

A Systemic Literature Review of Project Based Learning to Strengthen Collaboration in Elementary School

Anindya Puspa Dewani¹, Candra Utama¹

¹Universitas Negeri Malang

²Pendidikan Guru Sekolah Dasar, Universitas Negeri Malang, Malang, Indonesia

*Corresponding author, email: anindya.puspa.2301516@students.um.ac.id ; candra.utama.pasca@um.ac.id

Keywords

Project Base Learning
Collaboration
Elementary School

Abstract

21st century education demands that students have 4C skills, including collaboration. However, these skills are often low. This study aims to show the role of the Project Based Learning (PjBL) learning model in strengthening the collaboration skills of elementary school students. The method used is Systematic Literature Review (SLR) for journals relevant to PjBL and collaboration. This study reviewed 12 national journal articles published between 2020–2024. The result of the study showed that PjBL positively affected the improvement of students' collaboration skills through group work, discussions, and exchange of ideas. Although challenges such as passive students are encountered, the implementation of PjBL is gradually able to increase the active participation and responsibility of team members. The role of teachers in facilitating PjBL is also crucial in increasing student interest and learning outcomes. It is concluded that PjBL is effective in improving collaboration skills and has the potential to improve the quality of learning.

1. Introduction

In a broad sense, education lasts for a lifetime (long live education). Teaching in a broad sense is also a process of teaching activities, and carrying out learning can occur in any environment and at any time (Amirin:2013:4). The Father of Education, Ki Hajar Dewantara with his guidelines, namely, "Ing Ngarso Sung Tulodo" (in front of giving examples), "Ing Madyo Mangun Karso" (in the middle of giving examples), "Tut Wuri Handayani" (behind giving encouragement and (Febriyanti, 2021). The guideline can be interpreted by how the role of a teacher is the foundation and spearhead in implementing the pace of national education.

In line with this Mustapha (2020) stated that in the 21st century, education must be able to ensure that students have learning skills, the ability to innovate, and skills in using technology and information media, in addition to the ability to work and have life skills. All competencies needed by students must be in accordance with the demands of the era of globalization, which is better known as 21st century skills.

The development of the 21st century and the era of globalization with science and technology that is developing very quickly and increasingly sophisticated requires the improvement of the quality of education itself. Schools as educational institutions and students are also required to have competencies, including critical thinking, critical thinking and problem solving, communication, and collaboration or commonly called the 4Cs.

For this reason, teachers are the main factor in determining the quality of learning because good learning quality will produce good learning outcomes as well. In the current era of globalization and 21st century education, it certainly requires a capable and critical young generation, therefore according to Sulistian and Masrukan (2016), it is stated that a student- oriented learning model is needed so that the ability to think critically and solve problems is needed by students in daily life.

Problem-based learning or often known as the Project Based Learning (PjBL) learning model is student-centered learning through the provision of problems from the real world or daily life at the beginning of learning. According to Duch in Suharia (2013), the PjBL learning model encourages students to get to know how to learn and work together in group activities to find solutions to problems in the classroom.

According to (Ahwan et al., 2023), collaboration is a type of social interaction which is a collaborative process that has the goal of solving common problems, so that common goals based on understanding the responsibilities and roles of each member can be achieved by exchanging both thoughts and opinions

(Dushkova, 2020). Rahmawati et. Al. (2019, 431) stated that indicators that show collaboration ability are (1) actively contributing; (2) work productively; (3) communicate in the form of negotiations; (4) be responsible for the contributions made; and (5) appreciate the contributions of others.

In fact, although many studies explore PjBL, limited attention is given to its direct impact on collaboration skills in the elementary context in classroom learning activities, the ability to collaborate is one of the relatively low competencies that students can master. It is not uncommon for some students to be classified as less skilled in collaborating or discussing in group activities. This study aims to show the learning of Project Based Learning in the role of strengthening collaboration skills in elementary school students.

In PjBL, the role of teachers shifts from conveying information to facilitators who guide the student learning process. Research by Aguiar et al. (2021) emphasizes that teachers as facilitators not only provide academic but also emotional support, creating a learning environment that supports collaboration and social interaction. In addition, a study by Stepschools (2023) shows that teachers need to have the skills to design challenging and relevant projects, as well as the ability to facilitate student discussion and reflection.

2. Method

This research was conducted using the Systematic Literature Review (SLR) method. This method refers to specific research and development methodologies to collect and evaluate research related to a particular topic focus. Articles were selected through Google Scholar using keywords 'PjBL', 'collaboration', and 'elementary', published 2020–2024, resulting in 12 selected articles from an initial pool of 35. The benefit of this research is that it is able to identify, review, evaluate and interpret all available research with a focus on a specific phenomenon of interest. Data analysis in the assessment is journals related to the implementation of Project Based Learning (PjBL) and collaboration in learning.

3. Results and Discussion

The results of the literature synthesis show that the application of Project-Based Learning (PjBL) makes a positive contribution to improving the collaborative skills of elementary school students. Two studies analyzed specifically highlighted changes in students' behaviors in cooperating, discussing, and completing group assignments.

A study by Rahayu et al. (2022) through an experimental approach in class V shows that PjBL is able to encourage students to be more active in discussing and dare to express opinions in turn. In addition, students become more involved in the process of working together to complete group projects. However, the challenge that arises is that there are still students who are passive and lack confidence in the context of group work. This suggests that although PjBL provides a space for collaboration, the readiness of individual students to participate remains a determining factor in the success of this strategy.

Meanwhile, Prasetya & Fikri (2023) through a case study in grade IV found that the implementation of PjBL fosters a sense of responsibility for students in dividing tasks and completing group work collectively. Students become more appreciative of the role of each member and show enthusiasm in completing projects. However, the limitation of learning time is the main obstacle, especially because the PjBL stage takes a long time for planning, implementation, and presentation of results. From the two studies, it can be concluded that PjBL is effective in fostering collaborative skills of elementary school students, but its implementation needs to be accompanied by mitigation strategies against two main challenges: (1) inequality in student participation, and (2) limited implementation time. The role of teachers is critical in designing inclusive project scenarios, dividing roles equitably, and facilitating passively inclined students to stay engaged.

By paying attention to these results, collaborative skills strengthening through PjBL can be optimized if teachers are provided with training in building effective group dynamics and realistic project scheduling. This is also in line with the 21st century learning goals, where collaboration is an important part of developing student competencies. Learning model can help students develop collaboration, critical thinking, and creativity skills to create quality products. It is hoped that if teaching and learning is carried out well, students' motivation and learning outcomes will increase (Elisabet, 2019:287). The methods used by educators have an effect on the student learning process, so that the use of interesting media is able to stimulate students to imitate and apply it in their learning methods (Ferdiansyah, et al., 2019:91).

A collaboration can be trained through student-oriented learning. With the Project Based Learning model, students automatically involve collaborative activities in the task completion process, so that students' collaboration skills also increase. Collaboration skills are fostered through discussion activities by listening to and respecting the opinions of others; flexibly work together to achieve common goals; provide ideas and ideas so that they can complete tasks and goals together; use time effectively to participate with energy, thoughts and expertise in achieving common goals; Be fully responsible for individual tasks that are part of a shared task.

In its implementation, the Project Based Learning model has its own challenges. The results of Ressa's research (2023) still found that some students lack collaboration skills because students tend not to show their active role in the group. In one group, there are active students who dominate the group so that passive students depend on active students. "The introduction of the PjBL model in learning activities is gradually able to improve collaboration skills that involve the cooperation of each team member from the project preparation stage to the presentation stage, so that each team member is responsible and actively working on the project." (Saenab, et al., 2019). This is in accordance with the results of research conducted by Robbins & Hoggan (2019) which states that learning that is arranged collaboratively will involve students actively in the learning process.

The results of Retno's (2023) research suggest that the role of teachers in maximizing the learning and teaching process also has an equally important role, a school that has adequate facilities to support teaching and learning activities sometimes makes students feel bored and less active because teachers only use teaching materials in schools. The teaching materials used certainly cannot develop students' collaboration skills to the maximum, so this makes it more difficult for passive students in learning to develop collaboration skills. Of course, it is related to the opinion expressed by Meilinawati that the application of the Project Based Learning learning model can increase collaboration between students while improving the quality of the learning process (Sari, 2023).

Interest is an activity carried out by students on a regular basis in carrying out the learning process (Robbins, 1996). The feeling of students who are happy will automatically generate interest, which is accompanied by a positive attitude, on the other hand, the feeling of displeasure hinders learning because it does not give birth to a positive attitude and does not support interest in learning (Ainley & Hidi, 2014; Schiefele, 1991; Wade 2001). Elok stated that, "Students admitted that they were happy with teaching and learning activities that used a project-based learning model because they were able to discuss with group friends and admitted that they understood the material better." (Elok, 2023). The results of empirical studies also show that there is a difference in the value of learning outcomes from students who receive treatment with collaboration skills tend to have higher scores than students who do not receive treatment.

Thus, the use of the Project Based Learning learning model has a positive influence on improving students' collaboration skills. This is due to the various advantages of the PjBL model which involves students in the cooperation of group members so as to stimulate and increase student collaboration. In addition, the project-based learning process improves students' critical thinking, communication, collaboration and creativity skills (Riskayanti, 2021).

3.1. Conclusion

Based on the results of the research that has been presented, it can be concluded that the Project Based Learning (PjBL) learning model has a positive influence on improving students' collaboration skills. This is supported by the PjBL mechanism which inherently involves students in collaborative activities to complete project tasks. Through discussion, mutual respect, flexible cooperation, and sharing ideas, students' collaboration skills can be trained and improved. However, the implementation of PjBL also has challenges, such as the presence of students who are less active in the group. However, the introduction and implementation of PjBL gradually proved to be able to encourage the active participation of all team members, from preparation to project presentation, thus fostering a better sense of responsibility and collaboration. In addition, the role of teachers in facilitating and maximizing the learning process is also crucial. The use of an interesting and relevant PjBL model can increase students' interest and motivation to learn, which in turn also contributes to improving learning outcomes. Thus, PjBL not only improves collaboration skills but also has the potential to improve the quality of the overall learning process. Training modules for teachers are recommended to focus on structuring effective group tasks and assessing collaborative competencies.

References

- Ariandi, Yuli, Smk Negeri, Jawa Warungasem, and Indonesia Tengah. 2020. *ANALISIS KEMAMPUAN PEMECAHAN MASALAH BERDASARKAN AKTIVITAS BELAJAR PADA MODEL PEMBELAJARAN PBL*.
- Humaeroh, Siti, Aan Komariah, and Shanti Septiani. 2023. "PENERAPAN MODEL PEMBELAJARAN PROJECT BASED LEARNING UNTUK MENINGKATKAN KETERAMPILAN KOLABORASI PESERTA DIDIK KELAS III SDN 013 PASIRKALIKI BANDUNG." *Jurnal Ilmiah PGSD FKIP Universitas Mandir* 5.
- Maulidah, Evi. 2024. "Efektifitas Model Project Based Learning (PjBL) Untuk Meningkatkan Keterampilan Komunikasi Dan Kolaborasi Siswa." *Journal of Islamic Education* 10.
- Mona, Nailil, and Rivanna Citraning Rachmawati. 2023. "Penerapan Model Project Based Learning Untuk Meningkatkan Keterampilan Kolaborasi Dan Keterampilan Kreativitas Peserta Didik." *Jurnal Pendidikan Guru Profesional* 1(2):150–67. doi: 10.26877/jpgp.v1i2.230.
- Muinah, Muinah, Fhela Vhantoria Ningrum, and Yesa Dwi Rasmawati. 2025. "Dampak Project-Based Learning Terhadap Keterampilan Kolaborasi Siswa." *Proximal: Jurnal Penelitian Matematika Dan Pendidikan Matematika* 8(1):366–71. doi: 10.30605/proximal.v8i1.5227.
- Nasution, Qonita Nurhamidah, Enjang Yusup Ali, and Ali Ismail. 2024. "Pengaruh Project Based Learning Terhadap Kemampuan Kognitif Dan Keterampilan Kolaborasi Kelas V Pada Materi Ekosistem." *Al-Madrasah Jurnal Pendidikan Madrasah Ibtidaiyah* 8(4):1930. doi: 10.35931/am.v8i4.4069.
- Nur Khanifah, Lindra. 2019. "Jurnal Kajian Pendidikan Dan Hasil Penelitian." *Jurnal Review Pendidikan Dasar* 5(1).
- Nurmaliati, Unan Yusmaniar. 2024. "KURIKULUM DAN PENDIDIKAN BERBASIS PROYEK MENDORONG KREATIVITAS DAN KOLABORASI." *Jurnal Penelitian Pendidikan* 5:1–23.
- Pgmi, Dosen, Stkip Nurul, Huda Oku, and Sumatera Selatan. 2018. "KETERAMPILAN 4C ABAD 21 DALAM PEMBELAJARAN PENDIDIKAN DASAR Resti Septikasari Rendy Nugraha Frasandy." *Jurnal Tarbiyah Al-Awlad* 8.
- Pramiswari, Dara, Beti Istanti Suwandayani, Tyas Deviana, Pgsd Fkip, and Universitas Muhammadiyah Malang. 2023. "ANALISIS KEBUTUHAN MODUL AJAR DALAM IMPLEMENTASI KURIKULUM MERDEKA KELAS 2 SD MUHAMMADIYAH 03 ASSALAAM." *Jurnal Ilmiah Pendidikan Dasar* 8.
- Pratama, S., M. Agustin, and 2022. "Effectivity of Model Project Based Learning (PjBL) Type Make Crossword Puzzle Project to Improve 5th Grade Elementary Student's Collaboration Skills." *ICEE-4 The Direction of Elementary Education in the Future Challenge* 753–59.
- Purnomo, Widiharto, Xie Guilin, and Lusiana Rahmadani Putri. 2024. "The Effectiveness of Project-Based Learning in Improving Collaborative Skills of Elementary School Students." 1(6):294–304.
- Retno Triwoelandari, Putri Rahmawati, Syarifah Gustiawati. 2023. "PENGEMBANGAN MODUL PEMBELAJARAN IPA BERBASIS PROJECT BASED LEARNING UNTUK MENINGKATKAN KEMAMPUAN KOLABORASI SISWA KELAS 5 SD/MI." *Journal of Elementary Education* 7.