



Implementation of Project-Based Learning in Madrasah: Impact on Student Creativity and Achievement

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Abstract *The implementation of Project-Based Learning (PjBL) in madrasahs offers an innovative approach to increase student creativity and achievement. In the digital era, the need for learning methods that can develop critical thinking, problem-solving, and collaborative skills is increasingly urgent. Madrasahs, as a faith-based educational institution, require learning strategies that not only encourage academic understanding but also support character development. This study aims to analyze the impact of the application of PjBL on student creativity and achievement in madrasahs. Using a quantitative approach with a pseudo-experimental design, data were collected through creativity tests and achievement tests in the group of students who were given the PjBL intervention and the control group that used traditional learning methods. The results of the study show that PjBL has a significant impact on increasing students' creativity and academic achievement. The PjBL group experienced an increase in creativity by 20% and an increase in academic achievement by 15% compared to the control group. In addition, students in the PjBL group showed higher engagement and strong motivation in completing the project, which favored the creation of more meaningful learning experiences. This research makes a practical contribution to madrasahs in adopting PjBL as an effective and relevant learning method to modern educational needs.*

Keywords project-based learning, creativity, student achievement, involvement, madrasah.

1. Introduction

In recent years, the implementation of Project-Based Learning (PjBL) has been increasing at various levels of education. PjBL focuses on developing students' ability to collaborate, solve problems, and think critically through real-world projects that are relevant to their lives. This method is considered effective in helping students master

21st century skills that are in high demand in this digital era ^{1 2 3}. Especially in madrasahs, the application of PjBL can provide a new dimension in learning that combines cognitive and affective aspects with religious values, which is very important in student character education ⁴⁵.

The urgency of this research lies in the need to increase the creativity and achievement of students in madrasahs. Creativity is one of the important skills that need to be developed in education, because it helps students in solving problems innovatively and thinking out-of-the-box. Meanwhile, academic achievement is one of the indicators of learning success that is highly prioritized in the world of education. The application of PjBL in madrasahs is expected to encourage these two aspects in a balanced manner, so that students can develop optimally, both in terms of cognition and affection ⁶.

Data from the Ministry of Religious Affairs shows that around 45% of madrasah students have a high interest in project-based learning, which provides opportunities for the application of PjBL on a wider scale in madrasahs. The diagram below shows that the level of creativity and achievement of students tends to increase along with the increase in the duration of the implementation of PjBL in the classroom. This supports the notion that PjBL not only plays a role in improving cognitive skills but also encourages students' emotional engagement.

Although the benefits of PjBL have been proven in various studies, few have specifically examined the impact of this method in the madrasah environment. Madrasah has unique characteristics that incorporate religious values in every aspect of learning. This is a strong reason to examine how the application of PjBL can affect the creativity and achievement of students in madrasahs specifically. This study aims to fill this gap by exploring the application of PjBL in the context of religious education in madrasahs.

The novelty of this study lies in its focus on the madrasah environment and the influence of PjBL on the development of students' creativity and achievement in faith-based educational institutions. This research is expected to provide new insights into how madrasahs can implement PjBL to achieve more holistic and integrity educational goals.

¹ Dewi Rokani and M Afif Zamroni, "Strategic Management of The Principal in The Development of The Pancasila Student Profile Strengthening Project," *JELIN: Journal of Education and Learning Innovation* 1, no. 1 (2024): 111–24.

² Phyllis C. Blumenfeld et al., "Motivating Project-Based Learning: Sustaining the Doing, Supporting the Learning," *Educational Psychologist* 26, no. 3–4 (June 1, 1991): 369–98, <https://doi.org/10.1080/00461520.1991.9653139>.

³ H. Han and C Jeong, "Enhancing Intercultural Communication Skills: A Project-Based Learning of Intercultural Communication.," *Procedia-Social and Behavioral Sciences* 106 (2013): 1153–60.

⁴ Astri Komara Putri, "Applying Project-Based Learning To Reinforce the Students' Character," *Primary: Jurnal Pendidikan Guru Sekolah Dasar* 12, no. 3 (2023): 737, <https://doi.org/10.33578/jpkip.v12i3.9823>.

⁵ Putri.

⁶ Imas Cintamulya, Warli, and Lilik Mawartiningsih, "The Development of Project-Based Learning Models That Accommodate the Reflective and Impulsive Cognitive Style," *Studies in Learning and Teaching* 5, no. 1 (2024): 59–72, <https://doi.org/10.46627/silet.v5i1.279>.

The purpose of this study is to analyze the impact of the implementation of PjBL on students' creativity and achievement in madrasahs. By evaluating the effectiveness of PjBL in developing creative skills and improving academic achievement, this study is expected to provide practical guidance for madrasahs in implementing effective teaching strategies that are relevant to the needs of modern education. This study also aims to identify the challenges faced in the implementation of PjBL in madrasahs as well as solutions that can be applied to overcome these obstacles.

2. Method

This study uses a quantitative approach with a quasi-experimental design to measure the impact of the implementation of Project-Based Learning (PjBL) on students' creativity and achievement in madrasahs. This approach allows researchers to compare learning outcomes and creativity between groups of students who use the PjBL method and groups that use traditional learning methods ⁷⁸.

The research instruments consist of creativity tests, achievement tests, and observation sheets. The creativity test is used to measure students' ability to think creatively and solve problems innovatively, using a scale developed based on the Torrance Test of Creative Thinking (TTCT). Achievement tests are structured based on the learning materials that have been taught, while observation sheets are used to record students' involvement in the PjBL process, including cooperation skills, responsibility, and initiative ^{9 10 11}.

Data were collected through three main techniques: test, observation, and documentation. Tests are conducted before and after the implementation of PjBL to measure changes in students' creativity and achievement. Observations are made during the learning process to see how students participate in PjBL and how the classroom dynamics take place. Documentation is used to supplement the data by collecting previous grades and records of relevant students' academic achievement ^{12 13}.

⁷ Hamza Kasim and Stephen Kwadwo Antwi, "Qualitative and Quantitative Research Paradigms in Business Research: A Philosophical Reflection," *European Journal of Business and ManagementOnline* 7, no. 3 (2015): 217–25.

⁸ Matthew L. Maciejewski, "Quasi-Experimental Design," *Biostatistics & Epidemiology* 4, no. 1 (January 1, 2020): 38–47, <https://doi.org/10.1080/24709360.2018.1477468>.

⁹ Ibrahim Ibrahim et al., "Faktor Sosial Yang Berpengaruh Terhadap Pergeseran Bahasa Lowa," *KEMBARA Journal of Scientific Language Literature and Teaching* 5, no. 2 (2019): 208–18, <https://doi.org/10.22219/kembara.vol5.no2.208-218>.

¹⁰ Ipah Saripah, Eli Syarifah Aeni, and Agus Priyanto, "Pembelajaran Menulis Teks Cerpen Dengan Model Project Based Learning (PjBL) Untuk Siswa Kelas Ix SMP PGRI 4 Cimahi," *Parole : Jurnal Pendidikan Bahasa Dan Sastra Indonesia* 5, no. 5 (2022): 315–22, <https://doi.org/10.22460/p.v5i5p315-322.11271>.

¹¹ Ibrahim et al., "Faktor Sosial Yang Berpengaruh Terhadap Pergeseran Bahasa Lowa."

¹² Aicha Cissé and Andrew Rasmussen, "Qualitative Methods," *Comprehensive Clinical Psychology*, January 1, 2022, 91–103, <https://doi.org/10.1016/B978-0-12-818697-8.00216-8>.

¹³ John W. Creswell, *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches* (Sage Publication, 2017).

The research began with the preparation stage which included the preparation of instruments and licensing at the madrasah where the research was located. The next stage is the implementation of a pre-test to measure the initial level of creativity and achievement of students in both groups (PjBL and control). After that, the experimental group followed project-based learning for several weeks, while the control group followed traditional learning. During the implementation of PjBL, the researcher made observations to record student involvement. After the intervention was completed, a final test (post-test) was carried out on both groups to see the difference in results. The final stage is data processing and analysis to reach conclusions^{14 15}.

The data was analyzed using a statistical test, namely the t-test to test the average difference in creativity and achievement test results between the experimental and control groups before and after the implementation of PjBL. In addition, correlation analysis was carried out to see the relationship between student involvement in PjBL and their level of creativity and achievement. The results of the analysis are presented in the form of tables and graphs to facilitate interpretation and comparison of results between groups¹⁶

3. Result & Discussion

A. Comparison of Student Creativity between PjBL and Control Groups

Increasing student creativity is one of the main goals of implementing project-based learning in madrasahs. The results of the t-test showed that there was a significant difference in creativity scores between the experimental group (PjBL) and the control group after the application of PjBL. The experimental group showed an increase in creativity by 20% compared to the control group, which only increased by 5%¹⁷.

In addition, classroom observations indicate that students involved in PjBL are more active in proposing ideas and demonstrating critical thinking skills, especially when they are faced with real problems in their projects. They have become more innovative in finding solutions, which reflects a significant development in the aspect of creativity. This data supports the finding that PjBL is effective in increasing student creativity in madrasahs.

This section is the most important section of your article. The analysis or results of the research should be clear and concise. The results should summarize (scientific)

¹⁴ Creswell.

¹⁵ Emrah Ekmekci, "The Flipped Writing Classroom in Turkish EFL Context: A Comparative Study on a New Model," *Turkish Online Journal of Distance Education* 18, no. 2 (April 1, 2017): 151–67, <https://doi.org/10.17718/TOJDE.306566>.

¹⁶ Putu Ayu Shelia Apriliani and Kadek Yudianta, "Model Pembelajaran Doll Speak Berbasis Kearifan Lokal Tat Twam Asi Terhadap Sikap Toleransi Siswa," *Mimbar PGSD Undiksha* 8, no. 2 (2020): 284–93.

¹⁷ Dwi Agus Sudjimat, Amat Nyoto, and Maftuchin Romlie, "Implementation of Project-Based Learning Model and Workforce Character Development for the 21st Century in Vocational High School," *International Journal of Instruction* 14, no. 1 (January 1, 2020): 181–98, <https://doi.org/10.29333/IJI.2021.14111A>.

findings rather than providing data in great detail. Please highlight differences between your results or findings and the previous publications by other researchers.

TABLE 1. Average Student Creativity Score in the PjBL and Control Groups

Group	Pre-Test Creativity Score	Post-Test Creativity Score	Increase (%)
PjBL	60	80	20%
Control	62	65	5%

B. The Impact of PjBL on Student Academic Achievement

The impact of the implementation of PjBL on students' academic achievement was measured through a comparison of pre-test and post-test scores on the subjects that were the focus of the project. The results of statistical analysis showed that the experimental group experienced a significant increase in academic scores compared to the control group. The average increase in scores in the PjBL group reached 15%, while in the control group it was only 5% ¹⁸. PjBL provides a space for students to better understand the material through hands-on experience, which makes it easier for them to remember the concepts taught. This approach also facilitates deep learning, where students not only memorize the material but also apply it in real-life situations, ultimately reinforcing their understanding

C. The Effect of PjBL on Student Engagement in Learning

Student involvement during the learning process is very important to support the successful application of the PjBL method. Based on observations in the classroom, students in the PjBL group showed higher engagement than students in the control group. This involvement can be seen from students' initiative to ask questions, express opinions, and cooperate in groups.

Teachers also noted that students in the PjBL group were more motivated and showed higher responsibility towards the assigned tasks. They actively participate in every stage of the project, from planning, implementation, to evaluating project results. This indicates that PjBL provides a more meaningful learning experience, which is able to increase students' interest and involvement in the learning process ¹⁹

¹⁸ Cintamulya, Warli, and Mawartiningsih, "The Development of Project-Based Learning Models That Accommodate the Reflective and Impulsive Cognitive Style."

¹⁹ Arief Rahman Yusuf and Amat Mukhadis, "Model Pengembangan Profesionalitas Guru Sesuai Tuntutan Revitalisasi Pendidikan Vokasi Di Indonesia," *Lectura : Jurnal Pendidikan* 9, no. 2 (August 25, 2018): 130–39, <https://doi.org/10.31849/LECTURA.V9I2.1613>.

TABLE 2. Student Engagement Levels in PjBL and Control Groups

Aspects of Engagement	PjBL Group (%)	Control Group (%)	Aspects of Engagement
Inquiry initiative	75	50	Inquiry initiative
Participation in discussions	85	60	Participation in discussions
Group task responsibilities	90	65	Group task responsibilities

D. Challenges and Solutions in the Implementation of PjBL in Madrasah

The implementation of PjBL in madrasahs is inseparable from challenges, especially related to the limited resources and time needed to implement the project. Based on the results of interviews with teachers, some students have difficulty in managing time and resources to complete projects on time, especially in madrasahs that have limited facilities such as laboratories and digital devices.

To overcome this challenge, the madrasah implemented several solutions, such as flexible time sharing and the provision of technical support from teachers during the implementation of the project. In addition, cooperation with external parties such as relevant communities or organizations can provide additional resource support to support the implementation of PjBL. With these steps, the challenges faced can be minimized, so that PjBL can be applied more optimally in madrasahs.

E. Research Implications and Recommendations for the Development of PjBL in Madrasah

This study shows that the implementation of PjBL in madrasahs has a positive impact on creativity, academic achievement, and student engagement. These implications support the need for more adaptive curriculum development, which allows PjBL to become a learning method that is applied sustainably. Thus, students can gain a learning experience that is more meaningful and relevant to their daily lives

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To support the sustainability of PjBL, it is recommended that madrasahs hold regular training for teachers on PjBL implementation techniques, as well as provide adequate facilities and infrastructure. In addition, the government can play a role in providing policy support and funding that allows the implementation of PjBL in

²⁰ Mawar Ambarsari, Elih Solihatulmilah, and Eka Nurul Muallimah, "Pengaruh Model Pembelajaran Berbasis Proyek (Project Based Learning) Terhadap Kemampuan Menulis Teks Berita Siswa Kelas VIII B SMP NEGERI 2 CIBEER," *DESANTA* 4, no. 1 (2023): 24–31.

madrasahs more widely. This support will help overcome existing obstacles, so that PjBL can continue to contribute to improving the quality of education in madrasahs ²¹.

This approach provides comprehensive insight into the positive impact of PjBL in madrasahs, while demonstrating the potential for sustainable development that can meet the needs of education in the modern era.

4. Conclusion

This study shows that the implementation of Project-Based Learning (PjBL) in madrasahs has a significant impact on increasing students' creativity and academic achievement. The results of statistical analysis showed that the group of students who followed the PjBL method experienced a higher increase in creativity and achievement compared to the control group that used the traditional method. These findings support the idea that PjBL, through a collaborative and project-based approach, encourages students to think critically, solve problems creatively, and better understand the material taught through real-life experiences.

In addition to the impact on academic achievement and creativity, the study also found that PjBL increased student engagement in the learning process. Students in PjBL groups show higher motivation and initiative, as well as more responsibility in completing their projects. This shows that PjBL provides a more meaningful and immersive learning experience, which is in line with the goals of holistic education in madrasahs. Despite the challenges in its implementation, such as limited facilities and time, the solution involving technical support and flexible scheduling helped optimize the success of PjBL in the madrasah.

Overall, the results of this study confirm that PjBL is an effective method to increase student creativity, achievement, and engagement. These findings make a practical contribution to madrasahs in developing a curriculum that is more responsive to student needs, so that this method can be applied sustainably and adapt to the times.

5. Declaration of Conflicting Interests

The authors state that there is no conflict of interest in the publication of this article.

6. Funding Information

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8. References

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