%. Therefore, it can be concluded that project-based learning is an effective method for improving creative thinking skills in early childhood.

Introduction

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In the modern era, creative thinking skills are one of the essential competencies that must be possessed by individuals, especially young children (Kurniawati, Kristiana, & Azam, 2024). Creative thinking refers to the ability to generate and develop new ideas as an extension of previously existing concepts (Amanda & Sudibyoy, 2025). During the developmental stage of early childhood, it is crucial for parents and educators to provide interactive and creative learning activities. Through such approaches, children can grow and develop optimally, gain opportunities to explore their potential to the fullest, and receive appropriate stimulation according to their developmental stages (Arini et al., 2024).

However, several issues were identified in the field, including: (1) children's limited ability to express their creative imagination, (2) children's difficulty in making independent choices, and (3) a lack of teacher innovation in delivering learning activities (Trianziani, 2020). Consequently, children tend to imitate examples provided by teachers, are reluctant to express their own ideas, show low motivation to engage in activities, prefer playing rather than participating in learning tasks, and fear criticism from peers (Anaaak, 2024).

If these issues are not addressed, they may lead to decreased learning outcomes and reduced critical thinking abilities, resulting in children's limited capacity to solve problems innovatively. Therefore, teachers need to apply appropriate and varied learning strategies that align with learning objectives, including activities that enhance

children's creativity. One such approach is the application of Project-Based Learning (PjBL) (Azizah et al., 2024).

Project-Based Learning is a learning model that places students as active subjects by engaging them in real and meaningful projects. In this model, children are given the freedom to determine their learning activities, work collaboratively, and complete tasks to achieve optimal outcomes. Consequently, the success of this learning model heavily depends on children's active participation in the learning process (Damayanti, 2023). The application of project-based learning in early childhood education is particularly important because it connects learning activities to real-life experiences, allowing children to learn through direct experience, which is more meaningful than conventional instructional approaches (Budi Raharjo & Wardani, 2023).

The stages of implementing Project-Based Learning include: (1) preparing essential questions related to the learning topic, beginning with observation activities; (2) planning learning activities and preparing tools and materials; (3) children carrying out assigned tasks; (4) observing children's activities during project implementation; (5) evaluating the outcomes of children's activities; and (6) reviewing learning results through reflection. These stages indicate that PjBL begins with meaningful questions relevant to children's real-life experiences (Amanda & Sudibyoy, 2025).

This research method has been shown to foster creativity, expand children's knowledge, enhance creative and critical thinking skills, and

stimulate visual-imaginative intelligence. Additionally, PjBL supports the development of social skills such as cooperation, initiative, independence, and critical thinking (Sakila et al., 2023). The effectiveness of PjBL is evident in motivating children and teachers to engage actively, joyfully, and creatively in learning through projects (Tumbel, 2024). Moreover, project-based learning has been found to significantly improve problem-solving skills among children aged 5–6 years (Niyarci et al., 2025). Thus, PjBL not only enhances academic achievement but also fosters critical, creative, collaborative, and responsible character traits essential for 21st-century learning (Nuris Mar'ah Rahmania Kurnia Ihlas Syafruddin, 2025; Aliyatuz Zulfa et al., 2024).

Previous studies have demonstrated that project-based learning effectively enhances children's creative thinking skills. Sakila et al. (2023) reported significant positive impacts on creativity, cognitive abilities, social skills, and critical-analytical thinking. Similarly, Trianziani (2020) observed improvements in students' creative thinking abilities across learning cycles, supported by the use of collage media. Azizah et al. (2024) concluded that PjBL supports the development of 4C skills—communication, collaboration, creativity and innovation, and critical thinking/problem solving. Other studies also emphasize PjBL's potential to foster creative thinking and independent learning skills in children (Aziz & Nurachadijat, 2023).

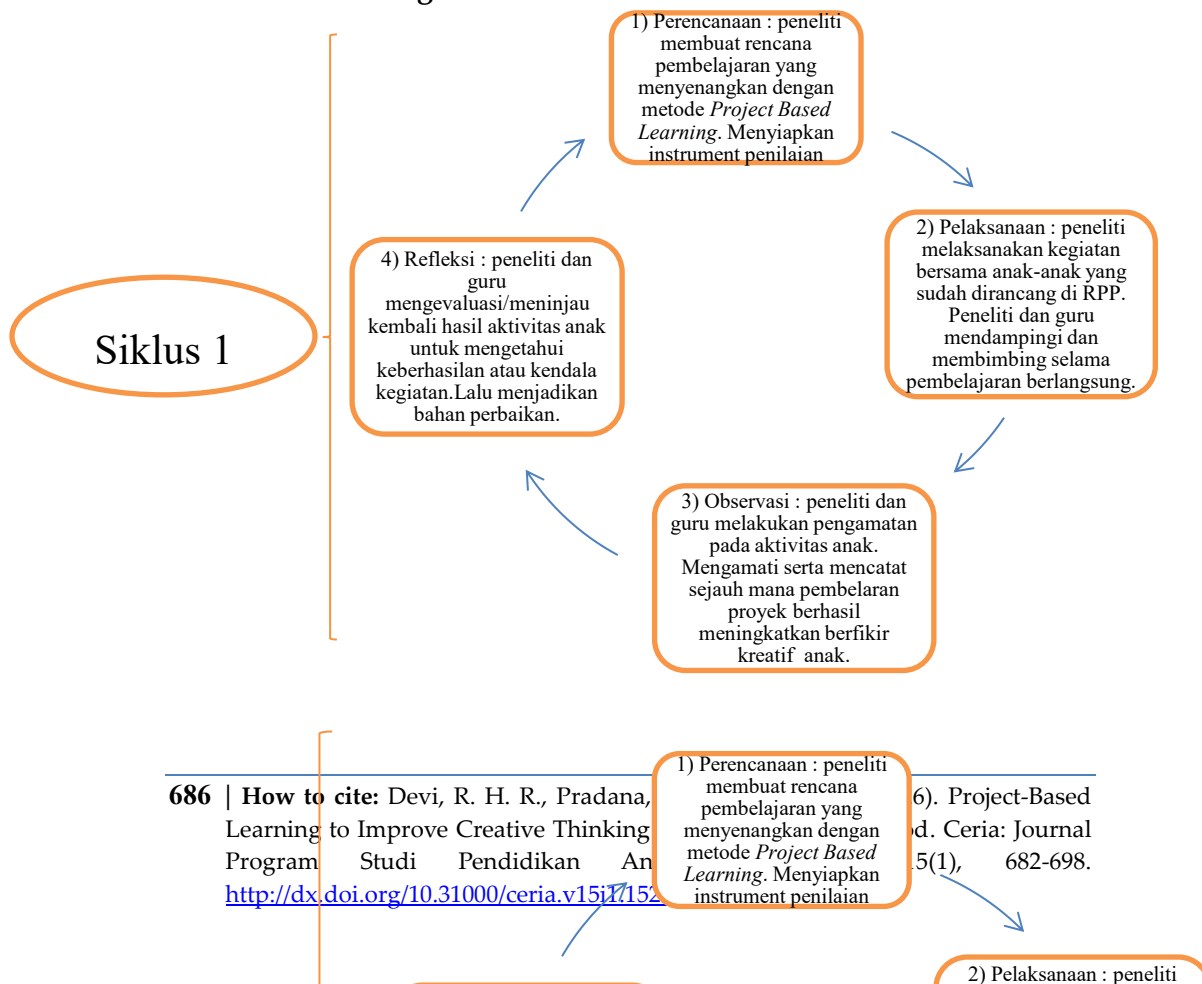
This study aims to examine how the application of project-based

learning can enhance creative thinking skills in early childhood. The findings are expected to serve as a reference for educators and contribute to the development of innovative, child-centered learning strategies in early childhood education (Kurniawati, Kristiana, & Azam Muttaqin, 2024).

Methods

This study employed Classroom Action Research (CAR) conducted in two cycles. The research subjects were 22 students of TAAM Qur'an Bahrusyisyifa' Kindergarten, Lumajang, during the odd semester. Data collection involved four stages: planning, action, observation, and reflection.

Figure 1. Classroom Action Research



Data collection methods included tests and observations. Tests were used to assess learning outcomes before, during, and after the implementation of the learning model. Systematic observation was conducted using observation sheets as instruments to obtain accurate data (Jacub, 2020).

Data analysis used the formula:

$X = \Sigma X / N$, where X is the average score, ΣX is the total score, and N is the number of children (Setyowati, 2025).

Result and Discussions

Cycle I

Planning

At the planning stage, the researcher identified the existing

problems, determined the research objectives, prepared lesson plans, designed observation sheets, and developed assessment instruments.

Action

The action in Cycle I was carried out on Monday, November 3, 2025. The learning activities began with the Dhuha prayer, followed by tahfidz activities, and then continued with the national curriculum learning session. Before the learning activities started, the researcher initiated the session with prayers, greetings, and friendly interaction with the children.

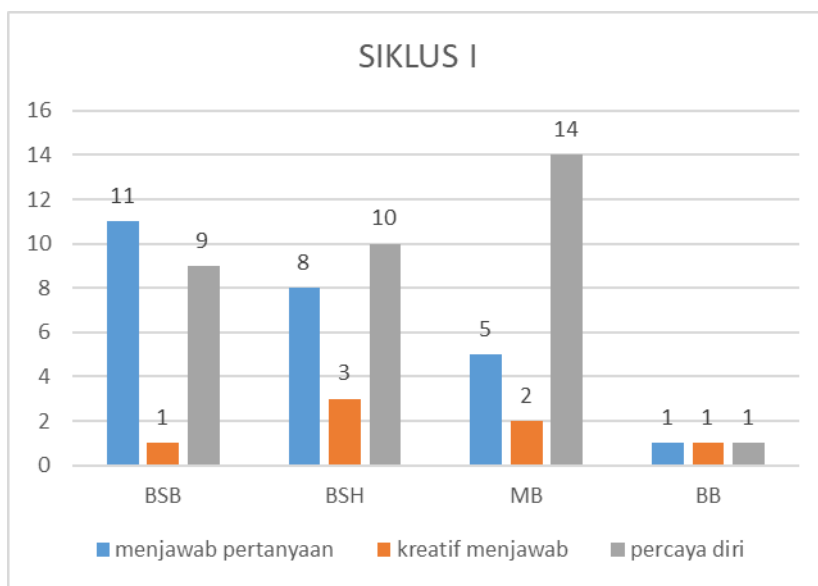
The first meeting began with the introduction of the topic of marine animals. The teacher explained the habitats of marine animals, introduced various types of sea animals, and asked children about the differences between freshwater and seawater. At the closing activity, the teacher asked each child to mention one characteristic of the marine animal they were holding. For example, if a child held a shark figure, the child was required to mention one characteristic of a shark. During this activity, several children still needed assistance to express the characteristics of the animals.

Observation

The indicators used by the researcher in this observation were: (1) children's ability to answer questions using simple language, (2) children's creative thinking ability, and (3) children's self-confidence. The assessment categories used to measure children's development were: Very Well Developed (BSB), Developed as Expected (BSH),

Beginning to Develop (MB), and Not Yet Developed (BB).

Figure 1. Cycle I



Based on the results of Cycle I, 11 children were categorized as BSB in answering questions, 8 children as BSH, 5 children as MB, and 1 child as BB. In terms of creative thinking ability, 1 child was categorized as BSB, 3 children as BSH, 2 children as MB, and 1 child as BB. Regarding self-confidence, 9 children were categorized as BSB, 8 children as BSH, 14 children as MB, and 1 child as BB.

Table 1. Result of Cycle I

INDIKATOR	KATEGORI				PRESENTASE			
	BSB	BSH	MB	BB				
menjawab pertanyaan	11	8	5	1	50%	36%	22%	4%
kreatif menjawab	1	3	2	1	4%	13%	9%	4%
percaya diri	9	10	14	1	40%	45%	63%	4%
rata-rata					31%	31%	31%	4%

The results presented in Table 1 show that, on average, children's

creative thinking skills that had not yet emerged reached 31%, those beginning to develop reached 31%, those developed as expected reached 31%, and those categorized as very well developed reached only 4%. These results indicate that children's creative thinking skills in Cycle I could not yet be considered well developed. This condition was influenced by a lack of self-confidence, which made children hesitant to express their ideas, as well as limited knowledge, which hindered their ability to think creatively. Therefore, the researcher continued to Cycle II to observe further development.

Cycle II

Planning

In Cycle II, the teacher prepared more engaging learning materials, developed assessment instruments, prepared the lesson plan (RPP), and designed observation plans.

Action

The action in Cycle II was carried out on Monday, November 4, 2025. The teacher opened the learning session with greetings and prayers, followed by asking the children about their feelings that day. The teacher then invited the children to participate in ice-breaking activities and rhythmic clapping to build enthusiasm. After that, the teacher introduced the learning topic and explained the learning objectives.

During the core activity, the teacher reviewed the previous learning material together with the children. The teacher then invited the

children to watch a video and observe marine animals. After watching the video, the teacher posed guiding questions related to the content of the video. The children showed high enthusiasm in responding to the questions, and most of them were able to answer the guiding questions appropriately.

In the final activity, the teacher asked the children to draw and color their favorite marine animals. During this activity, children were encouraged to imagine their own drawings without being given any examples by the teacher. The results showed that the children were able to complete the task independently, without assistance, and successfully finished their work until the end.

Observation

The observations in Cycle II indicated that, on average, children were able to answer questions, think creatively, and confidently present their work. This improvement can be seen in the data presented in Figure 2 and Table 2.

Figure 2. Result of Cycle II



Based on the results of Cycle II, 18 children were categorized as BSB in answering questions, 2 children as BSH, 1 child as MB, and 1 child as BB. In terms of creative thinking ability, 13 children were categorized as BSB, 3 children as BSH, no children were categorized as MB, and 1 child as BB. Regarding self-confidence, 21 children were categorized as BSB, 1 child as BSH, and none were categorized as MB or BB.

Table 2. Result of Cycle II

INDIKATOR	KATEGORI				PRESENTASE			
	BSB	BSH	MB	BB				
menjawab pertanyaan	18	2	1	1	81%	9%	4,5%	4,5%
kreatif menjawab	18	3	0	1	81%	13%	0%	4,5%
percaya diri	21	1	0	0	95%	4,5%	0%	0%
rata-rata					86%	11%	0%	0,3%

The results in Table 2 show that the average percentage of children whose creative thinking skills had not yet emerged decreased to 0.3%, those beginning to develop reached 0%, those developed as expected reached 11%, and those categorized as very well developed increased

significantly to 86%. In Cycle II, one child was still categorized as not yet developed because the child was an inclusive student.

During Cycle II, children were given greater freedom to draw and were encouraged through guiding questions to stimulate imagination and creative thinking, as well as to build self-confidence in their own work. Although initially many children complained and frequently erased their drawings because they felt their work was not good enough, the researcher continuously provided encouragement. Eventually, the children were able to complete their tasks successfully. Therefore, the researcher concluded the observations at Cycle II, as the results demonstrated that project-based learning effectively enabled children to think creatively.

Discussion

The results of this study indicate that the implementation of the Project-Based Learning (PjBL) model was able to significantly improve the creative thinking skills of early childhood learners. This improvement is evident from the substantial increase in the percentage of children who achieved the *Very Well Developed* (BSB) category, rising from 4% in Cycle I to 86% in Cycle II. This finding confirms that project-based learning provides broader opportunities for children to explore ideas, express imagination, and build self-confidence throughout the learning process.

In Cycle I, children's creative thinking skills were still relatively low. Most children were classified in the *Not Yet Developed* and *Beginning to*

Develop categories. This condition was influenced by several factors, including children's low self-confidence in expressing opinions and their dependence on examples provided by the teacher. Children tended to imitate the models demonstrated by the teacher and were reluctant to generate their own ideas. These findings are consistent with the views of Anaak (2024) and Trianziani (2020), who stated that early childhood learners tend to mimic teacher-provided models and lack confidence in expressing independent ideas when learning remains conventional and offers limited freedom of expression.

The improvement in learning strategies implemented in Cycle II, particularly the provision of freedom for children to draw and color without direct examples from the teacher, proved effective in enhancing children's creative thinking abilities. Children demonstrated higher levels of enthusiasm, were able to imagine and develop their own ideas, and showed greater confidence in presenting their work. These results reinforce the findings of Sakila et al. (2023), who reported that PjBL encourages active engagement in the learning process and significantly enhances creativity, cognitive abilities, and social skills in early childhood education.

Furthermore, the significant improvement observed in Cycle II aligns with the study conducted by Trianziani (2020), which reported a gradual increase in children's creative thinking abilities through the implementation of project-based learning across multiple learning cycles. In that study, improvements occurred as children were given

opportunities to explore, experiment, and produce creative work based on their own imagination—an approach that was similarly applied in the present study.

Moreover, the findings of this study support previous research by Azizah et al. (2024) and Tumbel (2024), which emphasized that PjBL contributes to the development of 21st-century skills, particularly creativity and critical thinking. When children are actively involved in contextual and real-life projects, they not only acquire knowledge but also develop divergent thinking and independent problem-solving skills.

Therefore, the correlation between the results of this study and previous research demonstrates a consistent pattern indicating that project-based learning is an effective instructional approach for enhancing creative thinking skills in early childhood. The significant improvement observed in Cycle II highlights that the key success factors of PjBL lie in providing freedom of expression, utilizing engaging learning media, and positioning the teacher as a facilitator who offers guidance and motivation rather than serving as the sole center of instruction. These findings strengthen the position of Project-Based Learning as a strategic alternative for early childhood education that prioritizes creativity and the optimal development of children's potential.

Conclusion

Based on the results of the study, it can be concluded that project-

based learning implemented through Classroom Action Research is effective in improving creative thinking skills in early childhood. This effectiveness is evidenced by the significant increase in children's creative thinking abilities from the first cycle, which reached 31%, to the second cycle, which increased substantially to 86%. Therefore, project-based learning can be considered an alternative instructional method to foster creative thinking in young children. In addition, teachers can apply this method to create a more engaging and enjoyable learning environment, enabling children to become more active, creative, and enthusiastic participants in the learning process.

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