


Project-Based Learning Progression: Identifying The Impact of Learning on Students' Motivation and Learning Outcomes

Arif Firmansyah*, Nurul Fitriah Aras, Mardi Lestari, Muchdar

Elementary School Teacher Education, Universitas Tadulako, Palu, Indonesia

<p>Keywords: <i>Project-based learning, motivation, learning outcomes, Social Studies</i></p> <p>Article history Received: 5 December 2023 Revised: 21 February 2024 Accepted: 21 February 2024 Published: 27 February 2024</p> <p>*Corresponding Author Email: ariffirmansyah79@gmail.com</p> <p>DOI: 10.20961/paedagogia.v27i1.81242</p> <p>© 2024 The Authors. This open-access article is distributed under a (CC-BY License)</p> 	<p>Abstract: The study aims to address the issue of low motivation and poor learning outcomes in Social Studies. Many students find Social Studies dull due to its focus on memorization, which leads to passive learning. Additionally, teachers' limited familiarity with various learning approaches contributes to students' lack of motivation. The study investigates whether implementing a project-based learning (PBL) model can positively impact motivation and learning outcomes in Social Studies. Fifth-grade students from SDN 17 Poso participated in the quasi-experimental research, divided into experimental and control groups. Pretests and posttests were administered before and after the learning period, respectively, to both groups. Data collection methods included tests, questionnaires, and documentation. Pretests helped establish baseline knowledge levels and facilitated comparison to evaluate the effectiveness of the PBL intervention. Results indicated a significant improvement in motivation and learning outcomes among students exposed to the project-based learning model. The study's implications extend to enhancing teaching methodologies and strategies to foster better engagement and achievement in Social Studies.</p>
<p>How to cite: Firmansyah, A., Aras, N. F., Lestari, M., & Muchdar. (2024). Project-Based Learning Progression: Identifying The Impact of Learning on Students' Motivation and Learning Outcomes. <i>PAEDAGOGIA</i>, 27(1), 137-142. Doi: 10.20961/Paedagogia.V27i1.81242</p>	

INTRODUCTION

The Social Studies (IPS) combines social sciences that teach about people's lives. *Social studies* is a primary school subject that explores or examines the concepts, symptoms, and social facts in society (Dari, 2022). A field of education focused on making good citizens is one of them through social studies (Hilmi, 2017). Social studies learning is essential to all students, especially in elementary school, to equip students with the ability to think logically, analytically, systematically, critically, creatively, and socially. Studying social studies is expected to help students understand the problems that exist in society and address the existence of these problems based on the knowledge that has been gained (Sudrajat & Budiarti, 2020). Social studies teach about community life and how to socialize in the environment.

However, the reality of learning in schools is different from what is expected. The learning process is just listening, doing assignments, and only focusing on books, so learning in the classroom is very passive. There needs to be more interaction between teachers and students and between students and other students, making learning ineffective. This also impacts low student learning outcomes, and teachers must motivate students to be more active, creative, and innovative. Motivation is necessary for learning because someone who needs more motivation to learn will not carry out learning activities. Learning motivation is a force within a person that arises in learning activities to have a sense of interest, activity, and enthusiasm for learning (Afandi, 2015). Motivation is one factor that encourages students to desire to learn (Khoiruddin et al., 2022). Students who are motivated to learn will undoubtedly affect their learning outcomes. More than optimal learning is needed for students to develop their thinking skills; it will affect learning outcomes (Setiawan et al., 2013: 2).

Students' understanding of the material's content is a cognitive learning outcome. One indicator of good learning outcomes is that students can understand the content of the material taught by the teacher.

Learning outcomes can be interpreted as the final decision used as a benchmark in a program, namely success or failure, based on indicators in teaching and learning activities (Puspitasari et al., 2022). Learning outcomes are changes or new skills students possess after experiencing an experience in learning (Rusman, 2017). Based on preliminary observations at SDN 17 Poso in social studies learning, students still need to do their assignments better, try to get the best grades, and have deficient student curiosity. In addition, the lack of teacher innovation in learning causes the material students obtain to be memorized and quickly forgotten. Students who need more motivation for a lesson or specific material tend to lose attention to the teacher.

One way to improve the quality of education is to update the learning process properly so that students can develop creative ideas and be more active in the learning process (Asmahasanah, 2019). The success of the learning process is inseparable from the learning models used by teachers. Using a suitable model in learning plays a role in improving teaching objectives (Muzana et al., 2021). According to Surya et al. (2018), the project-based learning model is a student-centered learning model with project-based teaching and learning activities. Project Learning (PjBL) provides opportunities for students to determine their projects by formulating questions to be answered, choosing topics to be researched, and determining research activities to be carried out (Sudrajat & Budiarti, 2020). The teacher's role in learning is as a facilitator, providing materials and work experiences, encouraging students to discuss and solve problems, and ensuring students remain energized as they carry out the project. Project-Based Learning (PjBL) is a strategy that can improve various competencies, such as academic achievement, critical thinking, problem-solving skills, and creativity (Mursid et al., 2022). PjBL is a learning model that asks students to complete a project to produce a product (Pratiwi et al., 2018).

The PjBL model positively influences student motivation and learning outcomes (Sakilah et al., 2020). The PjBL model in this study is expected to improve cognitive abilities and student activities, ultimately facilitating student understanding of the material and improving student learning outcomes. Learning focuses on the core concepts and principles of a discipline of study, involving students in problem-solving investigations and other meaningful tasks, providing opportunities for students to work in groups, and culminating in producing natural products. The resulting product will be adapted to social studies material so that students are excited about learning and knowledge is not easily forgotten. Based on the description above, the researcher wants to examine the effect of the project-based learning model on V-class elementary school students' motivation and learning outcomes.

METHOD

A quantitative approach is employed in this research, specifically utilizing a quasi-experimental research design. Quasi-experimental research is characterized by the necessity of formulating problem statements with a causal relationship between variables during the background formulation phase (Darmawan, 2014). This design was chosen to establish causal inferences regarding the impact of the project-based learning model on motivation and learning outcomes in social studies.

Experimental Setup

The study was conducted within the framework of two distinct groups: the experimental and control groups. Before initiating the learning sessions, both groups underwent a pretest to assess their baseline understanding and competence in social studies. After completing the learning activities, a posttest was administered to each group to evaluate the effectiveness of the intervention. The experimental group experienced the project-based learning model, while the control group adhered to conventional teaching methods.

Data Collection Techniques

Data collection primarily focused on N-Gain scores, calculated as the difference between posttest and pretest scores. This allowed for a direct comparison of the effectiveness of the project-based learning intervention in improving students' understanding of social studies concepts. Additionally, documentation of the intervention process and questionnaires to assess student perceptions and attitudes toward the

learning approach were utilized.

Hypothesis Testing

Hypothesis testing constituted a pivotal component of this study, aiming to elucidate differences in motivation and learning outcomes in social studies between the experimental and control groups. The t-test method was employed to rigorously analyze the collected data and determine the statistical significance of the observed differences. Through hypothesis testing, this research sought to establish empirical evidence supporting the effectiveness of the project-based learning model in enhancing both motivation and learning outcomes in social studies.

RESULT AND DISCUSSION

Result

Researchers conducted this research for four meetings. The first meeting was held in the experimental class, namely class VB, on August 2, 2023, by giving a pretest and then directly entering the lesson using the project-based learning model. The second meeting was held on August 5, 2023. After teaching, the researcher gave a posttest using an instrument to determine the effect of motivation on student social studies learning outcomes. While in the control class, the first meeting was held on August 7, 2023, in class VA by giving a pretest and then teaching using conventional methods. The second meeting of the control class was held on August 9, 2023. At the end of the meeting, the researcher gave a posttest to measure the effect of motivation and learning outcomes after being taught using conventional methods. The material taught by researchers is about natural phenomena. Figure 1 shows the steps of the project-based learning model.

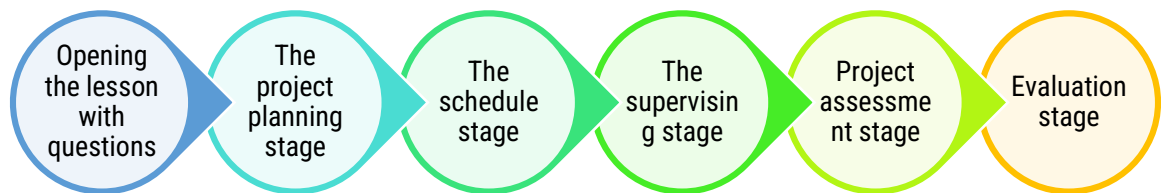


Figure 1. PjBL Steps

In the opening stage of the lesson, the researcher initiated the activity by presenting pictures depicting natural phenomena and prompting students to share their initial knowledge related to the images. Students were arranged in groups for collaborative discussion. Subsequently, during the project planning stage, students worked in groups to create collages using the provided pictures. Moving on to the execution stage, students were directed to affix the pictures onto HVS paper using glue and explain each image, as these tasks were to be presented later. During the supervision phase, the researcher closely monitored each group's progress with their college projects and facilitated student presentations. Following the presentations, the researcher assessed the resulting projects, offering feedback on each group's presentation. Finally, in the evaluation phase, students were encouraged to reflect on their experiences and share their feelings about the project-making process.

The Effect of the Project-Based Learning Model on Student Motivation

Learning motivation is measured using a questionnaire and given to the experimental and control classes. The following is the research data for the experimental class taught using the project-based learning model and the control class taught using conventional methods that affect student learning motivation in Table 1.

Table 1. Results of Learning Motivation Assessment of Experimental and Control Classes

No	Measured Indicators	Average	
		Control Class	Experiment Class
1	The existence of passion and desire to succeed	2,78	3,56
2	There is Encouragement and Need for Learning	2,20	2,67
3	There are hopes and dreams for the future	2,15	3,34
4	There is Reward in Learning	2,95	3,47
5	There are interesting activities	1,53	2,87
6	There is a conducive learning environment, making it possible for someone to study well.	3,81	3,96
Average		2,57	3,31
Category		Good	Very good

The interpretation of the questionnaire results presented in Table 1 utilizes a grading scale where scores between 3.25 and 4.00 are classified as "excellent," scores between 2.50 and 3.25 are labeled as "good," scores ranging from 1.75 to 2.50 are deemed "sufficient." Scores falling within the range of 1.00 to 1.75 are categorized as "poor."

Upon analysis of Table 1, it is evident that the assessment outcomes regarding student learning motivation in both the experimental and control classes indicate similar motivation levels. Specifically, the average learning motivation score in the experimental class is 3.31, falling within the "excellent" category, while the average learning motivation score in the control class is 2.57, classified as "good." This suggests that, on average, students in both groups exhibit commendable levels of motivation toward their learning endeavors. However, it is noteworthy that students in the experimental class, where project-based learning was employed, demonstrated slightly higher levels of motivation than those in the control class, where conventional teaching methods were utilized. Despite this difference, both groups exhibit motivation levels indicative of positive engagement in the learning process.

Effect of a Project-Based Learning Model on Learning Outcomes

Learning outcomes were measured using multiple-choice questions in experimental and control classes. This test is given before learning (pretest) to determine students' initial ability and after learning (posttest) to determine their final ability. The N-gain test analysis was conducted to determine the average increase in learning outcomes between the experimental and control classes. The analysis results of the average increase in learning outcomes in the gain test can be seen in Table 2.

Table 2. Average Learning Outcomes of Experimental Classes and Control Classes

Class	Pretest	Posttest	Gain	N-gain	Category
Experiment	21,4	75,7	54,3	0,68	Moderate
Control	26,4	63,8	37,4	0,51	Moderate

Table 2 illustrates students' learning outcomes in the experimental class, showcasing a notable average increase categorized as moderate, as per the gain analysis, N-Gain. Before implementing the project-based learning model, student learning outcomes were recorded at 21.4 during the pretest phase. After completing the learning activities with the project-based learning model, the post-test results showed substantial improvement, with student learning outcomes reaching 75.7. This indicates a considerable enhancement in student learning outcomes due to utilizing the project-based learning model.

The difference between the pretest and posttest scores, also known as the gain value, amounted to 54.3. Consequently, the N-Gain value computed at 0.68 suggests a moderate increase in the average student learning outcomes within the experimental class. This statistical measure further validates the

efficacy of the project-based learning approach in fostering significant improvements in students' understanding and mastery of social studies concepts. In contrast, students in the control class, who were taught using conventional methods, exhibited similar trends in learning outcomes. Before the conventional learning sessions commenced, the pretest scores indicated a baseline understanding of 26.4. Subsequently, after completing the conventional learning activities, the post-test scores demonstrated an increase in learning outcomes, reaching 63.8. This signifies a noticeable improvement in student learning outcomes within the control class.

The gain value, representing the difference between the pretest and posttest scores, was calculated at 37.4. Accordingly, the corresponding N-Gain value stood at 0.51, indicating a moderate increase in the average learning outcomes of students in the control class. While not as pronounced as the improvements observed in the experimental class, this finding still underscores the effectiveness of conventional teaching methods in enhancing student understanding of social studies concepts.

The substantial increase in learning outcomes observed in the experimental and control groups underscores the significance of instructional interventions in promoting student academic achievement. The project-based learning model, characterized by its emphasis on hands-on, experiential learning, proved particularly effective in enhancing student engagement and comprehension in learning (Kartimi et al., 2021; Shidiq et al., 2021, 2022). The moderate N-Gain values obtained for both groups indicate substantial progress in student learning outcomes, suggesting that both instructional approaches have merit in facilitating meaningful learning experiences.

However, it is noteworthy that the N-Gain value was slightly higher in the experimental group than in the control group, indicating that the project-based learning model yielded marginally better results in improving student understanding and retention of social studies content. This finding aligns with previous research emphasizing the benefits of active learning methodologies, such as project-based learning, in promoting deeper conceptual understanding and long-term knowledge retention.

Discussion

Effect of a Project-Based Learning Model on Learning Motivation

Students do not just sit still during learning activities. However, all students participate, are active, and are quick to ask the teacher about the material they need help understanding. Hence, they are excited about the learning process, namely, doing projects. Students also always feel energized and energized in lessons because all group members are involved in project work; this shows that there is a significant influence on student learning motivation in the learning process.

The project-based learning model can provide learning motivation to students so that they are eager to pay attention to the teacher explaining and working together in groups. So, there is a significant increase in student learning motivation. This can be seen in the average motivation of experimental class students of 3.31, with a perfect category. This aligns with the opinion of Majid and Rochman (2015) that the project-based learning model can increase students' motivation to learn and encourage their ability to do meaningful work, and they need to be appreciated.

Students must work together to achieve goals; in this learning, students with higher abilities will motivate students who are less able to participate actively in project completion (Pangesti et al., 2020). The project designed and created by students is a project that allows them to analyze and work together to complete the product that has been designed. In addition, student involvement in completing the project makes students more enthusiastic about completing the task (Sakilah et al., 2020). In addition, Sukmana and Amalia's research (2021) results say that the project-based learning model influences increasing student learning motivation. The project-based learning model positively influences student learning motivation because students can demonstrate and present projects carried out in learning (Chiang & Lee, 2016).

Effect of a Project-Based Learning Model on Learning Outcomes

Based on the calculation of hypothesis testing using the t-test with a significance level of 5%, the post-test test results from the control and experimental classes have testing criteria where $t_{count} > t_{table}$, namely $2.18 > 2.02$, so that H_0 is rejected and H_1 is accepted, which means it can be concluded that

there is an effect of the project-based learning model on learning outcomes.

According to the research of Pangesti et al. (2020), students who play an active role in learning can be trained to socialize and work together with groups to complete projects to influence student learning outcomes by using the project-based learning model. Lawe Y (2018) believes that the project-based learning model can be used as a learning model by teachers in the learning process, and this model is proven to improve student learning outcomes. Other supporting factors that increase student learning outcomes are learning that is designed to be fun, two-way learning interactions, actively expressing their opinions, and learning becoming meaningful because students are directly involved in learning so that the knowledge they gain is easily understood.

While this study offers valuable insights into the positive impact of the project-based learning model on student motivation and social studies learning outcomes, it is essential to acknowledge certain limitations. The specific context of social studies classrooms and the relatively short duration of the intervention may limit the generalizability of the findings to other subjects or extended time frames. Additionally, potential biases inherent in the quasi-experimental design and the specific characteristics of the participating students could influence the observed effects.

Despite these limitations, the study holds several advantages. The quasi-experimental design allowed for a controlled comparison between the experimental and control groups, contributing to the internal validity of the findings. The use of pretests and posttests, along with multiple data collection methods such as questionnaires and documentation, added depth to the analysis. Moreover, the detailed description of the project-based learning model's implementation provides a practical guide for educators interested in adopting similar approaches in their classrooms. This research opens up various opportunities for future investigations. Long-term studies could explore the sustainability of the project-based learning model's impact on motivation and learning outcomes over an extended period. Moreover, expanding the research to different grade levels, subjects, or educational settings would contribute to a more comprehensive understanding of the model's applicability. Exploring variations in project-based learning implementation and their effects on diverse student populations could provide nuanced insights. Additionally, addressing potential biases or constraints in the research design, such as considering the role of teacher experience and student background, could further enhance the robustness of future investigations. Overall, this study serves as a stepping stone for further research that delves deeper into the multifaceted aspects of project-based learning in enhancing student motivation and academic achievements.

CONCLUSION

In conclusion, the study demonstrates a significant impact on the motivation and social studies learning outcomes of fifth-grade students at SDN 17 Poso. This impact is attributed to the engaging nature of the instructional approach, which actively involves all students in the discovery of new knowledge relevant to the content being studied. By embracing innovative pedagogical strategies, educators have the opportunity to cultivate dynamic and effective learning environments that not only enhance student motivation but also yield tangible improvements in overall learning outcomes. These findings underscore the importance of moving beyond traditional teaching methods and embracing instructional approaches that prioritize active engagement and meaningful learning experiences. As such, educators are empowered to foster a culture of curiosity, critical thinking, and academic excellence among their students, ultimately contributing to their holistic development and lifelong success.

REFERENCES

- Afandi, R. (2015). Pengembangan Media Pembelajaran Permainan Ular Tangga Untuk Meningkatkan Motivasi Belajar Siswa dan Hasil Belajar IPS di Sekolah Dasar. *JINoP (Jurnal Inovasi Pembelajaran)*, 1(1), 77. <https://doi.org/10.22219/jinop.v1i1.2450>
- Asmahanah, Salati. 2019. Implementasi Scientific Learning Melalui Model Project Based Learning dalam Meningkatkan Hasil dan Proses Pembelajaran IPS. *Journal of Elementary Education*, 3(2)
- Chiang, C. L., & Lee, H. (2016). The Effect of Project-Based Learning on Learning Motivation and Problem-

- Solving Ability of Vocational High School Students. *International Journal of Information and Education Technology*, 6(9), 709–712. <http://www.ijiet.org/show-76-881-1.html>
- Dari, Pebri Wulan., Hermansyah., dan Selegi, Susansi Faipri. 2022 Efektivitas Model Pembelajaran Project Based Learning Terhadap Hasil Belajar IPS Kelas IV. *Innovative: Journal Of Social Science Research*, 2(1). <https://doi.org/10.31004/innovative.v2i1.150>
- Darmawan, D. (2014). *Metode Penelitian Kuantitatif*. Remaja Rosdakarya.
- Hilmi, M. Z. (2017). Implementasi Pendidikan Ips Dalam Pembelajaran Ips Di Sekolah. *Jurnal Ilmiah Mandala Education*, 3(2), 164. <https://doi.org/10.58258/jime.v3i2.198>
- Kartimi, Shidiq, A. S., & Nasrudin, D. (2021). The elementary teacher readiness toward stem-based contextual learning in 21st century era. *Elementary Education Online*, 20(1), 145–156. <https://doi.org/10.17051/ilkonline.2021.01.019>
- Khoiruddin, Rifqi., Sunarto., dan Sunarso, Ali. 2022. Pengembangan Modul dalam PBL untuk meningkatkan Kemampuan Pemahaman Konsep IPS dan Motivasi Belajar Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(3)
- Lawe Yosefina. (2018). Pengaruh Model Pembelajaran Berbasis Proyek Berbantuan Lembar Kerja Siswa Terhadap Hasil Belajar IPA Siswa SD. *Journal of Education Technology*, 2(1):26-34
- Majid, A., & Rochman., C. (2015). *Pendekatan Ilmiah Dalam Implementasi Kurikulum 2013*. Remaja Rosdakarya.
- Mursid, R., Saragih, Abdul Hasan dan Hartono, Rudi. 2022. The Effect of the Blended Project-based Learning Model and Creative Thinking Ability on Engineering Students' Learning Outcomes. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, 10(1), 218-235. <https://doi.org/10.46328/ijemst.2244>
- Muzana, Syarifah Mahriza dkk. E-STEM project-based learning in teaching science to increase ICT literacy and problem solving. *International Journal of Evaluation and Research in Education (IJERE)*, 10(4)
- Pangesti, Widya Ayu., Fanani, Ahmad dan Pastyo, Danang. 2020. Pengaruh Model Project Based Learning Terhadap Motivasi dan Hasil Belajar Siswa. *Jurnal Buana Pendidikan*, 16(30)
- Pratiwi, I. A., Ardianti, S. D., & Kanzunudin, M. (2018). Peningkatan Kemampuan Kerjasama Melalui Model Project Based Learning (Pjbl) Berbantuan Metode Edutainment Pada Mata Pelajaran Ilmu Pengetahuan Sosial. *Refleksi Edukatika : Jurnal Ilmiah Kependidikan*, 8(2). <https://doi.org/10.24176/re.v8i2.2357>
- Puspitasari, S., Hayati, K. N., & Purwaningsih, A. (2022). Efektivitas Penggunaan Model Blended Learning Terhadap Motivasi Belajar dan Hasil Belajar IPS. *Jurnal Basicedu*, 6(1), 1252–1262. <https://doi.org/10.31004/basicedu.v6i1.2186>
- Rusman. (2017). *Belajar dan Pembelajaran Berorientasi Standar Proses Pendidikan*. Kencana Prenada Media Group.
- Sakilah, S., Yulis, A., Nursalim, N., Vebrianto, R., Anwar, A., Amir, Z., & Sari, I. (2020). Pengaruh Project Based Learning Terhadap Motivasi Belajar Sekolah Dasar Negeri 167 Pekanbaru. *JMIE (Journal of Madrasah Ibtidaiyah Education)*, 4(1), 127. <https://doi.org/10.32934/jmie.v4i1.175>
- Setiawan, A. Soegiyanto, H., & Lestari, L. (2013). Penggunaan Model Pembelajaran Problem Based Learning Untuk Meningkatkan Pemahaman Konsep Masalah-Masalah Sosial. *Jurnal Penelitian Ilmu Pendidikan*. Surakarta: Universitas Sebelas Maret.
- Shidiq, A. S., Permasari, A., Hernani, H., & Hendayana, S. (2021). The use of simple spectrophotometer in STEM education: A bibliometric analysis. *Moroccan Journal of Chemistry*, 9(2), 290–300. <https://doi.org/10.48317/IMIST.PRSM/morjchem-v9i2.27581>
- Shidiq, A. S., Permasari, A., Hernani, H., & Hendayana, S. (2022). Contemporary Hybrid Laboratory Pedagogy : Construction of a Simple Spectrophotometer with STEM Project-Based Learning to Introduce Systems Thinking Skills. *Asia Pacific Journal of Educators and Education*, 37(2), 107–146.
- Sudrajat, A., & Budiarti, I. (2020). Peningkatan Hasil Belajar Ips Melalui Model Project Based Learning Kelas Iv Sdit Al Kawaakib Jakarta Barat. *WASIS : Jurnal Ilmiah Pendidikan*, 1(2), 105–109. <https://doi.org/10.24176/wasis.v1i2.5441>
- Sukmana, Indradi Kartika dan Amelia, Nur. 2021. Pengaruh Model Pembelajaran Project Based Learning terhadap Peningkatan Motivasi Belajar dan Kerja Sama Siswa dan Orang Tua di Era Pandemi.

EDUKATIF: JURNAL ILMU PENDIDIKAN, 3(5)

Surya, A. P., Relmasira, S. C., & Hardini, A. T. A. (2018). Penerapan Model Pembelajaran Project Based Learning (Pjbl) Untuk Meningkatkan Hasil Belajar Dan Kreatifitas Siswa Kelas III SD Negeri Sidorejo Lor 01 Salatiga. Jurnal Pesona Dasar,6(1). DOI: <https://doi.org/10.24815/pear.v6i1.10703>