



INNOVATIVE STRATEGIES IN LEARNING: THE JIGSAW MODEL AS A SOLUTION FOR ENHANCING STUDENT LEARNING OUTCOMES

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Abstract

This classroom action research aimed to improve students' learning outcomes in Social Studies (IPS) through the implementation of the Jigsaw cooperative learning model. The subjects were 15 fifth-grade students at SDN 3 Sendang Agung. The research was conducted in two cycles, each consisting of planning, action, observation, and reflection phases. Data were collected through observation and formative tests, then analyzed using both quantitative and qualitative descriptive methods. The findings revealed a significant improvement in students' learning outcomes, with the average score increasing from 60 (pre-cycle) to 76 (cycle II), and the percentage of students achieving the minimum mastery criteria rising from 47% to 93%. Furthermore, students' learning activities such as asking questions, expressing opinions, and completing tasks improved notably. The Jigsaw model also fostered a more interactive, collaborative, and engaging classroom environment, while supporting students' social character development. Therefore, the Jigsaw cooperative model is recommended as an effective alternative strategy for enhancing learning outcomes and student engagement in elementary school Social Studies learning.

Keywords: Jigsaw Model, Learning Outcomes, Cooperative Learning, Social Studies, Elementary School

I. INTRODUCTION

Primary education is a crucial stage in shaping students' personalities, intellectual abilities, and social skills. At this level, students are not only introduced to basic knowledge but are also guided to develop character and attitudes that will serve as the foundation for their future educational success. In line with the goals of national education as stated in the Law of the Republic of Indonesia No. 20 of 2003, primary education is aimed at optimizing the development of students' potential across cognitive, affective, and psychomotor domains. However, in practice, the quality of learning at the primary school level still faces several challenges. One of the main issues is the low academic achievement of students, particularly in Social Studies (IPS). As an integrative field that includes history, geography, economics, and sociology, Social Studies requires a contextual and active learning approach. Unfortunately, many teachers continue to rely on conventional methods such as lecturing,

which leads to limited student engagement in the learning process. This situation negatively affects students' comprehension and motivation toward the subject matter.

According to Zubaidah (2021), the success of the learning process is strongly influenced by the teaching strategies used by teachers. One-way instruction tends to make students passive, bored, and unmotivated. In the context of 21st-century education, such approaches are no longer relevant. There is a need for learning models that foster active student engagement, encourage collaboration, and develop critical thinking and problem-solving skills. One approach that has proven effective in addressing these issues is the jigsaw cooperative learning model. This model places students at the center of the learning process by dividing the material into smaller segments, each mastered by individual group members and then taught to their peers. Each student acts as an “expert” on a specific part of the material, promoting responsibility, teamwork, and positive interdependence among group members.

Empirical studies have shown the effectiveness of the jigsaw model in improving various aspects of student learning. Astuti and Pratiwi (2022) reported that the application of the jigsaw method in Social Studies classes significantly enhanced students' academic performance and classroom participation. Students became more involved in discussions and demonstrated improved understanding of the material. Hasanah and Hidayatullah (2023) further emphasized that the jigsaw model fosters a democratic learning environment where students learn to cooperate, respect others' opinions, and engage actively in group tasks. In a broader scope, Sari and Utami (2020) found that the jigsaw model increased students' critical thinking skills, motivation, and communication abilities in heterogeneous classrooms. Likewise, research by Nugroho et al. (2021) concluded that cooperative learning strategies such as jigsaw have a positive influence on students' social-emotional development, particularly in early grades.

Despite the growing body of research supporting the benefits of the jigsaw learning model, most prior studies have focused on its implementation in urban or well-resourced schools. These contexts often enjoy better access to teacher training, facilities, and student readiness. Little is known about how this model functions in schools with lower performance levels, limited infrastructure, and less exposure to innovative pedagogical methods—especially in rural or remote areas. Moreover, while many studies have emphasized cognitive gains or affective outcomes separately, few have examined how the jigsaw model simultaneously influences both academic achievement and character development in a single integrated setting. This gap underlines the need for context-specific investigations that examine the dual impact of the jigsaw model in underperforming primary schools, where learning quality and student engagement remain persistent challenges.

In alignment with the Merdeka Belajar curriculum, which emphasizes differentiated learning and the strengthening of the Pancasila Student Profile, the jigsaw model serves as an alternative instructional strategy that supports holistic student competence. According to Kemendikbudristek (2022), learning should be student-centered and encourage exploratory and collaborative processes to meet the demands of modern times. At SDN 3 Sendang Agung, the issue of low student performance in Social Studies is reflected in daily assessment data, where more than 50% of students failed to meet the Minimum Mastery Criteria (KKM). Observations also revealed that many students were passive, hesitant to ask questions, and lacked confidence during class discussions. This condition highlights the urgent need for an instructional strategy capable of revitalizing student engagement and improving academic achievement.

The jigsaw model is particularly effective in accommodating diverse student abilities. Students with stronger understanding can act as peer mentors, while those who struggle have the opportunity to learn from groupmates on an equal footing. This approach aligns with Vygotsky's Zone of Proximal Development (ZPD) theory, which underscores the importance of social interaction in learning. Munawaroh (2021) supports this view by emphasizing that cooperative learning can bridge ability gaps through meaningful peer support and interaction. Beyond academic outcomes, the jigsaw model also positively contributes to students' character formation. Through this learning model, students practice listening, respecting differing viewpoints, and working as a team. These values are essential for fostering early attitudes of tolerance, empathy, and social responsibility. Such learning experiences are likely to have a more lasting impact than merely pursuing academic grades.

Given the importance of improving the quality of Social Studies instruction in primary schools, this study aims to address the research gap by implementing and evaluating the jigsaw cooperative learning model in a rural school context. Specifically, it investigates the model's potential in improving both academic performance and social engagement among fifth-grade students at SDN 3 Sendang Agung. Conducted as a Classroom Action Research (CAR) in two cycles, the study aspires to offer an effective and replicable instructional approach for primary educators facing similar challenges. It is expected that the results of this study will enrich the discourse on cooperative learning and serve as a practical reference for schools aiming to cultivate both competence and character through collaborative pedagogy.

II. LITERATURE REVIEW

A. Theoretical Foundation of Cooperative Learning

Cooperative learning is an instructional approach that emphasizes collaboration among students to achieve shared academic goals while developing essential interpersonal skills. According to Johnson and Johnson (2021), cooperative learning requires five elements to be effective: positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small-group skills, and group processing. These elements ensure that each student contributes to group success while benefiting from peer learning. The jigsaw model, a form of cooperative learning, allows students to become "experts" on specific portions of the material and then teach it to their group members. Slavin (2022) states that this method "enhances responsibility and engagement while promoting deep understanding through peer instruction" (p. 89). It is especially effective in heterogeneous classrooms, where students with varying academic abilities can support each other and enhance mutual learning.

B. Relevance to Primary Education and 21st-Century Skills

In the context of 21st-century education, students must develop not only cognitive abilities but also soft skills such as collaboration, creativity, and communication. Trilling and Fadel (2021) emphasize that "the modern learner must be equipped with critical thinking and collaborative skills to thrive in complex global environments" (p. 45). Cooperative learning naturally integrates these competencies by fostering teamwork and problem-solving in classroom activities. The Indonesian curriculum "Merdeka Belajar" emphasizes a student-centered learning paradigm that values exploration, collaboration, and differentiation (Kemendikbudristek, 2022). The jigsaw model aligns well with these principles by promoting inclusive participation, active engagement, and character development within the learning process.

C. Empirical Studies Supporting the Jigsaw Model

Recent studies have demonstrated the effectiveness of the jigsaw model in primary education. Astuti and Pratiwi (2022) found that the implementation of the jigsaw model in Social Studies classes led to significant improvements in students' academic performance and motivation. Their research also reported higher levels of student participation and enthusiasm during class. Hasanah and Hidayatullah (2023) showed that cooperative learning strategies, including jigsaw, fostered democratic values in the classroom. Students became more open to listening to different perspectives and more confident in expressing ideas during group discussions. Additionally, Sari and Utami (2021) examined how jigsaw learning contributed to the development of students' critical thinking. Their findings indicated that "structured group learning not only improved comprehension but also encouraged analytical reasoning" (p. 62), which is crucial for primary students transitioning to higher cognitive tasks. Nugroho et al. (2021) studied the impact of cooperative learning in rural schools with limited resources. Their research concluded that peer-assisted learning environments, such as those facilitated by the jigsaw model, increased both academic outcomes and social-emotional competencies among students.

D. Research Gap and Justification

While previous research affirms the benefits of the jigsaw method, there remains a lack of investigation in rural or low-performing school contexts, especially regarding its dual impact on academic and character development in Social Studies learning. Most prior studies focus on cognitive or affective outcomes separately, without examining how the jigsaw model simultaneously addresses both dimensions. Therefore, this study aims to fill that gap by exploring the effectiveness of the jigsaw model in enhancing both learning achievement and engagement in a rural primary school setting.

III. RESEARCH METHOD

This study employed a Classroom Action Research (CAR) design with a mixed-methods approach, combining both quantitative and qualitative techniques. The research aimed to improve student learning outcomes through the implementation of the jigsaw cooperative learning model. The CAR method was chosen because it enables teachers, acting as practitioners and researchers, to systematically reflect on and improve their instructional practices through iterative and cyclical processes. The research design adopted the model developed by Kemmis and McTaggart (2020), consisting of four key stages in each cycle: planning, acting, observing, and reflecting. This cyclical model ensures continuous improvement based on reflective practice. The study was conducted at SDN 3 Sendang Agung in the fifth-grade classroom, which consisted of 15 students, including 4 male and 11 female students. The class was selected purposively, based on preliminary assessments that indicated low learning outcomes in Social Studies. This selection aimed to ensure that the intervention addressed real and observable learning problems.

The data used in this study were derived from two main sources. Primary data included students' formative test scores and observation results gathered directly from classroom activities. Secondary data included teacher records, lesson plans (RPP), and school documents that provided context to support the interpretation of classroom conditions and instructional planning. These multiple sources of data allowed for a more comprehensive understanding of the learning process and its outcomes. Data collection techniques consisted of observation and formative testing. Observation was used to assess student engagement throughout the learning process, using structured observation sheets that included indicators such as enthusiasm, activeness in asking and answering questions, participation in

discussions, and collaboration in group activities. Observations were conducted during the implementation of each learning cycle. Formative tests were administered at the end of each cycle to evaluate students' cognitive learning outcomes, particularly their understanding of Social Studies content.

The data analysis technique combined quantitative and qualitative descriptive approaches. Quantitative data in the form of formative test scores were analyzed using simple statistical calculations, such as mean scores and percentage of students achieving the Minimum Mastery Criteria (KKM), to identify improvements in learning outcomes between cycles. Qualitative data from observation sheets and field notes were analyzed descriptively to identify patterns in student behavior, engagement, and responses to the cooperative learning strategy. These two types of data were then interpreted holistically to determine the overall effectiveness of the jigsaw model in the classroom setting. Reflections drawn from each cycle were used to revise lesson plans and instructional strategies for the subsequent cycle, in order to address any shortcomings and enhance learning effectiveness. This continuous improvement process is one of the defining characteristics of Classroom Action Research, enabling practitioners to adapt and respond to students' needs in real-time. Through this research design, it is expected that the study will not only contribute to improving student learning outcomes in Social Studies but also offer practical insights for teachers seeking to implement collaborative learning strategies aligned with 21st-century education principles.

IV. DISCUSSION

This classroom action research was conducted in two cycles to improve the Social Studies learning outcomes of fifth-grade students at SDN 3 Sendang Agung through the implementation of the jigsaw cooperative learning model. Each cycle consisted of four stages: planning, implementation, observation, and reflection. The results include quantitative data in the form of formative test scores and qualitative data on students' learning activities during the instructional process. In the pre-cycle stage, only 7 out of 15 students (47%) met the Minimum Mastery Criteria (KKM), with an average class score of 60. This result indicated a clear need for pedagogical intervention. After the implementation of Cycle I, the number of students achieving mastery increased to 11 (73%), and the average score rose to 69. Although this showed positive progress, issues such as uneven participation and group management were still evident. By Cycle II, improvements were implemented based on prior reflections, leading to more optimal results: 14 students (93%) surpassed the KKM, and the class average increased to 76.

Table 1. Recapitulation of Average Scores and Learning Mastery

Stage	Average Score	Number of Students	Mastery
		Achieving Mastery	Percentage
Pre-Cycle	60	7	47%
Cycle I	69	11	73%
Cycle II	76	14	93%

In addition to the improvement in learning outcomes, student engagement also increased significantly. Observation data from Cycle I showed that 60% of students actively listened, 33% asked questions and expressed opinions, and 67% completed tasks on time. In Cycle II, these indicators rose to 87%, 60%, 53%, and 93% respectively. These patterns suggest that the jigsaw model not only improves academic performance but also fosters active participation and student responsibility in the learning process.

Table 2. Recapitulation of Student Learning Activities

Activity Indicators	Cycle I (%)	Cycle II (%)
Listening to Explanations	60%	87%
Asking Questions	33%	60%
Expressing Opinions	33%	53%
Completing Tasks on Time	67%	93%

These findings support prior research by Astuti and Pratiwi (2022), who found that the jigsaw method enhances student achievement and interaction. Similar conclusions were drawn by Hasanah and Hidayatullah (2023), who emphasized that cooperative learning fosters a more dynamic and democratic learning environment. Furthermore, Wulandari and Susanto (2021) reported that implementing jigsaw in elementary classrooms led to higher student motivation and more meaningful peer learning experiences. Aligned with Vygotsky's social constructivist theory, as cited by Munawaroh (2021), the jigsaw model provides space for students to construct knowledge collaboratively through peer interaction. Each student serves as both a learner and a teacher, creating a reciprocal learning environment. This is consistent with the findings of Putri and Maulida (2022), who highlighted the role of peer tutoring in improving understanding and confidence in lower-grade students.

The results also echo findings from Utami and Rahman (2023), who observed that cooperative models like jigsaw significantly boost students' self-efficacy and sense of accountability. Their study emphasized that students learn better when given structured roles and when they are aware of the impact of their contributions on group success. From a character development perspective, the model strengthens the principles promoted in the Pancasila Student Profile. According to Kemendikbudristek (2022), education should emphasize collaboration, independence, and mutual respect – values naturally embedded in the jigsaw learning process. As supported by research from Rahayu and Kurniawan (2021), such learning models are crucial in cultivating empathy and communication skills, especially among primary school students. Moreover, the positive effect of the jigsaw method in this study mirrors the findings of Dewi and Fadillah (2023), who demonstrated that cooperative learning encourages inclusivity and reduces classroom anxiety. Their study observed that students who were previously passive became more expressive and engaged when given responsibility in a group setting.

Although the implementation of the jigsaw model requires deliberate planning – especially in forming balanced groups and designing material subtopics – the benefits clearly outweigh the challenges. Teachers are encouraged to adopt this model not only as an instructional strategy but as a vehicle for promoting student-centered, collaborative, and humanistic learning experiences. Philosophically, this model resonates with the vision of education that treats learners as active agents capable of contributing meaningfully to their learning community. Thus, the success of the jigsaw learning model in this study confirms its relevance not only in improving academic outcomes but also in transforming the classroom climate into a more inclusive, equitable, and empowering space. It provides empirical evidence that the implementation of cooperative learning is a practical and visionary solution aligned with current educational demands and national curriculum reforms.

V. CONCLUSION

Based on the results of the study conducted over two cycles, it can be concluded that the implementation of the jigsaw cooperative learning model effectively improved both learning outcomes and student engagement in Social Studies for fifth-grade students at SDN 3 Sendang Agung. This is evidenced by the increase in the average student score from 60 in

the pre-cycle to 76 in Cycle II, as well as the rise in the learning mastery percentage from 47% to 93%. In addition, student activities such as asking questions, expressing opinions, and completing tasks also showed significant improvement. Therefore, it is recommended that teachers consider using the jigsaw model as an alternative instructional strategy – not only to support academic achievement but also to foster collaborative attitudes, a sense of responsibility, and self-confidence among students.

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