



EFFECTIVENESS AND LIMITATIONS OF COOPERATIVE LEARNING: A CLASSROOM ACTION RESEARCH IN SOCIAL STUDIES

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Abstract

Cooperative learning is recognized as an effective strategy for improving academic performance and social skills, yet evidence from Indonesian junior high school Social Studies classrooms remains limited. This study aimed to evaluate the effectiveness of cooperative learning in enhancing student achievement and engagement among Grade IX students at SMP Negeri 5 Depok. A two-cycle classroom action research design was implemented with 32 students. The intervention applied the Student Teams Achievement Division (STAD) model supported by validated lesson plans, worksheets, and a 15-item multiple-choice test. Data were collected through tests, observations, and field notes, and analyzed using descriptive statistics, paired-samples t-tests, Wilcoxon signed-rank tests, and effect size estimation. The findings revealed an initial improvement in learning outcomes, with the proportion of students achieving the minimum mastery criterion (KKM = 75) increasing to 70% in Cycle 1. However, performance stabilized in Cycle 2, with no significant difference between pre- and post-test scores ($p > 0.05$, Cohen's $d = -0.01$). This plateau indicates that cooperative learning stimulated engagement and collaboration but did not sustain further cognitive gains without instructional variation. The study confirms cooperative learning's promise as a pedagogical strategy while underscoring the need for adaptive design, multidimensional assessment, and broader implementation across subjects to capture its full academic and social benefits.

Keywords: Cooperative Learning; Junior High School; Students; Learning Outcomes.

Abstrak

Pembelajaran kooperatif dikenal sebagai strategi yang efektif dalam meningkatkan prestasi akademik dan keterampilan sosial, namun bukti empiris di kelas Ilmu Pengetahuan Sosial (IPS) tingkat SMP di Indonesia masih terbatas. Penelitian ini bertujuan untuk mengevaluasi efektivitas pembelajaran kooperatif dalam meningkatkan hasil belajar dan keterlibatan siswa kelas IX di SMP Negeri 5 Depok. Penelitian menggunakan desain Penelitian Tindakan Kelas (PTK) dua siklus dengan melibatkan 32 siswa. Model yang diterapkan adalah Student Teams Achievement Division (STAD) yang didukung oleh RPP, Lembar Kerja Peserta Didik (LKPD), serta tes pilihan ganda berjumlah 15 soal. Data dikumpulkan melalui tes, observasi, dan catatan lapangan, kemudian dianalisis menggunakan statistik deskriptif, uji paired-samples t-test, uji Wilcoxon, serta perhitungan effect size. Hasil penelitian menunjukkan adanya peningkatan awal, dengan persentase siswa yang mencapai Kriteria Ketuntasan Minimal (KKM = 75) naik hingga 70% pada siklus I. Namun, pada siklus II capaian siswa cenderung stabil, dengan tidak terdapat perbedaan signifikan antara skor pra dan pascates ($p > 0.05$, Cohen's $d = -0.01$). Pola ini menunjukkan bahwa pembelajaran kooperatif berhasil meningkatkan keterlibatan, namun tidak cukup untuk mendorong kenaikan hasil kognitif tanpa variasi strategi. Penelitian ini menegaskan potensi pembelajaran kooperatif sebagai strategi pedagogis, sekaligus menekankan perlunya desain adaptif, asesmen multidimensi, serta penerapan lintas mata pelajaran untuk menangkap manfaat akademik maupun sosial secara menyeluruh.

Kata Kunci: *Pembelajaran Kooperatif; Siswa Sekolah Menengah Pertama; Hasil Belajar.*

A. Introduction

Improving the quality of learning in secondary schools has become a global priority, particularly in developing countries where disparities in achievement remain a concern. Effective learning is no longer understood as the passive transmission of knowledge but as an interactive process in which students actively construct understanding through meaningful engagement with teachers, peers, and instructional resources (Mardiana et al., 2020; Wirdaningsih, Arnawa, & Anhar, 2017). In this context, pedagogical innovations that encourage collaboration and higher-order thinking are essential to prepare students with both academic competencies and social skills relevant to the twenty-first century.

In Indonesia, Social Studies (IPS) remains a critical subject for developing civic awareness and interdisciplinary understanding among junior high school students. However, classroom practices are often

dominated by conventional, teacher-centered approaches, relying heavily on lectures and rote memorization (Kurniawan, Elmunsyah, & Muladi, 2018). Preliminary classroom observations in Grade IX-B of SMP Negeri 5 Depok showed that only half of the students reached the minimum mastery criterion (KKM). Limited opportunities for peer interaction and collaborative learning appear to hinder students' ability to achieve higher-level understanding. These challenges are consistent with broader national concerns regarding the effectiveness of classroom practices in engaging students meaningfully (Armansyah, 2014).

Cooperative learning has been identified in international research as a promising method to improve academic achievement and foster essential social skills. Studies across diverse contexts have shown that models such as Student Teams Achievement Division (STAD) and Group Investigation (GI) enhance engagement, motivation, and conceptual understanding (Fiteriani & Baharudin, 2017; Primartadi, 2013). In addition, cooperative learning aligns with social constructivist theory and Vygotsky's concept of the Zone of Proximal Development, emphasizing the importance of peer collaboration in knowledge construction. Nevertheless, much of the existing evidence comes from mathematics and science education, with relatively limited focus on Social Studies at the junior high school level, particularly in the Indonesian context.

To address this gap, the present study implemented a cooperative learning model in Social Studies classrooms at SMP Negeri 5 Depok. The research sought to evaluate whether structured cooperative strategies could improve student outcomes, not only in terms of academic achievement but also through enhanced participation and collaborative processes. By combining classroom action research with both quantitative and qualitative analysis, this study contributes to filling the empirical gap regarding cooperative learning in Social Studies education in Indonesia. Furthermore, the study aims to enrich the theoretical discourse on how cooperative learning can sustain or plateau in effectiveness, offering implications for both classroom practice and curriculum development.

Globally, initiatives such as the OECD's Programme for International Student Assessment (PISA) and UNESCO's Education 2030 Agenda emphasize the need for pedagogical reforms that prioritize collaboration, problem-solving, and critical thinking skills. These competencies are especially vital in Social Studies, where students are expected to analyze real-world issues, engage in civic discourse, and develop empathy for diverse perspectives (UNESCO, 2017). Within Indonesia, the government has also underscored the importance of improving active learning through the implementation of the *Merdeka Belajar* curriculum, which encourages teachers to adopt innovative approaches that are student-centered and participatory. However, despite these policy directions, the gap between intended curriculum and classroom realities remains wide, with many schools struggling to translate these principles into effective practice (Subkhan, 2020).

While prior research highlights the benefits of cooperative learning, the phenomenon of performance stabilization—or plateau—has rarely been examined systematically. Most studies report consistent gains in student achievement, yet they often overlook variations in group dynamics, motivation, or instructional design that can limit sustained improvement (Gillies, 2016). This raises critical theoretical questions about the boundary conditions of cooperative learning: under what circumstances do its effects diminish, and how can teachers intervene to sustain progress? By situating the study within this underexplored dimension, the present research offers not only empirical evidence from an Indonesian junior high school but also contributes to refining the broader theoretical framework of cooperative learning. This dual contribution—practical and theoretical—strengthens the relevance of the study for both local stakeholders and the international scholarly community.

B. Methods

This study adopted a Classroom Action Research (CAR) approach (Figure 1.) based on the cyclical model of Kemmis and Taggart (1988), which emphasizes iterative improvements through collaborative and reflective practices. The design consisted of two cycles, each of which followed four stages: planning, action, observation, and reflection. Every cycle was conducted over two instructional meetings (2×45 minutes). This design was chosen to systematically evaluate the impact of cooperative learning while allowing the teacher-researcher to refine instructional strategies across iterations.

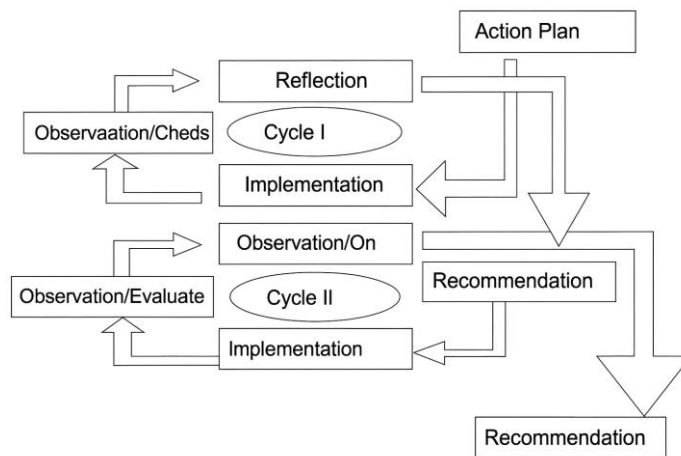


Figure 1. Schematic of Classroom Action Research Methodology

The research was carried out at SMP Negeri 5 Depok, Sleman, involving 32 students (17 female and 16 male) of Grade IXB aged 14–15 years. This class was purposively selected because preliminary observations conducted in October 2023 indicated that only 50% of students had reached the minimum mastery criteria (KKM = 75) in Social Studies. This condition made the class a relevant case for investigating the effectiveness of cooperative learning in improving academic achievement and classroom participation. The intervention applied a cooperative

learning model—specifically the Student Teams Achievement Division (STAD) approach. At the planning stage, lesson plans and student worksheets were developed and validated by two Social Studies experts.

During the action stage, students were organized into heterogeneous groups of 4–5 members based on academic ability and gender. Each session involved teacher instruction, group discussions, peer tutoring, and group presentations. Observation was conducted to document student engagement and collaboration, while reflection sessions were held at the end of each cycle between the teacher and researcher to identify successes and areas for improvement before proceeding to the next cycle.

Data collection employed three instruments. First, a 15-item multiple-choice test was administered at the end of each cycle to measure academic achievement. The test was validated for content relevance (CVI = 0.83) and demonstrated acceptable reliability (KR-20 = 0.78). Second, observation sheets were used to record student participation, collaboration, and activity levels during group learning. Third, field notes and reflective journals were maintained to capture contextual information, student responses, and instructional challenges. These instruments provided both quantitative and qualitative perspectives on the learning process.

For data analysis, a mixed-methods approach was adopted. Quantitative data from achievement tests were analyzed descriptively by calculating mean scores, standard deviations, and percentages of students reaching the KKM. Inferential analysis was performed using paired t-tests or Wilcoxon signed-rank tests, depending on the normality of the data, while effect sizes (Cohen's *d*) were computed to determine the magnitude of improvement. Student achievement was also classified into four categories: high, moderate, fair, and low (Table 1).

Table 1. Student Learning Achievement Criteria

Score Range	Category
85 - 100	High
60 - 84	Moderate
40 - 59	Fair
0 - 39	Low

Meanwhile, qualitative data from observation sheets and field notes were analyzed using the Miles and Huberman (1994) interactive model, (Figure 2.) which consists of data reduction, data display, and conclusion drawing. To ensure credibility, triangulation was conducted by comparing test results, observational records, and reflection logs

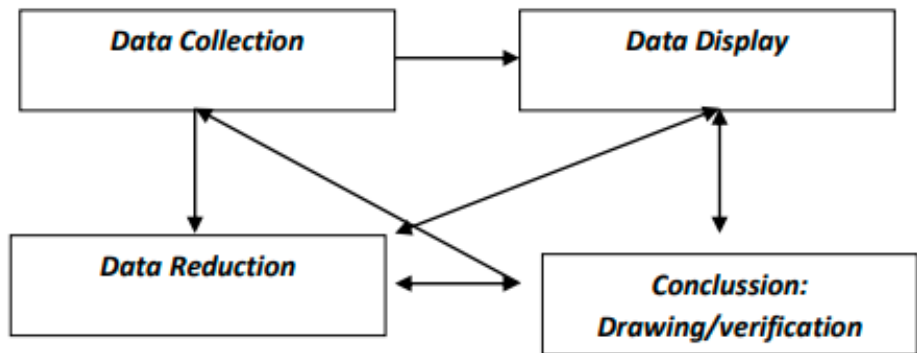


Figure 2. Components of Interactive Data Analysis in the Miles and Huberman Model (Sugiyono, 2008)

C. Result and Discussion

1. Result

The cooperative learning intervention was applied to 32 students of Class IX-B at SMP Negeri 5 Depok. Student achievement was measured using 15-item multiple-choice tests administered before and after the treatment. Descriptive statistics are presented in Table 2.

Table 2. Descriptive Statistics of Student Scores (n = 32)

Statistic	Pre-cycle	Post-cycle
Mean	70.31	70.00
SD	22.39	27.36
Median	75	80
Min-Max	0-100	0-100
% ≥ KKM (75)	71.9%	59.4%

The analysis of student achievement revealed that the overall class average remained almost unchanged following the intervention. In the pre-cycle, the mean score was 70.31, while in the post-cycle it was 70.00. Although the median score increased slightly from 75 to 80, this improvement was accompanied by a wider spread of values. The standard deviation rose from 22.39 in the pre-cycle to 27.36 in the post-cycle, indicating greater variability in student performance after the implementation of cooperative learning. Figure 3 presents the individual scores of all students, illustrating their performance before and after the treatment.

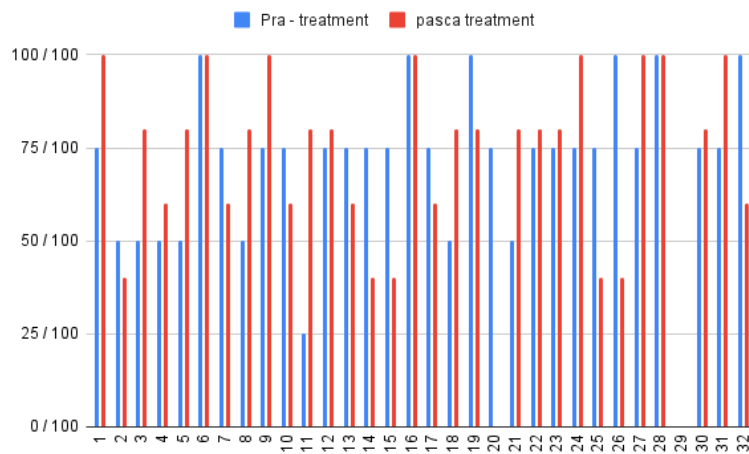


Figure 3. Individual Scores of All Students

Another important finding concerns mastery of the minimum learning standard. The proportion of students achieving the minimum mastery criterion (KKM = 75) declined after the intervention. In the pre-

cycle, 71.9% of students (23 out of 32) met the criterion, whereas in the post-cycle this figure dropped to 59.4% (19 out of 32). This decline suggests that while some students benefited from the cooperative learning model, others were unable to maintain or improve their performance.

The distribution of scores is further illustrated in Figure 4. The figure highlights the considerable variation in individual trajectories. Several students showed substantial improvement—for example, from 25 to 80, 50 to 80, or 75 to 100. However, others experienced marked declines, such as from 75 to 0 or from 100 to 40. This divergence in individual progress explains why the class mean remained stable overall, despite the presence of notable gains among certain students.

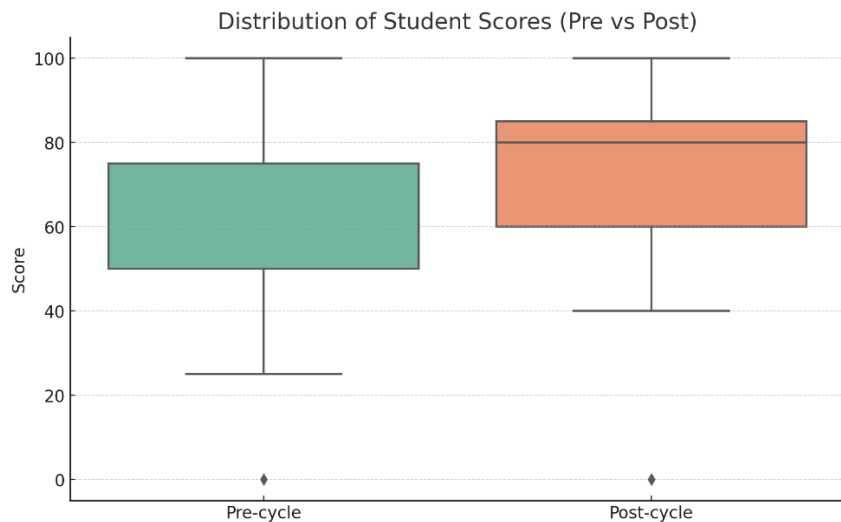


Figure 4. Distribution of Student Scores Before and After Cooperative Learning

Inferential statistical tests further support the descriptive findings. A paired-samples t-test revealed no significant difference between the pre- and post-cycle scores ($t(31) = 0.06, p = 0.95$). Similarly, the Wilcoxon signed-rank test confirmed that the difference was not statistically significant ($W = 199.5, p = 0.94$). The effect size, measured using Cohen's d , was -0.01 , indicating a negligible effect. Taken together, these results

suggest that the cooperative learning intervention, in its current implementation, did not produce a meaningful impact on overall student achievement when measured through test scores.

2. Discussion

The findings of this study demonstrate that the implementation of cooperative learning contributed to an initial improvement in student achievement from the pre-cycle (50%) to Cycle 1 (70%), followed by stabilization at the same level in Cycle 2. This pattern, which reflects a *plateau effect*, suggests that while cooperative learning can generate significant short-term academic gains, its sustained effectiveness requires adaptive modifications in instructional design. In the first phase, cooperative structures succeeded in creating an engaging and participatory learning atmosphere. However, as the cycles progressed, the motivational and cognitive novelty of the approach appeared to diminish, highlighting the importance of continuous variation and innovation in cooperative learning strategies.

The observed trend aligns with numerous previous studies that confirmed the effectiveness of cooperative learning in improving student outcomes across various disciplines. For instance, Anzai (2022) reported an increase in learning outcomes from 79% to 89%, while Evalia (2020) observed similar gains from 71% to 83% at SD Negeri 02 Kebagusan. These studies affirm that cooperative learning, particularly the STAD model, can significantly enhance cognitive performance when implemented with sufficient scaffolding and task variation. Likewise, Heniastuti (2023) found that the application of STAD in mathematics classes improved student achievement from 58.33% to 80.55%, while Sari, Murdiono, and Lubis (2025) confirmed the Group Investigation model's success in strengthening Civic Education learning. Winarto (2018) also demonstrated that combining STAD with teaching aids increased mastery levels in mathematics from 77.5% to 90%. Together, these results reinforce

that cooperative learning is a robust, flexible, and interdisciplinary pedagogical framework adaptable across subjects and educational levels.

Consistent with this growing body of literature, the present study confirms several well-established advantages of cooperative learning. First, it fosters active participation and collaborative interaction, which are central to promoting both social and academic growth (Saputra, Faiz, & Gusmaneli, 2024; Gusniar, 2013; Hasanah, et.al., 2019). Second, it deepens conceptual understanding through dialogue, peer teaching, and reflection—elements that Metzler and Colquitt (n.d.) identified as essential to cognitive elaboration. Third, it cultivates critical social skills such as cooperation, communication, and respect for diverse perspectives (Barnawi, Al Ghozali, & Pratama, 2020). The implementation of the STAD model in this study succeeded in encouraging students to discuss, explain, and support one another, suggesting that cooperative learning can nurture positive interdependence and interpersonal responsibility—two outcomes that extend beyond mere academic achievement.

In this regard, cooperative learning should be understood as a multidimensional approach that integrates cognitive, affective, and behavioral learning outcomes. Ulfah et al. (2016) reported a 10% improvement in achievement, Masita et al. (2016) observed an 8% gain, and Suhendri (2011) demonstrated that cooperative learning could enhance the cognitive, affective, and psychomotor domains simultaneously. Similar findings were obtained by Heniastuti (2023) in MAN 2 Jember and Nasrul (2014) in SD Negeri 16 Tanjung Aur, where student outcomes improved substantially following the use of cooperative learning. These consistent patterns across subjects and school levels provide strong evidence that cooperative learning promotes comprehensive educational development rather than isolated skill acquisition.

Nevertheless, what distinguishes this study from previous work is its identification of a *plateau effect*, in which learning improvement reached a ceiling after the first cycle. Theoretically, this phenomenon contributes to refining our understanding of the boundary conditions of cooperative

learning. While previous research predominantly reported continuous gains, this study reveals that the success of cooperative learning is not necessarily linear or indefinite. The results imply that initial exposure to cooperative activities effectively motivates students and facilitates rapid learning, but without additional cognitive challenge, role rotation, or increased task complexity, progress tends to stagnate. This insight extends Social Interdependence Theory (Johnson & Johnson) by suggesting that positive interdependence, though foundational, must be accompanied by evolving instructional structures that sustain engagement and intellectual growth.

From a constructivist perspective, this plateau resonates strongly with Vygotsky's Zone of Proximal Development (ZPD). According to Vygotsky (1978), learners progress through phases of assisted performance followed by consolidation. Cooperative learning likely brought students into their ZPD during Cycle 1, enabling significant cognitive growth through collaboration and peer support. However, in Cycle 2, the same tasks may no longer have offered sufficient scaffolding to push learners to the next developmental level. Without new stimuli or differentiated instruction, learners may remain in a state of equilibrium, explaining why performance plateaued. This observation suggests that teachers must strategically renew cooperative structures to maintain their efficacy, ensuring that tasks remain aligned with students' evolving capabilities.

The implications of this finding are significant for both theory and practice. Theoretically, it challenges the assumption that cooperative learning inherently guarantees continuous improvement. Instead, its success depends on dynamic instructional adaptation, contextual responsiveness, and alignment between pedagogical methods and learning objectives. Practically, it underscores that cooperative learning should not be treated as a static technique but as a flexible design space where teachers continuously adjust strategies to meet diverse learning needs. For example, the integration of role rotation, peer assessment, and reflection activities can refresh motivation and sustain higher-order engagement.

In the Indonesian educational context, these findings also resonate with the *Merdeka Belajar* curriculum, which emphasizes learner autonomy, collaboration, and critical thinking. Cooperative learning embodies these principles by positioning students as active agents who construct knowledge through interaction and shared inquiry. However, the plateau observed in this study indicates that *Merdeka Belajar*'s ideals cannot be realized merely by adopting cooperative structures; teachers must design activities that are contextually relevant, varied, and responsive to student readiness levels. This adaptation requires ongoing reflection, professional learning, and institutional support for pedagogical innovation.

Furthermore, this study reinforces the necessity of aligning cooperative learning with multidimensional assessment practices. The reliance on written multiple-choice tests in this study may have underestimated students' progress in non-cognitive domains such as empathy, communication, and teamwork. To capture the holistic benefits of cooperative learning, educators should employ mixed-assessment instruments—peer evaluations, rubric-based observations, reflective journals, and performance tasks—that can better represent both academic and socio-emotional growth. Such integrative assessment aligns with global calls from UNESCO (2017) and OECD's PISA framework to measure learning outcomes that go beyond traditional testing and reflect real-world competencies.

While this study provides valuable insights, its limitations should be acknowledged. The small sample size ($n = 32$) and the absence of a control group limit generalizability and causal inference. The short two-cycle duration may have been insufficient to capture long-term or delayed effects, and the absence of a systematic analysis of group dynamics limits understanding of how interpersonal factors affected outcomes. Future research could address these limitations by employing quasi-experimental or longitudinal designs, incorporating mixed methods, and expanding to different subjects and educational levels. Such studies would not only

validate the findings but also contribute to a more comprehensive theory of how cooperative learning evolves over time.

In summary, the present study affirms that cooperative learning can be an effective approach for enhancing engagement, social interaction, and initial academic achievement in Social Studies. Yet, it also highlights that the sustainability of these gains depends on the teacher's ability to innovate and adapt instructional designs. Cooperative learning should therefore be perceived as an evolving pedagogical ecosystem rather than a fixed method—a system that requires ongoing reflection, contextualization, and creative variation. By integrating theoretical insights from constructivism and social interdependence with practical principles from the *Merdeka Belajar* framework, cooperative learning can continue to evolve as a transformative model for twenty-first-century education.

Despite its contributions, this study is not without limitations. First, the research involved a relatively small number of participants ($n = 32$) from a single class, which restricts the generalizability of the findings. A larger and more diverse sample might reveal different patterns of response to cooperative learning interventions. Second, the absence of a control group limits the study's capacity to draw firm causal inferences between the intervention and observed outcomes. The observed improvements might partially result from external factors such as teacher familiarity or increased student motivation due to novelty effects. Third, the duration of only two action cycles may not have been sufficient to capture the longitudinal development of cooperative learning outcomes, particularly affective and social gains that often emerge gradually. Fourth, the assessment relied heavily on cognitive tests, while affective and behavioral dimensions—such as collaboration quality, empathy, and persistence—were not quantitatively analyzed. Finally, variations in group dynamics and peer interactions were not systematically examined, making it difficult to determine whether internal group structures contributed to the plateau

effect. These limitations should be considered when interpreting the findings and point to promising directions for future research.

Future studies are therefore encouraged to employ quasi-experimental or longitudinal designs that include control groups and multiple data sources. Incorporating qualitative analyses, such as classroom discourse studies or ethnographic observation, would allow a more comprehensive exploration of how cooperative learning evolves in real classroom contexts. Moreover, replicating this research across different subjects—such as Mathematics, Science, or Language—and at multiple grade levels would enhance generalizability and provide deeper insight into how cooperative dynamics function across disciplines. Integrating digital platforms, in line with the current trend of blended and technology-supported learning, could also open new pathways for innovation within the Merdeka Belajar framework.

The present study affirms that cooperative learning can be an effective approach for enhancing engagement, social interaction, and initial academic achievement in Social Studies. Yet, it also highlights that the sustainability of these gains depends on the teacher's ability to innovate and adapt instructional designs. Cooperative learning should therefore be perceived as an evolving pedagogical ecosystem rather than a fixed method—a system that requires ongoing reflection, contextualization, and creative variation. By integrating theoretical insights from constructivism and social interdependence with practical principles from the Merdeka Belajar framework, cooperative learning can continue to evolve as a transformative model for twenty-first-century education.

D. Penutup

This study demonstrated that the implementation of cooperative learning in Social Studies at SMP Negeri 5 Depok produced an initial improvement in student achievement, which later stabilized in the second cycle, indicating a plateau effect. This pattern suggests that cooperative

learning is effective in enhancing engagement, collaboration, and cognitive outcomes in the short term, but its sustainability depends on the teacher's ability to innovate and adapt instructional design. The study thereby confirms cooperative learning as a valuable pedagogical entry point, while also revealing its limitations when applied repetitively without renewal.

From a pedagogical perspective, the results highlight the importance of aligning teaching strategies with assessment practices. Cooperative learning encouraged interaction and peer support, yet the cognitive tests used may not have fully reflected the depth of students' learning processes. Some inconsistencies in performance could thus stem from a misalignment between instructional activities and evaluative measures. To ensure greater coherence, future implementations should explicitly connect cooperative learning tasks with assessment objectives so that collaborative engagement translates into measurable academic improvement.

Beyond its cognitive dimension, this study underscores the relevance of cooperative learning for developing non-cognitive and social-emotional competencies such as communication, empathy, and responsibility. These skills align with the *Merdeka Belajar* curriculum's emphasis on learner autonomy and collaboration. The observed plateau in test results may mask progress in affective domains, suggesting that a multidimensional approach to evaluation—combining cognitive, affective, and behavioral indicators—is essential to capture the full impact of cooperative learning on student development.

Theoretically, this research contributes to refining the understanding of cooperative learning by identifying its boundary conditions. The plateau effect observed here supports Vygotsky's concept of the Zone of Proximal Development (ZPD), implying that students initially progress through peer-assisted learning but later require new challenges and differentiated support to move forward. It also extends Social Interdependence Theory by indicating that positive

interdependence alone is insufficient unless reinforced with varied roles, adaptive structures, and reflective teaching practices. In this sense, cooperative learning should be viewed not as a fixed model but as a flexible pedagogical framework that evolves in response to learners' needs and classroom dynamics.

Although the study was limited by a small sample size, the absence of a control group, and the short two-cycle duration, it provides valuable insights for future research. Further studies employing mixed methods, longer intervention periods, and broader subject coverage are recommended to validate and expand these findings. Practically, teachers should implement cooperative learning with creative variation, integrate it into *Merdeka Belajar* principles, and use diverse assessment tools – such as peer evaluations and reflective journals – to document holistic learning outcomes.

Cooperative learning remains a powerful and adaptable approach for fostering active, collaborative, and meaningful education. Yet, its long-term success requires continuous innovation, contextual adaptation, and alignment with both cognitive and non-cognitive goals. When dynamically implemented, cooperative learning can serve as a sustainable pedagogical framework that nurtures academic excellence, social growth, and lifelong learning in harmony with the vision of *Merdeka Belajar*.

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