AL MA'ARIEF
Jurnal Pendidikan Sosial dan Budaya

Volume 7 Issue 2, 2025
P-ISSN: 2685-5917, E-ISSN: 2685-5925

Addressing the Learning Plateau in Social Studies through Project-Based Learning in Indonesian Secondary Schools

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Article history
Received: July 1, 2025
Revised: August 18, 2025
Accepted: August 18, 2025

Keywords
Learning Plateau; Project-Based Learning (PjBL); Motivation; Social Studies Education

Abstract:
Background: Students often experience a learning plateau, a stagnation in academic progress that negatively affects motivation and performance. In Social Studies, this condition is exacerbated by conventional teaching methods, yet few studies have examined effective interventions in this field.
Purpose: This study investigates the effectiveness of Project-Based Learning (PjBL) in reducing the learning plateau among Indonesian junior secondary school students, focusing on its ability to enhance engagement and learning outcomes.
Method: A quasi-experimental one-group pretest–posttest design was applied to 23 eighth-grade students at SMP Negeri 12 Parepare. Data were collected using a validated learning plateau questionnaire and analyzed through paired samples t-test and normalized gain (N-Gain).
Results: The mean pretest score was 74.30 (SD = 7.51), which decreased to 51.78 (SD = 10.20) in the posttest, indicating a reduction in plateau symptoms. The paired samples t-test showed a significant difference ($t = 7.721$, $p < 0.001$). The average N-Gain score was 0.29 (low category), reflecting a modest effect size. Distribution analysis revealed a shift from moderate–very high plateau levels (100%) before the intervention to low–very low levels (79.2%) afterward.
Theoretical implication: These findings support sociocultural constructivist theory, demonstrating that PjBL fosters active, collaborative, and context-rich learning that can mitigate stagnation.
Practical implication: PjBL offers educators a replicable strategy to re-engage students in Social Studies, while policymakers may consider integrating it into curriculum design to enhance motivation and reduce learning fatigue in junior secondary education.

This article is available in:
DOI: https://doi.org/10.35905/almaarief.v7i2.14649

1. Introduction

One of the major challenges in contemporary education is the increasing number of students experiencing a learning plateau, a condition in which learning progress halts despite continuous academic effort. This phenomenon is particularly noticeable among junior secondary school students, who often display signs of emotional fatigue, reduced motivation, and a lack of engagement in classroom activities. In the Indonesian context, these symptoms are frequently observed in Social Studies classrooms, where traditional, lecture-based instruction dominates and limits opportunities for student interaction, creativity, and problem-solving. Conventional teaching methods often reduce students to passive recipients of information, failing to stimulate their interest or connect content to real-life experiences. As a result, students frequently exhibit physical signs of boredom, cognitive exhaustion, and emotional withdrawal. If not addressed, this stagnation can lead to academic underperformance and long-term disengagement from school. As education systems strive to enhance both quality and relevance, mitigating the learning plateau has become an urgent pedagogical imperative, especially in subjects that are crucial to civic understanding but often perceived as abstract and unengaging, such as Social Studies (Satrio et al., 2019).

Previous research addressing the learning plateau has generally been categorised into three strands. First, psychological and behavioural studies have examined internal factors such as students' emotional regulation, cognitive load, and motivational decline (Credé & Kuncel, 2008; Wentzel et al., 2010). Second, environmental studies have identified external contributors, including monotonous instruction, inadequate learning support, and rigid curricula (Ko & Lee, 2003). Third, instructional design research has explored innovative methods, such as digital learning platforms, cooperative learning, and active inquiry, to break the cycle of student disengagement (Gameil & Al-Abdullatif, 2023; Sanchez et al., 2020). However, a notable gap remains in the application of Project-Based Learning (PjBL) specifically within the domain of Social Studies. Although PjBL has been widely studied in science education with positive outcomes (Kanter & Konstantopoulos, 2010; Roslina et al., 2022), its impact on reducing learning plateau in Social Studies at the junior secondary level has received limited empirical attention.

In the Indonesian context, this gap is particularly important because Social Studies is often perceived as abstract and less interactive compared to science. Despite its civic relevance, Social Studies teaching rarely employs student-centered and inquiry-based approaches. However, there has been no prior empirical study applying PjBL specifically to reduce learning plateau in Social Studies within Indonesian junior secondary schools. This study offers novelty by investigating how PjBL, as an alternative instructional model, may revitalise student motivation and academic progress in this under-researched subject area.

This research seeks to examine the effectiveness of the Project-Based Learning model in reducing the learning plateau among eighth-grade students in Social Studies at SMP Negeri 12 Parepare, Indonesia. The study is designed to identify the stages of the PjBL implementation process, evaluate students' learning plateau levels before and after the intervention, and assess the model's overall impact. The significance of this study lies in its potential to provide both empirical evidence and pedagogical insight for educators facing similar challenges. By offering a structured and student-centred approach, PjBL may serve as a practical solution to re-engage learners and

enhance instructional quality. Moreover, the study aims to contribute to curriculum development by informing teaching strategies that prioritise active learning and contextual relevance, particularly in subjects traditionally perceived as static or less interactive.

This study is conceptually grounded in Vygotsky's sociocultural theory of constructivism, which posits that learners construct knowledge through social interaction, cultural tools, and meaningful activity within their zone of proximal development (Morcom, 2014; Wibowo et al., 2025). According to this theory, learning is most effective when students engage in collaborative, context-rich tasks that challenge their thinking while being scaffolded by teachers or peers. Project-Based Learning aligns with this theoretical framework by positioning students as active agents in constructing understanding through exploration, teamwork, and reflection (Bell, 2010; Krajcik & Blumenfeld, 2005). The central assumption of this research is that applying PjBL within a constructivist learning environment can significantly reduce students' cognitive and emotional stagnation. By engaging in meaningful projects that connect with real-world issues, students are expected to regain interest, improve retention, and develop essential skills that transcend subject boundaries. Thus, this study not only evaluates instructional efficacy but also affirms the theoretical value of socially-mediated learning processes in addressing educational challenges.

2. Method

This study applied a quantitative approach with a quasi-experimental one-group pretest-posttest design to evaluate the effectiveness of the Project-Based Learning (PjBL) model in reducing students' learning plateau in social studies. This study employed a quasi-experimental design because random assignment of participants to control and experimental groups was not feasible due to the constraints of the school setting (İlhan, 2014). In educational environments, especially in formal school systems, classes are typically pre-determined and cannot be randomly restructured for research purposes (Ong-Dean et al., 2011; Paufler & Amrein-Beardsley, 2014). As such, the researchers selected an intact classroom (class VIII.1) to serve as the experimental group. This design allows for the examination of cause-and-effect relationships, specifically, the impact of the PjBL model on students' learning plateau, while maintaining ecological validity within a natural classroom context.

Table 1. Design of one-group pretest-posttest

Sample	Pretest	Treatment	Posttest
Experimental classes	O1	XE	O2

Information:
O1 = Pretest value of the experimental class before treatment.
O2 = Posttest value of the experimental class after treatment.
XE = Experimental class that gets treatment, i.e., using. Project-based learning model

The research was conducted at SMP Negeri 12 Parepare, Indonesia, during the 2023/2024 academic year. The sample consisted of 23 eighth-grade students (14 male, 9 female) selected through purposive sampling based on teacher

recommendations indicating high levels of learning plateau. While the small sample size limits the generalizability of findings, it provides valuable initial insights into classroom-level interventions. Future studies with larger, more diverse samples are recommended to strengthen external validity.

Data were collected using a learning plateau questionnaire designed to measure emotional fatigue, cognitive overload, physical tiredness, and motivational decline. The instrument used a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating higher levels of learning plateau. The initial instrument contained 38 items, which were subjected to expert review for content validity. Validity was tested using the Pearson product-moment correlation, resulting in 24 valid items ($r_{calculated} > r_{table}$, $\alpha = 0.05$). Reliability was measured using Cronbach's Alpha, yielding a value of 0.840, which indicates high internal consistency (greater than the 0.7 threshold typically considered acceptable).

The PjBL intervention followed five stages: (1) essential questions, (2) project planning, (3) scheduling, (4) monitoring, and (5) evaluation and presentation. Students worked in groups to design and present projects on Social Studies themes, guided by the teacher throughout the process. Both pretest and posttest were administered to assess changes in learning plateau levels. Data analysis included normality testing (Kolmogorov–Smirnov), a paired samples t-test to determine significant differences between pretest and posttest, and normalised gain (N-Gain) to assess the magnitude of improvement. N-Gain was interpreted according to conventional categories: low ($g \leq 0.3$), medium ($0.3 < g \leq 0.7$), and high ($g > 0.7$).

3. Results and Discussion

3.1. Bringing learning to life: Project-based learning in action

The implementation of the Project-Based Learning (PjBL) model in this study followed a structured five-phase process, namely: essential questions, project planning, time management, project monitoring, and project presentation and evaluation. During the essential question phase, students were introduced to inquiry-based prompts related to the development of transportation and communication technologies in ASEAN countries. These prompts served to activate prior knowledge and stimulate students' curiosity. In the planning stage, students organised themselves into groups and selected subthemes for their projects, such as traditional transportation or modern communication. They collaboratively designed guessing puzzles that visually represented their selected themes. The time management phase ensured that each group completed the project within a seven-day timeframe. Teachers provided structured guidance and monitored each group's progress daily. Finally, students presented their projects, explained the rationale behind their designs, and engaged peers in interactive puzzle-solving. This process enabled students to connect abstract content with tangible learning experiences. The implementation of PjBL created a vibrant classroom environment where learning became a participatory, social, and contextual process, reflecting the goals of the curriculum and the developmental needs of learners.

The success of this implementation can be explained by previous studies that have emphasised the importance of contextual and collaborative learning in enhancing student engagement. For example, Amahorseya & Mardliyah (2023) demonstrated that learning environments grounded in Vygotsky's sociocultural

theory lead to improved student participation and understanding due to the emphasis on social interaction and scaffolding. Similar findings were reported by Anazifa & Djukri (2017), who noted that project-based tasks rooted in real-world issues significantly increased students' interest in science learning. The present study supports these conclusions in the context of social studies, suggesting that the use of projects that allow students to explore topics in depth promotes deeper cognitive engagement. Moreover, Lavli & Efendi (2024) emphasised that project-based learning can support creative thinking by encouraging students to produce artefacts that require interpretation and construction of knowledge. These studies collectively affirm that students are more engaged and perform better when learning involves collaboration, creativity, and relevance to their lived experiences.

The processes that made this implementation effective can be traced to the alignment of learning activities with principles of active and constructivist learning. The planning and presentation phases, for instance, activated higher-order thinking skills and allowed students to exercise autonomy. Fahrezi et al. (2020) assert that students are more likely to demonstrate agency and responsibility when given tasks that require them to explore, analyse, and present findings. In this study, the puzzle creation project not only encouraged such exploration but also required negotiation, communication, and cooperation among group members. These are all key elements identified in collaborative learning theory as drivers of student motivation and knowledge construction. As students moved through each phase, they gradually developed not only their understanding of the subject matter but also soft skills such as time management, teamwork, and public speaking. This multi-dimensional development further solidified the value of PjBL as a learning model that operates beyond content delivery to address holistic educational goals.

The findings from this stage of the research hold significant implications both theoretically and practically. Theoretically, the successful integration of PjBL into the social studies classroom contributes to the expanding literature on constructivist pedagogy, especially in the context of non-science disciplines. It reinforces the argument that knowledge construction is most effective when situated within relevant, meaningful tasks that promote learner autonomy and collaboration. Practically, the study offers educators a replicable model for designing interactive social studies lessons that combat student disengagement. It provides concrete evidence that curriculum delivery can be enhanced through structured project work, thus encouraging curriculum developers and policymakers to endorse PjBL within formal teaching frameworks. Furthermore, it opens avenues for teacher training programs to include modules on project design and facilitation, ensuring that teachers are equipped to foster active learning environments. Future research can explore the scalability of such models across different grade levels and content areas.

3.2. From plateau to progress: Shifting student engagement levels

The application of the PjBL model in this study led to a notable shift in students' engagement levels, particularly in addressing symptoms of learning plateau. Before the intervention, 13 out of 23 students (56.6%) were categorised as experiencing a moderate level of plateau, while 6 students (34.8%) were in the high category, and 2 students (8.7%) were in the very high category. Notably, no students fell into the low or very low categories before the treatment. This distribution indicates that the students had reached a stagnation point marked by emotional, cognitive, and

motivational fatigue. After the PjBL intervention, the posttest results showed a dramatic reversal: 15 students (66.2%) moved into the low category, 3 students (13.0%) into the very low category, and only 5 students (21.7%) remained in the moderate category, with none in the high or very high ranges. This shift illustrates that PjBL served as an effective method for re-engaging students with the learning process, reducing cognitive overload and restoring intrinsic motivation.

Table 2. Comparison of student learning plateaus before and after the implementation of the project-based learning model

Category	Pre-Test	Percentage	Pos-Test	Percentage
Very Low	0	0%	3	13,0%
Low	0	0%	15	66,2%
Moderate	13	56,6%	5	21,7%
Tall	6	34,8%	0	0%
Very High	2	8,7%	0	0%
Sum	23	100%	23	100%

Source: research data, 2024

The observed reduction in learning plateau aligns with findings from previous research that emphasise the importance of instructional variation and contextual engagement. According to Lisnawati et al. (2020), one of the key triggers of learning plateau is the repetitive and monotonous nature of conventional instruction, which leads students to disengage due to a lack of novelty or relevance. Similarly, Satrio et al. (2019) highlight that a plateau can emerge from emotional and physical exhaustion caused by constant passive learning without intellectual stimulation. In light of these studies, the success of PjBL in the present research can be attributed to its ability to break the monotony by introducing hands-on, collaborative, and meaningful tasks. Students were no longer confined to absorbing knowledge passively but were instead constructing knowledge through activity, discourse, and reflection. These pedagogical shifts provided the variety and purpose that are essential to sustaining long-term motivation and attention.

The transformation in student engagement occurred because PjBL activated multiple dimensions of learning simultaneously—cognitive, emotional, and social. Students collaborated in small groups to construct, critique, and present puzzle projects, which demanded both academic effort and interpersonal coordination. This model shifted students from consumers of content to producers of knowledge, enhancing ownership and accountability. According to Lusiana (2023), such engagement with real-life contexts not only improves understanding but also fosters resilience against learning fatigue. The active problem-solving and inquiry inherent in PjBL mirror what Zimmerman (2002) identifies as self-regulated learning: students setting goals, monitoring progress, and evaluating outcomes. These processes combat plateau by giving students greater control and a sense of progress. In this study, the group activities allowed for peer support, cognitive conflict, and mutual feedback, all of which are essential mechanisms for maintaining focus, managing frustration, and achieving mastery.

The implications of these findings are significant both in theory and in practice. Theoretically, the study adds to the growing body of literature that defines learning plateau as a dynamic, context-sensitive condition rather than a fixed trait. It demonstrates that plateau can be mitigated or reversed through intentional instructional design that prioritises student agency and relevance. Practically, educators can draw on this model to redesign their classrooms into spaces where

students are active participants in shaping their learning journeys. For curriculum developers, the success of PjBL underscores the need to integrate interdisciplinary, project-driven tasks that not only deliver content but also develop learner autonomy. Educational institutions can also invest in teacher training programs that prepare educators to facilitate such models effectively.

3.3. Statistical evidence that matters: Evaluating the impact of PjBL

The statistical analysis of this study provides empirical support for the effectiveness of the Project-Based Learning (PjBL) model in reducing students' learning plateau. The pretest and posttest data collected from 23 students were analysed using the paired sample t-test to determine whether there was a significant difference in students' plateau levels before and after the intervention. The average pretest score was 74.30 (SD = 7.51), while the average posttest score dropped to 51.78 (SD = 10.20), indicating a substantial decline in learning plateau indicators. The paired sample t-test revealed a t-value of 7.721 and a significance level of p = 0.000 (Table 3), confirming that the difference between pretest and posttest scores was statistically significant at the 0.05 level. This result suggests that the PjBL intervention had a real, measurable impact on students' motivation and engagement. In addition, the normalised gain (N-Gain) analysis showed an average gain score of 0.29, which falls into the "low" category. While not high, this gain reflects consistent improvement across the sample and supports the narrative of reduced learning fatigue.

These findings are consistent with prior studies that have used quantitative methods to assess the impact of PjBL. For instance, Nita & Irwandi (2021) found that PjBL significantly improved creative thinking and reduced learning resistance in science subjects through student-created bioplastic projects. Similarly, Fahrezi et al. (2020) conducted a meta-analysis that demonstrated the effectiveness of PjBL in improving learning outcomes across elementary school science subjects. Although this study focuses on social studies, the parallels are clear: active, project-based instruction leads to cognitive and motivational benefits, especially in contexts where students previously experienced disengagement. Moreover, Deci et al. (1991) emphasised that high plateau levels are often the result of instructional environments that fail to stimulate learners' curiosity and autonomy. By offering students structured autonomy and relevant, engaging tasks, the PjBL model addressed these weaknesses and helped restore learning vitality. Thus, the statistical findings are not only internally valid but also externally supported by a broader body of educational research.

The mechanisms through which these statistical improvements occurred can be explained through the lens of educational psychology and learning theory. According to Zimmerman (2002), self-regulated learning is fostered when learners are actively involved in setting goals, managing their time, and evaluating their performance, all of which are embedded in the PjBL framework. Students in this study had to organise their group activities, divide tasks, solve practical problems, and assess the outcomes of their collaborative efforts. These processes activated metacognitive skills and helped reduce reliance on teacher-directed instruction, thus lowering the psychological and emotional barriers associated with a learning plateau. Furthermore, Vygotsky's (1978) Zone of Proximal Development (ZPD) concept supports this model: students working slightly beyond their independent capabilities with the help of peers and teachers were able to extend their learning boundaries. The

role of peer scaffolding, structured deadlines, and tangible project goals contributed to students' growing confidence, deeper understanding, and sustained motivation, which were ultimately reflected in the improved posttest results and gain scores.

The implications of these statistical findings are both far-reaching and immediately actionable. Theoretically, the study contributes to the empirical validation of PjBL as an effective strategy not only for cognitive development but also for mitigating affective barriers like learning plateau. It reinforces the argument that learning outcomes are deeply connected to student engagement and instructional design. Practically, this research offers evidence that can inform teacher practice, school policy, and curriculum development. Educators are encouraged to integrate structured project-based models into their lesson plans to prevent stagnation and maintain momentum in learning. For policymakers, the results support greater investment in pedagogical innovation and teacher training in active learning methodologies. Furthermore, future research should consider using mixed-methods approaches to further explore student perspectives and examine long-term retention effects. This study opens a pathway for transforming passive classrooms into dynamic learning communities supported by data-driven instructional change.

4. Conclusion

This study demonstrated that the Project-Based Learning (PjBL) model is an effective pedagogical strategy for addressing the phenomenon of learning plateau in junior secondary Social Studies education. Through the structured implementation of PjBL's five stages, essential questions, project planning, scheduling, monitoring, and evaluation, students transitioned from passive recipients of information to active, collaborative problem solvers. The results revealed a statistically significant reduction in students' learning plateau levels, with posttest distributions showing marked shifts toward low and very low categories. Although the average N-Gain score was categorised as low (0.29), the consistent direction of improvement and the substantial change in student engagement reflect the positive impact of PjBL on cognitive, emotional, and motivational dimensions of learning. These findings substantiate the theoretical assumptions rooted in Vygotsky's sociocultural constructivism, affirming that meaningful learning is most effectively achieved through socially mediated, context-rich, and student-centred experiences.

Beyond its empirical validation, this study contributes conceptually to the broader discourse on active learning models by demonstrating that PjBL is not limited to science or vocational domains but can be successfully adapted to revitalise motivation and participation in abstract, civically-oriented disciplines such as Social Studies. The study also provides a replicable instructional framework that addresses the multidimensional challenges associated with learning plateau, a phenomenon that has become increasingly visible in today's classrooms. From a practical standpoint, the findings encourage educators to reconfigure lesson designs to integrate inquiry-based and collaborative elements, while policymakers are urged to support institutional shifts toward more dynamic and participatory teaching models. Given the scope and scale of the intervention, this study offers a foundation for future research to explore PjBL's long-term impact, cross-curricular application, and relationship to other cognitive or affective learning outcomes. Limitations such as the small sample size and lack of a control group present opportunities for further

empirical refinement. In closing, this study affirms the transformative potential of PjBL in overcoming stagnation in student learning and contributes meaningfully to the ongoing pursuit of pedagogical innovation in Social Studies education.

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