Project-Based Cooperative Learning in Inclusive Elementary School Classrooms with Environmental Space Learning Resources

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Abstract

This study aims to discuss the implementation of project-based cooperative learning in inclusive elementary school classrooms by utilizing environmental space as a learning resource. The study employs a descriptive qualitative method with data collection techniques including observation, interviews, and documentation to provide an in-depth description of how this learning strategy is applied, the interaction between regular students and students with special needs, as well as how the school environment is utilized to support learning. The findings show that the implementation of project-based cooperative learning can enhance collaboration between regular students and students with special needs, as well as the use of the environmental space as a learning resource, enriching the students' experiences and engagement. The implications of this study highlight the importance of integrating cooperative learning with the utilization of the environment as a learning resource in the context of inclusive classrooms, which can improve the quality of learning and students' social skills. Project-based cooperative learning using environmental space has been proven effective in supporting inclusive education, where appropriate data collection techniques provide a deeper understanding of the learning process and outcomes.

Keywords : Cooperative, Project, Inclusion, Environmental Space.

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1. Introduction

Project-based cooperative learning is an increasingly popular approach in the educational world. This approach focuses not only on academic mastery but also on the development of students' social and emotional skills. Project-based cooperative learning is highly relevant in inclusive classrooms, where students from diverse backgrounds and needs, including those with special needs, learn together (Johnson & Johnson, 2019). In this context, this learning method provides an effective way to create an inclusive learning environment where every student can interact and learn in a supportive atmosphere. This is in line with the principle of active learning, which encourages students to engage directly with their surrounding environment as part of a more holistic learning experience (Sefina et al., 2024).

Inclusive education essentially seeks to create space for all students to learn together, regardless of their backgrounds, abilities, or physical and mental conditions. It focuses on providing equal opportunities for every student to grow, interact, and learn within the same environment (Loreman, 2017). Therefore, implementing inclusive education in elementary schools is crucial for shaping students' character and social skills, as well as ensuring that every individual receives the support they need to reach their full potential. However, one of the greatest challenges in inclusive education is designing effective learning for students with diverse needs (Gusman & Fitriani, 2023).

At Muhammadiyah Elementary School 16 Surabaya, particularly in the 2 Tennis class, concerns about inclusion remain an important issue that needs attention. The inclusive classroom at this school presents challenges in creating an environment that fully supports the development of all students, including those with special needs. Project-based cooperative learning offers a highly potential solution to address these challenges. In this approach, students are encouraged to work in small groups to complete specific tasks or projects (Slavin, 2014). Collaboration in these groups not only enhances students' understanding of the subject matter but also helps them develop crucial social skills such as

communication, collaboration, and problem-solving together. Each student plays a significant role in the project, allowing them to learn from one another and provide mutual support. In this way, learning becomes more meaningful, as students feel directly involved in the learning process and contribute to the achievement of group goals (Muhothar, 2022).

The implementation of project-based cooperative learning in inclusive classrooms also involves utilizing the resources available in the surrounding environment of the school. This environment can include open spaces such as school gardens, fields, or schoolyards, which provide various learning resources that can stimulate students' curiosity and creativity. Furthermore, the broader school community can also be leveraged as a rich learning resource (Lusiantri, Warni & Mashud). Learning activities that involve the surrounding environment not only provide a more contextual and relevant learning experience but also help students understand how the knowledge they learn in class can be applied in everyday life.

The use of the surrounding environment as a learning resource in project-based cooperative learning also offers additional benefits for students with special needs. Students with various types of needs can interact more directly with the physical environment, helping them develop motor, social, and cognitive skills more optimally (Nahdiyah & Laili, 2024). For instance, students with hearing or vision impairments can be encouraged to engage more actively in activities involving other senses, such as smelling flowers in the garden or feeling the texture of plants in the schoolyard. This creates more equitable opportunities for all students to learn in ways that suit their needs (McLeskey & Waldron, 2011).

Implementing project-based cooperative learning in inclusive classrooms also faces several challenges that need to be addressed. One major challenge is ensuring that every student, including those with special needs, can participate actively in the project. Teachers need to design inclusive tasks and projects that can be adapted to the abilities and needs of each student (Florian & Linklater, 2010). Teachers must also provide appropriate support for students with special

needs, such as adapting materials, using assistive tools, or offering individual guidance.

Additionally, collaboration among students with varying abilities can present its own set of challenges. Some students may require more time to understand the material or work together with their peers. Therefore, it is crucial for teachers to create a supportive and inclusive environment where every student feels valued and encouraged to contribute to the project (Iqbal, Fadila, Amalia, & Nasution). Teachers also need to facilitate effective communication among students and provide constructive feedback to ensure that each student can develop according to their abilities and potential.

Research on the implementation of project-based cooperative learning in inclusive classrooms is vital for identifying best practices and evaluating its impact on student learning outcomes (Gusman & Fitriani, 2023). This research is expected to uncover more effective, inclusive, and adaptive learning models for students with diverse needs. It can also provide valuable insights for teachers, school principals, and policymakers in designing learning policies and practices that are more responsive to the needs of all students.

Project-based cooperative learning offers a highly relevant and effective approach to creating an inclusive learning environment in inclusive classrooms. By integrating the use of the surrounding environment as a learning resource, this approach not only provides a more meaningful and contextual learning experience but also encourages the development of students' social and emotional skills (Sefina et al., 2024). In the context of inclusive education, the implementation of project-based cooperative learning can be one way to ensure that all students, without exception, have the opportunity to learn and develop optimally. Therefore, further research and development of this approach are essential for improving the quality of inclusive education in elementary schools.

2. Method

This study uses a descriptive qualitative approach to depict and analyze the implementation of project-based cooperative learning in inclusive elementary school classrooms (Moleong, 2005). This approach was chosen because it allows the researcher to gain a deep understanding of the interactions between students, teachers, and the learning environment, as well as how the application of Cooperative Learning (CL) methods in this context affects the learning process (Astuti, 2013). Through this descriptive qualitative method, the research aims to reveal the subjective perspectives and experiences of students and teachers in the learning process, which utilizes learning resources from the school environment.

The focus of this study is on the implementation of project-based cooperative learning in an inclusive elementary school classroom, with learning resources drawn from the surrounding environment (Utami, Kadir & Herlanti, 2021). This study aims to describe the dynamics of learning, student interactions, and the strategies employed by teachers in applying Cooperative Learning (CL) methods to enhance student involvement and understanding, including students with special needs in the inclusive classroom (Dihuma, Akolo & Pateda, 2024).

Data were collected using several complementary techniques to gain a comprehensive understanding of the implementation of project-based cooperative learning in inclusive classrooms. First, in-depth interviews were conducted with teachers and several students. These interviews aimed to explore their understanding and experiences related to the learning methods applied. The goal was to understand both student and teacher perceptions of Cooperative Learning (CL) methods in the context of inclusive classroom teaching. Open-ended questions allowed the researcher to gather deeper insights into how students and teachers experience and evaluate the ongoing learning process.

Next, participatory observation was carried out. In this technique, the researcher was directly involved in the learning process, allowing them to observe the classroom dynamics and student interactions. This observation provided the

researcher with an opportunity to see how the strategies used by the teacher were implemented during lessons. Through this observation, the researcher could delve into aspects that might not have been revealed in the interviews, such as student social interactions and the use of environmental learning resources that support the learning process.

Additionally, documentation played an essential role in data collection. The researcher gathered documents related to the implementation of learning, such as lesson plans (RPP), students' project assignments, and learning evaluation records. This documentation provides a more comprehensive picture of the project-based cooperative learning implementation and helps the researcher analyze and understand the context and results of the learning process.

By combining these three data collection techniques, this study seeks to provide a holistic and in-depth portrayal of the implementation of project-based cooperative learning in inclusive classrooms, as well as its impact on students and teachers.

The data collected from interviews, observations, and documentation will be analyzed using thematic analysis (Matthew & Michael, 1992). The steps of analysis are as follows: First, data is collected through interviews with teachers and students, which are then transcribed for easier analysis. Second, data reduction is conducted by coding the interview and observation data to identify relevant themes, such as learning strategies, student interactions, the use of learning resources, and the impact of learning on student understanding.

The syntax of the cooperative model refers to a series of steps or stages followed in the cooperative learning approach to facilitate effective interactions among students in a group. This process begins with the formation of small, heterogeneous groups where students from various backgrounds and abilities collaborate. Afterward, the teacher explains the learning objectives and provides instructions for the task that the group must complete, ensuring that every student understands their role. The group is then given a task or problem to work

on together, such as a project or discussion, with an emphasis on social and communication skills, such as collaboration.

In the next step, students work together to complete the task, share information, and provide mutual support. Learning resources, such as books, the internet, or the surrounding environment, can also be used to further explore the material. Once the task is completed, the teacher evaluates the group's and individual's performance through assessments or presentations, offering feedback on how they collaborated and achieved learning outcomes. Finally, students are encouraged to reflect on the learning process and the collaboration they engaged in, and the teacher provides constructive feedback for future improvements. The syntax of this cooperative model aims to enhance students' academic understanding, develop their social skills, and create a more meaningful and enjoyable learning experience for all students.

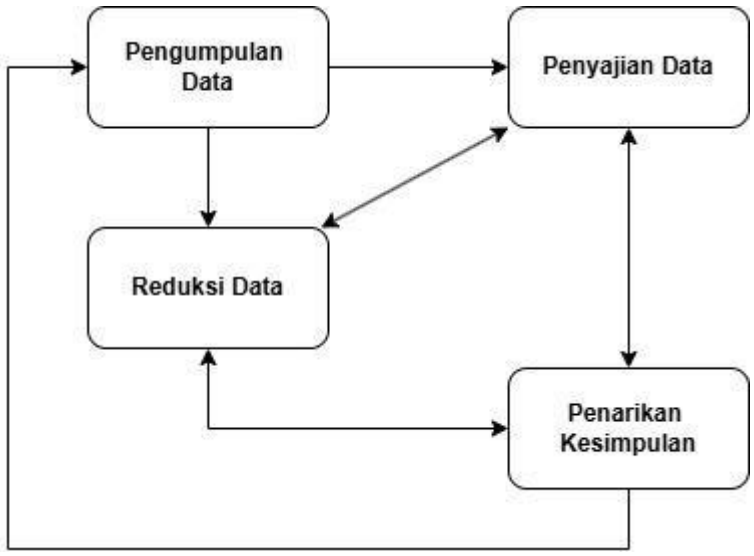


Figure 1. Qualitative Data Analysis Stage of Qualitative Research (Miles & Huberman, Qualitative data analysis: An expanded sourcebook., 1994)

Next, in the data presentation step, the emerging themes from the data will be categorized into broader categories to understand the patterns that occur in the implementation of project-based cooperative learning (Taroreh, 2021). Finally, the conclusion will be drawn by describing the findings obtained from the

in-depth data analysis to provide an overview of the learning process, as well as the impact of the Cooperative Learning (CL) method in enhancing student engagement in the inclusive classroom (Matthew & Michael, 2014). By following these steps, it is expected that the analysis will provide deep insights into the effectiveness of the applied teaching method.

3. Result and Discussion

Observation Results

This study aims to describe the implementation of project-based cooperative learning in an inclusive elementary school classroom, utilizing learning resources from the surrounding environment. Data obtained through interviews, observations, and documentation revealed several important findings related to the learning process, student interactions, and the use of the classroom environment as a learning resource.

The findings indicate that the implementation of project-based cooperative learning in the inclusive classroom proceeded smoothly. Clear task divisions between regular students and students with special needs allowed each student to observe the school environment, particularly the classroom, which was then analyzed and presented in the form of a project. This project provided an opportunity for students to collaborate, share ideas, and complete tasks together. The appropriate division of roles based on each student's abilities ensured that every group member was actively involved.

One of the main findings is that the interaction between regular students and students with special needs was positive. Regular students played an active role in guiding and supporting students with special needs, both academically and socially. In this regard, the teacher played an important role in facilitating these interactions by providing clear guidance and structuring activities so that every student had the opportunity to contribute.

The classroom environment was effectively utilized as a learning resource. Students conducted direct observations of environmental elements such as

lighting, ventilation, and seating arrangements. This more tangible and relevant learning experience, connected to their daily lives, made students feel more engaged and motivated when learning in this way, compared to learning solely through textbooks.

Each group demonstrated good collaboration despite facing some challenges. Some students with special needs required more time to complete certain tasks, but they remained actively engaged in discussions and tasks according to their abilities. The teacher noted an improvement in social skills, such as cooperation and problem-solving within groups.

This project-based cooperative learning successfully enhanced student engagement in the learning process. Based on the interview results, students reported feeling more motivated and interested in learning because they could interact with their peers and use their surrounding environment to gather information. Additionally, students found it easier to understand the material taught through hands-on experiences with the environment, which provided them with opportunities to connect theory to practice.

Interview Results with the School Principal

In an effort to create an inclusive learning environment, Ustad S implements project-based cooperative learning in the inclusive classroom. The background for applying this method is to ensure that all students, including those with special needs, can work together and learn in a supportive atmosphere.

To identify the characteristics of students in the inclusive classroom, Ustad S conducts observations of each student. He pays attention to both students with special needs and those without, to understand their learning styles and abilities. Discussions with class teachers, assistant teachers, and parents are also held to gain a deeper understanding of the individual characteristics of students. This step is essential in forming effective project groups.

In the learning process, the learning resources used come from the surrounding environment. Ustad S utilizes various elements of the school environment, such as the garden and play areas. Additionally, he takes students

to external locations, such as markets and museums, to provide them with real-life experiences as part of the project. The use of the environment makes learning more contextual and relevant.

The implementation of this learning model is not without challenges. The main challenge faced is the diversity of student characteristics, particularly for those with special needs. Sometimes, their learning styles differ, requiring a flexible approach from the teacher to ensure that all students can engage optimally. Moreover, the limitations of resources and teachers' readiness to implement cooperative learning also pose challenges.

After the project implementation, evaluation is carried out by observing the work process as well as the final project outcomes. Formative assessments are also conducted through observations during the activities and student reflections on what they have learned. The assessment is holistic, considering the contributions of each group member and their ability to collaborate.

The benefits of this project-based learning are strongly felt by students. They feel more motivated and engaged in the learning process. Additionally, the opportunity to learn independently and develop social skills provides added value. For students with special needs, they feel more valued because they can contribute according to their abilities.

Ustad S also involves parents in supporting cooperative learning at school. He frequently holds meetings with parents to discuss their children’s progress and provides information about the ongoing learning activities. Parents are encouraged to participate in the project by offering input or providing learning materials from home. This collaboration ensures that the learning process extends beyond the classroom to the home.

In addressing differences in student abilities within the group, Ustad S applies a strategy of forming heterogeneous groups so that each member can support one another. Tasks are assigned according to each student’s ability level, encouraging them to collaborate and teach one another. This approach allows

students with higher abilities to share knowledge while those who need support receive help.

As a follow-up step after the implementation of this project-based learning, Ustad S plans to conduct reflections and evaluations, as well as discussions with students about their experiences during the project. Another follow-up plan is to create a similar project with a different topic to further train students' skills and collaboration. The results of this project will also be used as learning materials for future lesson planning.

Interview Results with the Teacher

In an interview regarding the implementation of the Cooperative Learning method in project-based learning in the inclusive classroom, the informant explained that they divide students into groups with varying abilities. Each student is assigned a specific role based on their strengths, ensuring that the cooperative learning process emphasizes collaboration and mutual assistance among students. All group members work together to complete the assigned project.

The informant also revealed the greatest challenge faced when implementing project-based cooperative learning, particularly for students with special needs. The main challenge is ensuring that students with special needs can participate in the learning process in a manner suitable for them. Some students require simpler instructions or specific assistive tools, such as visual aids or assistive technology. Additionally, building effective communication among students with different abilities presents its own challenges.

In efforts to utilize learning resources from the surrounding environment, the informant encourages students to explore outside the classroom, such as in the school garden, laboratory, or art room. Students are invited to observe and analyze the elements around them, which are then used as material for the project.

The impact of project-based learning on student engagement and understanding is very positive. The informant stated that project-based learning

increases student involvement because they are directly engaged in the learning process and can apply knowledge in real-world situations. This hands-on approach helps students better understand the concepts being taught because they can see their practical applications.

To ensure that all students, including those with special needs, can actively participate in group work, the informant explained that they assign roles based on each student's ability. For students with special needs, additional instructions or assistive tools are used to support them. An inclusive atmosphere is also fostered within the group by encouraging students to respect and collaborate with each other. The informant also provides additional time if needed and offers students the opportunity to communicate in ways that are comfortable for them.

Interview Results with Students

In an interview about their experience working in groups during the project, student M expressed that they were happy because they could collaborate with their peers. Although there were occasional differences of opinion, they felt they could learn a lot from their classmates. They also felt that completing tasks was easier because each group member had different ideas and skills, allowing them to help each other.

The student further explained that from project-based learning, they learned how to cooperate in a group, listen to others' opinions, and solve problems together. Additionally, they felt more creative in completing tasks and more responsible for the parts they were working on in the project.

When asked if they found it easier to learn by working in groups rather than learning alone, the student responded that they found group work to be easier. This was because they could exchange ideas and learn from friends who had different perspectives. If they faced difficulties, their peers could help explain or provide solutions. The student acknowledged that learning alone sometimes made them confused, but when they were with friends, they felt more motivated.

Regarding the use of the surrounding environment as a learning resource for the project, the student explained that they used the school environment,

particularly the classroom, to observe things that could support their project. For example, in a math project, they observed various shapes. They also sought information from books available in the reading corner.

Finally, the student shared their thoughts on learning that involves peers with special needs in group work. They felt happy and proud to work with classmates who had special needs because they could also contribute meaningfully to the group. The student emphasized the importance of helping each other and making an effort to understand one another, which brought them closer and allowed them to better understand how to work together despite differences.

Observation Results

In the observation of project-based cooperative learning, several aspects were noted. First, in terms of interaction within the group, students showed good interaction. They actively discussed and shared ideas, with each group member taking on their respective roles in completing tasks. However, at times, some students were more dominant in discussions, which meant that opportunities had to be provided for other members to speak.

The participation of students with special needs was a key observation. These students participated actively in group discussions. They were given tasks suited to their abilities, such as assisting with note-taking or gathering materials. Their peers in the group were very supportive, making students with special needs feel valued and engaged in the activities.

Regarding the use of environmental resources, students utilized the school garden and surrounding areas to observe plants, animals, and other natural elements relevant to their science project. Some groups also sought information from bulletin boards or materials available in the classroom and library, showing creativity in sourcing learning resources.

There were challenges in project-based cooperative learning. The main challenge observed was difficulty in distributing tasks evenly, as some students tended to take on more work than others. Additionally, there were

communication issues between students with different learning styles, which could hinder collaboration.

The involvement of the teacher in the learning process was crucial. The teacher played an active role as a facilitator, providing guidance and assisting groups in solving problems. They also ensured that all students, including those with special needs, received adequate attention. The teacher frequently monitored the groups to ensure that all students were engaged in the learning activities, fostering an inclusive and supportive environment.

4. Conclusion

Based on the findings of this study, it can be concluded that project-based cooperative learning in the inclusive classroom at Elementary School, utilizing environmental resources as learning tools, has proven effective in enhancing student collaboration, enriching learning experiences, and supporting the development of both social and academic skills. Through positive interactions between regular students and students with special needs, this method has successfully fostered a respectful and supportive environment. Although challenges such as differences in student abilities need to be addressed, this approach provides significant opportunities to create an inclusive and effective learning environment. With proper management and the supportive role of the teacher, project-based cooperative learning can be a highly beneficial method in inclusive education. Therefore, it is crucial for educators to continually develop their skills and strategies in applying this method so that every student can fully benefit. Consistent and innovative implementation of project-based cooperative learning is expected to improve the quality of education for all students, without exception.

Reference

Astuti, J. (2013). *Pelaksanaan Metode Cooperative Learning Pada Pembelajaran Bahasa Dan Sastra Indonesia Dalam Menyusun Alur Cerita.* Pontianak: Fakultas Keguruan Dan Ilmu Pendidikan Universitas Tanjungpura Pontianak.

Dihuma, N., Akolo, I. R., & Pateda, L. (2024). Pengaruh Model Pembelajaran Cooperative Learning Terhadap Hasil Belajar Siswa Di SDN 9 Limboto. *Dinamika Pembelajaran : Jurnal Pendidikan dan bahasa*.

Florian, L., & Linklater, H. (2010). Preparing Teachers for Inclusive Education: A Systematic Review of the Evidence. *European Journal of Teacher Education*.

Gusman, A. Y., & Fitriani, W. (2023). Optimasi Model Pembelajaran Cooperative Learning. *Tajdid*.

Johnson, D. W., & Johnson, R. T. (2019). Cooperative Learning: Improving University Instruction by Basing Practice on Validated Theory. *Journal on Excellence in College Teaching*.

K, A. H., Sahabuddin, E. S., & Sari, W. K. (2023). Penerapan Model Cooperative Learning Tipe Expert Group Jigsaw dapat Meningkatkan Hasil Belajar Bahasa Indonesia pada Peserta Didik Kelas VI SD Inpres Mariso III Makassar. *Pinisi Journal Of Science And Technology*.

Loreman, T. (2017). *Inclusive Education: A Practical Guide to Supporting Diversity in the Classroom.* London: Routledge.

Lusiantri, Warni, H., & Mashud. (2023). Integrasi Metode Pembelajaran Pjbl Dengan Inklusi Untuk Hasil Belajar Lompat Jauh Siswa Kelas X. *Journal of SPORT (Sport, Physical Education, Organization, Recreation, and Training)*.

Marantika, S., Fatkhurohmah, Pratidina, I., & Minsih, C. (2024). Pendekatan Inklusif Pada Anak Berkebutuhan Khusus Di Sekolah Dasar Untuk Menghadapi Tantangan Abad 21. *Berkala Ilmiah Pendidikan*.

McLeskey, J., & Waldron, N. L. (2011). *Inclusive Schools in Action: Making Differences Ordinary.* New York: Pearson.

Miles, M., & Huberman, M. (1992). *Qualitative Data Analysis: A Sourcebook of New Methods.* Beverly Hills: Sage Publicatin.

Miles, M., & Huberman, M. (1994). *Qualitative data analysis: An expand sourcebook.* Thousand Oaks.

Miles, M., & Huberman, M. (2014). *Qualitative Data Analysis: A Methods Sourcebook. Edition 3.* Beverly Hills: Sage Publicatin.

Moleong, L. J. (2005). *Metodologi Penelitian Kualitatif.* Bandung: Remaja Rosdakarya.

Muthohar, A. (2022). *Implementasi Model Pembelajaran Berbasis Proyek Pada Anak Berkebutuhan Khusus Dalam Kelas Inklusi MI Walisongo Kranji 01.* Pekalongan: Institut Agama Islam Negeri Pekalongan.

Nahdiyah, K., & Laili, M. (2024). Pembelajaran Berbasis Proyek Menciptakan Lingkungan Belajar yang Kolaboratif di Sekolah Dasar. *Pengenalan Lapangan Persekolahan Pendidikan Guru Sekolah dasar*.

Nasir. (2024). Membangun Madrasah Inklusif: Upaya Menuju Sekolah Ramah Diversitas Melalui Implementasi Pendidikan Inklusif Di Madrasah Ibtidaiyah. *Jurnal Pendidikan Islam*.

Prasetyawati, V. (2021). Metode Cooperative Learning Dalam Meningkatkan Kualitas Hasil Belajar Di Masa Pandemi Covid-19. *Epistema*.

Slavin, R. E. (2014). Cooperative Learning in Elementary Schools. *Educational Psychologist*.

Taroreh, B. (2021). Analisis Tematik Data Kualitatif Pada Pengembangan Perangkat Pembelajaran Paradigma Pedagogi Reflektif (PPR). *SNFKIP: Pendidikan Bagi Masyarakat di Daerah 3T*.

Utami, P., Kadir, & Herlanti, Y. (2021). Meta-analisis pembelajaran kooperatif di Indonesia. *Jurnal Inovasi Pendidikan IPA*.