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# IMPLEMENTING THE COLLABORATIVE LEARNING MODEL TO IMPROVE STUDENTS' COOPERATION SKILLS

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#### **ABSTRACT**

Background Collaborative learning enhances critical thinking skills, communication, teamwork, and

student motivation, creating an interactive environment that supports future academic

and social success.

Purpose This study aims to explain and describe the implementation of the collaborative learning

model in improving students' cooperation skills at MTs Al-Ilmu Ende, focusing on the

learning process and activities.

Research This research employs a qualitative case study approach through interviews,

Methodology observations, and documentation, with data processing involving condensation,

presentation, and triangulation to ensure validity

Result The findings indicate that collaborative learning positively contributes to students'

cooperation, with an average score of 4.3. Students benefit significantly, particularly in learning motivation, participation in discussions, and adaptability within groups. However, engagement in academic forums needs improvement. Strategies such as additional mentoring and presentation training are necessary to help students gain

confidence in expressing ideas scientifically

Conclusion Collaborative learning enhances students' social and academic skills, preparing them to

face future educational and life challenges

Keywords Learning, Collaborative, Cooperation, Students

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### INTRODUCTION

Students who possess a high level of cooperation in learning will strive to think critically during group discussions, thereby improving their mastery of concepts compared to individual learning (Fadilah, 2017). The success of collaborative learning in enhancing students' writing skills is supported by clear learning objectives, effective classroom structure and management, diverse group composition, appropriate technology, documentation, and interaction among group members (Adawiyah & Jennah, 2023). This study examines students' learning activities in collaborative learning using simple media, including the abilities to ask questions, respond, conduct experiments, cooperate, express opinions, and draw conclusions (Kustumati et al., 2023).

Students' cooperation skills remain low in completing their studies, despite the school having extracurricular achievements that require high cooperation. The low level of cooperation is evident from theoretical indicators such as description, problem orientation, empathy, equality, and professionalism (Fathimatuzzahrah, 2020). Cooperation among students in the classroom plays a crucial role in improving the quality of learning (Puspitasari & Widodo, 2019). Another benefit is the strengthening of a sense of brotherhood and solidarity among students, which can foster a more conducive learning environment (Kumparan, 2021). Furthermore, collaborative learning methods have been proven to be key to building effective group cooperation (Identif, 2025). Therefore, it is important for students to understand that cooperation in learning not only affects their academic outcomes but also contributes to the development of character and social skills that will be valuable in their future lives (Rizma, 2022).

Collaborative learning in schools plays a crucial role in developing students' critical thinking skills and problem-solving abilities (Warsah et al., 2021). Through group cooperation, students can exchange ideas, deepen their understanding of the material, and increase active engagement in the learning process (Johnson & Johnson, 2020). This method is also effective in honing social skills, such as communication and teamwork, which are essential for future success (Slavin, 2021; Laal & Ghodsi, 2020). Moreover, collaborative learning encourages students to take greater responsibility for their own learning and enhances their motivation to learn (Tran, 2020; Zakaria & Iksan, 2020). Thus, the integration of collaborative learning into the school curriculum can create a more dynamic and interactive learning environment, ultimately improving student learning outcomes (Kyndt et al., 2021).

The cooperative learning model reduces lethargy through discussions, increases learning motivation, trains group responsibility, and encourages students to cooperate and support each other to achieve better learning outcomes (Farizky et al., 2018). There are four components in the research concept, namely planning, acting, observing, and reflecting, which form a complete cycle (Goloa et al., 2023). Humans are social beings who play a role in interacting with other living beings and the environment where they live (Wati et al., 2023). Cooperation skills are important to develop from an early age so that children can socialize, interact, be tolerant, appreciate, and share, with guidance from parents to prepare them to face new environments and achieve common goals (Prabandari & Fidesrinur, 2019). Humans are social beings who need each other to achieve life goals; therefore, cooperation skills become an important personality aspect that must be possessed in community life (Rosita & Leonard, 2015).

Research findings by Yennita et al. (2024) revealed that the cooperative time-token learning model effectively enhances students' cooperation and communication skills in science learning, with communication improvements more evident among female students. Furthermore, Porkodi et al. (2023) reported that collaborative learning effectively improves competencies in entrepreneurship programs, especially communication skills, cooperation, critical thinking, and responsibility, outperforming individual learning in preparing students for the real world. Supratiningsih et al. (2021) explained that the implementation of Student Team Achievement Division-based learning instruments effectively improves collaboration skills of third-grade

elementary students in solving mathematics problems, with significant improvements in cooperation, responsibility, communication, compromise, and flexibility. Mursid et al. (2023) added that the development of collaborative models based on e-learning effectively enhances student competencies in work skills and higher-order thinking skills significantly.

Various previous studies indicate that collaborative learning effectively improves cooperation, communication, and academic competence across different educational levels. However, student participation in academic forums still needs to be increased. This study highlights the necessity of additional strategies such as mentoring and presentation training to boost students' confidence in expressing ideas scientifically. The novelty of this research lies in the development of a concrete approach that strengthens active participation and academic communication skills of students. The focus of the study is the implementation of a collaborative learning model at MTs Al-Ilmu Ende, with processes that encourage active discussion, idea sharing, and cooperation. As a result, students become more communicative, able to appreciate others' opinions, and possess better social skills, thereby making learning more interactive, enjoyable, and motivating. This study is expected to contribute to the development of effective learning methods.

#### **Research Methodology**

This research was conducted at MTs Al-Ilmu Ende, located in Kelurahan Kota Ratu, Kecamatan Ende Utara, Kabupaten Ende, Province of East Nusa Tenggara. The informants in this study consisted of five individuals, namely the school principal, the vice principal in charge of student affairs, the class guardian teacher, the guidance and counseling teacher, and a student. This study employed a qualitative approach using a case study method to analyze the implementation of the collaborative learning model in improving students' cooperation skills. Through this research, it is expected to obtain a clear description of the effectiveness of the collaborative learning method in enhancing interaction and cooperation within the classroom. Data collection was carried out through three main techniques. First, interviews with teachers were conducted to explore in depth the implementation of collaborative learning and its impact on students' cooperation. Second, participant observation was conducted by directly observing the activities of students and teachers during the learning process, thereby gathering data on the dynamics of group interactions. Third, documentation techniques were used to collect relevant documents, such as learning reports and records of group discussion outcomes. The data obtained were then processed through three stages. The first stage involved data condensation, which consisted of grouping data based on aspects of collaborative learning and student cooperation. Subsequently, the data were presented in the form of narratives and tables to provide a more structured overview. The final stage was drawing conclusions to obtain valid research results. Data validity was tested through source triangulation by comparing interview results from various informants, as well as method triangulation by compiling results from interviews, observations, and documentation. Confirmability was ensured by verifying the research findings with the teachers, thereby making the conclusions academically accountable.

#### **RESULTS AND DISCUSSION**

# Implementation of the Collaborative Learning Model at MTs Al-Ilmu Ende

The collaborative learning model at MTs Al-Ilmu Ende is implemented to enhance student interaction through a system of discussion and teamwork between teachers and students. In this approach, students do not merely receive material passively; rather, they are presented with problems related to the core material to be discussed and solved collectively under the guidance of subject teachers or class guardians. This approach aims to create a more interactive learning experience and to develop students' critical thinking and effective communication skills. Project-Based Learning places students at the center of the learning process by

connecting theory with practice through meaningful projects, thereby enhancing collaborative skills, motivation, and engagement, supported by technology for effective online interaction (Putri, 2025).

The primary objective of implementing the collaborative learning model at MTs Al-Ilmu Ende is to improve cohesiveness and cooperation among students in completing assignments and group projects, assist them in developing critical and analytical thinking through healthy discussions, and foster an active, interactive, and enjoyable learning atmosphere that nurtures learning motivation. Additionally, this model aims to develop communication and team collaboration skills, which are vital in both academic and social aspects of students' lives, while providing learning experiences based on real-world problems that can be applied in everyday life. The collaborative learning model enables students to be actively involved in the learning process, encourages interaction, and develops good social skills through effective cooperation and communication during teaching and learning activities (Selvi et al., 2023).

Collaborative learning at MTs Al-Ilmu Ende offers numerous benefits for students. One significant advantage is the enhancement of social skills, whereby students learn to communicate effectively, work cooperatively in teams, and respect the opinions of others. Furthermore, this approach increases learning motivation because students are more engaged in interactive learning that involves active participation. Another benefit is the development of problem-solving skills, where students are trained to think critically when facing challenges and to collaboratively seek the best solutions. Through active involvement in the learning process, students find it easier to understand the concepts taught and apply them in real life. Contextual collaborative learning plays a role in improving students' understanding of mathematical concepts by promoting interaction, discussion, and joint problem-solving, thereby making the concepts easier to comprehend and apply in various situations (Ulfiana & Asnawati, 2018).

The responsibility for implementing the collaborative learning model at MTs Al-Ilmu Ende involves various parties who each play a role according to their respective functions. The head of the madrasa acts as the primary authority, ensuring the effectiveness of the program and integrating it into the madrasa's policies. Subject teachers and class guardians are responsible for guiding students during discussions and problem-solving by providing clear directions and creating a conducive learning environment. Additionally, the curriculum and student affairs staff support the implementation of this model by adjusting the curriculum and educational policies to be more flexible and responsive to students' needs. Students themselves play an active role in learning activities, engaging in discussions, and cooperating with classmates to develop ideas and solve assigned challenges. Equally important, parents and the community also participate in supporting the learning process by providing facilities and motivation to encourage students to be more active in learning. Collaborative learning in the digital era has a significant impact by enhancing social interaction, strengthening social skills, and creating a dynamic learning environment. Furthermore, this model promotes critical thinking through discussions, projects, and skill evaluations (Damanik, 2023).

The collaborative learning process at MTs Al-Ilmu Ende does not only take place within the classroom but also involves various external environments as learning resources. One of the locations utilized is the area surrounding the madrasa, where students conduct discussions and observations to relate the material to real-life situations, such as studying the local ecosystem or social phenomena occurring in the community. In addition, natural areas such as valleys between mountains and beaches serve as experiential learning sites offering more contextualized learning. At these locations, students can perform science experiments in an open environment or conduct in-depth geographic explorations. Beyond physical environments, digital media are also employed as supportive tools in collaborative learning. Technology facilitates online discussions and cooperation through virtual forums and presentations, enabling students to interact and share ideas more broadly. Collaborative learning improves academic achievement; however, its effectiveness depends on infrastructural

support, training, and innovative teaching strategies that encourage active involvement in the teaching and learning process (Rahayu et al., 2024).

The implementation of the collaborative learning model at MTs Al-Ilmu Ende aligns with the principles of the Independent Curriculum, which emphasizes freedom of thought and interaction. Students are given space to express ideas and develop critical thinking without pressure, allowing greater freedom to explore concepts. Moreover, this model strengthens cooperation and communication skills, where students are invited to collaborate effectively and develop empathy and solidarity within learning groups. This approach also provides opportunities for active student participation in learning. Students are not merely passive listeners but contribute to creating a dynamic and enjoyable learning atmosphere. Furthermore, learning is conducted through a contextual and experiential approach, where students are encouraged to learn through real-life experiences relevant to their daily lives. Consequently, learning becomes more meaningful and applicable to students. The collaborative learning method is carried out by dividing students into groups, discussing worksheets, presenting results randomly, and comparing, responding to, and questioning each other's groups (Nurpaidah, 2017).

# Collaborative Learning Method at MTs Al-Ilmu Ende in Enhancing Students' Cooperation Skills

Collaborative learning emphasizes teamwork within groups to build shared understanding, whereas competitive learning focuses on individual achievement with minimal interaction and evaluation as the determinant of success (Anwar et al., 2024). The implementation of the collaborative learning model at MTs Allmu Ende includes various strategies, among which are:

- Student Preparation: Prior to discussion sessions, students are assigned tasks to understand the
  material and identify problems to be discussed, enabling them to participate more effectively in group
  discussions.
- 2. Discussion and Problem Solving: Students work in groups to find solutions to the given problems, with guidance from teachers who help direct the flow of discussion.
- 3. Constructive Criticism Delivery: Students are taught to express opinions and critiques constructively to ensure productive discussions and foster good communication skills.
- 4. Scientific Discussion Forums: These activities are held regularly to cultivate a positive attitude, a sense of belonging, and to increase students' confidence in expressing ideas.
- 5. Project-Based Learning: Students are given projects to complete collaboratively within a specified timeframe, allowing them to learn time and task management effectively.

Collaborative learning is a discussion-based learning method that encourages knowledge sharing, enhances understanding, and develops cooperation skills to achieve common goals (Mimhamimdala et al., 2023). Collaborative learning activities at MTs Al-Ilmu Ende are conducted both during school hours and extracurricular activities, with the following time allocations: during school hours, activities are guided by subject teachers who provide directions and facilitate the learning process. Outside of school hours, supervision is provided by the teaching staff or parents, especially for activities requiring additional guidance. Daily activities commence at 07:00 AM and continue until completion, adjusted according to the students' learning schedules and their needs and flexibility in participating in the learning process.

Collaborative Learning can be conducted in both large and small groups consisting of four to five students (Amiruddin, 2019). The indicators of success for the collaborative learning model at MTs Al-Ilmu Ende are explained as follows:

1. Active Participation in Discussions – Students actively engage in group discussions by expressing opinions and contributing to problem-solving.

- 2. Ability to Solve Problems Collectively Students are able to cooperate in finding solutions to given problems using analytical and creative approaches.
- 3. Improvement of Communication Skills Students are capable of conveying ideas, providing constructive criticism, and engaging in effective discussions with group members.
- 4. Leadership and Task Management Each group member assumes different roles such as discussion leader, recorder, or presenter to cultivate leadership and responsibility.
- 5. Adaptability within the Group Students can collaborate with various group members, understand differing opinions, and adjust to team dynamics.
- 6. Involvement in Scientific Discussion Forums Students regularly participate in discussion forums aimed at enhancing their confidence in articulating ideas scientifically.
- 7. Effective Time Management In project-based learning, students are able to complete tasks within the designated time frame.
- 8. Increased Learning Motivation Students demonstrate higher interest and enthusiasm in the learning process due to interaction and active participation within the group.
- 9. Enhancement of Empathy and Solidarity Students learn to understand and appreciate the opinions and contributions of other group members, fostering a harmonious cooperative atmosphere.
- 10. Application of Learning in Daily Life Students are able to apply the cooperative skills they have learned within social environments both inside and outside the school.

Based on the results of a survey assessing the success of the collaborative learning method at MTs Al-Ilmu Ende involving 20 students, evaluation was conducted using a Likert scale instrument with five levels: 1 for "Strongly Disagree," 2 for "Disagree," 3 for "Neutral," 4 for "Agree," and 5 for "Strongly Agree." In this survey, each student was asked to rate the ten indicators of success for the implemented collaborative learning method.

Table 1. Survey Results on the Success of Collaborative Learning

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Success Indicator	Average Score (1–5)
Active Participation in Discussions	4.4
Ability to Solve Problems Collectively	4.3
Improvement of Communication Skills	4.2
Leadership and Task Management	4.1
Adaptability within the Group	4.5
Involvement in Scientific Discussion Forums	4.0
Effective Time Management	4.2
Increased Learning Motivation	4.6
Enhancement of Empathy and Solidarity	4.3
Application of Learning in Daily Life	4.4

The results of the analysis indicate that the indicator with the highest score is increased learning motivation (4.6), which signifies that the collaborative learning method successfully made students more enthusiastic about learning. This is followed by adaptability within groups (4.5), demonstrating that students are capable of adjusting to group dynamics. Meanwhile, active participation in discussions as well as the application of learning in daily life (4.4) reflect that students are more actively engaged in discussions and can implement learning in real-life contexts. The lowest score was observed in involvement in scientific discussion forums (4.0), indicating that encouragement is still needed to foster students' confidence in expressing ideas in scientific forums. Overall, success indicators such as the ability to solve problems collectively, communication, leadership, time management, and empathy showed significant improvement, reflecting the effectiveness of collaborative learning in enhancing various student skills.

Collaborative learning has a significant impact on various aspects of student learning and development. First, computer-based collaborative learning improves learning outcomes, including cognitive skills and academic achievement (Liu et al., 2025). Additionally, project-based learning models during the pandemic demonstrated increased student satisfaction and learning autonomy compared to traditional online methods (Kim, 2023). Second, collaborative learning fosters the development of twenty-first century skills such as communication, critical thinking, decision-making, leadership, and conflict management (Caratozzolo et al., 2021). Third, social and emotional benefits emerge through increased social interaction, motivation, and group cohesion (Mira et al., 2021), while online collaborative learning supports the professional development of student teachers (Lei and Medwell, 2021). Innovations such as Collaborative Learning by Teaching enhance motivation and academic achievement (Zhou and Tsai, 2023), whereas Virtual Collaborative Learning improves student engagement with appropriate pedagogical and technological support (Altmann et al., 2021).

### CONCLUSION

Collaborative learning at MTs Al-Ilmu Ende not only enhances student interaction but also cultivates positive habits in cooperation and joint problem-solving. This method helps students develop critical thinking skills, communication, and teamwork, thereby creating a more active learning environment that aligns with contemporary challenges. The research findings indicate that collaborative learning has a positive impact on students' cooperative abilities, with an overall average score of 4.3. The majority of students experienced benefits from this method, particularly in terms of learning motivation, active participation in discussions, and adaptability within groups. They felt more comfortable working in teams, exchanging ideas, and assuming greater responsibility for their learning outcomes. However, although this method is effective in improving cooperation and student engagement, certain aspects require improvement, especially in scientific discussion forums. Student involvement in academic forums needs to be enhanced so that they become more confident in presenting ideas and arguments scientifically. Therefore, supportive strategies such as additional guidance, presentation training, and encouragement from teachers to involve students more frequently in formal discussions are necessary. With these measures, collaborative learning can further enhance students' social and academic skills comprehensively, preparing them to face future educational and life challenges.

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### **AUTHOR CONTRIBUTIONS**

Author 1 : Design, theoretical framework, data analysis Author 2 : Data collection, management, and interpretation

Author 3 : Writing, editing, reporting, and publication of the research Author 4 : Research instruments, validation of research results

#### **REFERENCES**

Adawiyah, R., & Jennah, L. (2023). Implementasi pembelajaran Kolaboratif Dalam Meningkatkan Maharaoh Kitabah Siswa Madrasah Aliyah. Jurnal Educatio, 09(02), 778 – 784.

- Altmann, M., Clauss, A., & Schoop, E. (2021). Virtual collaborative learning during COVID19 Lessons learned in practice. In P. Doucek, G. Chroust, & V. Oskrdal (Eds.), *IDIMT 2021 Pandemics: Impacts, Strategies and Responses, 29th Interdisciplinary Information Management Talks* (pp. 467–474). Johannes Kepler Universitat Linz.
- Amiruddin. (2019). Pembelajaran kooperatif dan kolaboratif. *Journal of Education Science (JES, 5*(1), 24–32.
- Anwar, F., Faruza, S., & Gusmaneli, G. (2024). Strategi pembelajaran collaborative learning dalam meningkatkan kemampuan kerjasama dan komunikasi dalam pembelajaran PAI. *Harmoni Pendidikan: Jurnal Ilmu Pendidikan,* 1(2), 165–175. https://doi.org/10.62383/hardik.v1i2.218
- Caratozzolo, P., Friesel, A., Randewijk, P. J., & Navarro-Duran, D. (2021). Virtual globalization: An experience for engineering students in the Education 4.0 framework. In *ASEE Annual Conference and Exposition, Conference Proceedings* (Virtual, Online, July 26–29, 2021). American Society for Engineering Education.
- Damanik, F. H. S. (2023). Pengembangan model pembelajaran kolaboratif untuk pendidikan sosiologi dan antropologi di era digital. *Prosiding Ilmu Pendidikan dan Keguruan: Tantangan, Peluang Pendidikan dan Pembelajaran di Era Society 5.0, 1,* 1-18.
- Fadilah. (2017). Pengaruh Model Discovery Learning Dan Kerjasama Siswa Terhadap Penguasaan Konsep Siswa Di Universitas PGRI Kanjuruhan Malang. Terapan Jurnal Sains & Teknologi, 04(01), 42 47.
- Farizky, A. P., Prasetyo, Z. K., & Susilowati. (2018). Upaya Meningkatkan Kemampuan Kerjasama Siswa Dan Hasil Belajar Kognitif Dalam Pembelajaran IPA Dengan Model Pembelajaran Kooperatif Tipe Teams-Games-Tournament Di SMPN 1 Mungkid Kelas VII D. E-Journal Pendidikan IPA, 07(01), 63 68.
- Fathimatuzzahrah, A. (2020). Keefektifan Layanan Bimbingan Klasikal Dengan Teknik STAD Untuk Meningkatkan Kemampuan Kerjasama Dalam Penyelesaian Studi Siswa. Jurnal Basicedu, 02(01), 01 07.
- Goloa, A. P., Setiawati, R., & Nursilah. (2023). Meningkatkan Kerjasama Siswa Melalui Metode Snowball Throwing Dalam Materi Pembelajaran Unsur Pendukung Tari Kelas X MIPA 4 SMA Negeri 2 Depok Tahun 2023. Jurnal Pendidikan Tari, 04(01), 44 58.
- Identif. (2025, Februari 19). Metode pembelajaran kolaboratif: Kunci kerjasama kelompok. Identif. <a href="https://www.identif.id/metode-pembelajaran-collaborative-learning-untuk-kerjasama-dalam-kelompok/">https://www.identif.id/metode-pembelajaran-collaborative-learning-untuk-kerjasama-dalam-kelompok/</a>
- Johnson, D. W., & Johnson, R. T. (2020). The impact of cooperative learning on self-directed learning. Journal of Educational Psychology, 112(5), 993–1004. https://doi.org/10.1037/edu0000411
- Kim, M.-S. (2023). Lessons from on-line and off-line PBL in an engineering economics course under the Covid-19 pandemic. *Global Journal of Engineering Education*, 25(1), 12–20. World Institute for Engineering and Technology Education.
- Kumparan. (2021, Juni 4). Manfaat dan contoh kerjasama di sekolah yang dapat menumbuhkan rasa persaudaraan. Kumparan. <a href="https://kumparan.com/berita-hari-ini/manfaat-dan-contoh-kerjasama-di-sekolah-yang-dapat-menumbuhkan-rasa-persaudaraan-1vsPHBRL1zp">https://kumparan.com/berita-hari-ini/manfaat-dan-contoh-kerjasama-di-sekolah-yang-dapat-menumbuhkan-rasa-persaudaraan-1vsPHBRL1zp</a>
- Kustumati, E. C., Prihandono, T., & Supriadi, B. (2012). Penrapan Model pembelajaran Kolaboratif Dengan Media Sederhana Pada Pembelajaran Fisika Di SMP. Jurnal Pembelajaran Fisika, 01(02), 200 205.

- Kyndt, E., Raes, E., Lismont, B., Timmers, F., Cascallar, E., & Dochy, F. (2021). A meta-analysis of the effects of face-to-face cooperative learning. Review of Educational Research, 91(2), 174–215. <a href="https://doi.org/10.3102/0034654321998074">https://doi.org/10.3102/0034654321998074</a>
- Laal, M., & Ghodsi, S. M. (2020). Benefits of collaborative learning in enhancing students' satisfaction. Journal of Education and Learning, 9(3), 226–235. <a href="https://doi.org/10.5539/jel.v9n3p226">https://doi.org/10.5539/jel.v9n3p226</a>
- Lei, M., & Medwell, J. (2021). Impact of the COVID-19 pandemic on student teachers: How the shift to online collaborative learning affects student teachers' learning and future teaching in a Chinese context. *Asia Pacific Education Review*, 22(2), 169–179. <a href="https://doi.org/10.1007/s12564-021-09686-w">https://doi.org/10.1007/s12564-021-09686-w</a>
- Liu, Y., Liu, W., Xu, E., Wang, W., & Zhuang, K. (2025). A meta-analysis of the effectiveness of computer-supported collaborative learning in enhancing students' learning outcomes. 2025 7th International Conference on Computer Science and Technologies in Education (CSTE 2025), 123–127. Institute of Electrical and Electronics Engineers Inc. <a href="https://doi.org/10.1109/CSTE64638.2025.11092006">https://doi.org/10.1109/CSTE64638.2025.11092006</a>
- Mimhamimdala, F., Neviyarni, & Nirwana, H. (2022). Populer learning theory: Collaborative learning. *Eductum: Jurnal Literasi Pendidikan, 1*(2), 292–302. https://doi.org/10.56480/eductum.v1i2.751
- Mira, H.-H., Chaker, R., Impedovo, M., & Nady, H. (2025). Review of research on the outcomes of embodied and collaborative learning in STEM in higher education with immersive technologies. *Journal of Computing in Higher Education*, 37(3), 1161–1198. https://doi.org/10.1007/s12528-024-09418-0
- Mursid, R., Muslim, M., & Farihah, F. (2023). Collaboration-based development model e-learning on course learning achievements working skills. *International Journal of Instruction*, 16(2), 307–318. <a href="https://doi.org/10.29333/iji.2023.16218a">https://doi.org/10.29333/iji.2023.16218a</a>
- Nurpaidah, S. (2017). Penerapan metode pembelajaran kolaboratif untuk meningkatkan aktivitas dan hasil belajar siswa pada materi koloid kelas XI IPA 1 SMA Negeri 3 Watampone. *Jurnal Chemica*, 18(2), 30–42.
- Porkodi, S., Saranya, R., Sultana, A., & Mittal, P. (2023). Assessing the impact of collaborative learning practices on competency development in entrepreneurship program: A study of higher education students in Delhi NCR region of India. *Journal of Information and Knowledge Management*, 22(5), Article 2350021. https://doi.org/10.1142/S0219649223500211
- Prabandari, I. R., & Fidesrinur. (2019). Meningkatkan Kemampuan Bekerjasama Anak Usia 5 6 Tahun Melalui Metode Bermain Kooperatif. Jurnal AUDHI, 01(02), 96 105.
- Puspitasari, N. I., Rinanto, Y., & Widoretno, S. (2019). Peningkatan keterampilan kerjasama peserta didik melalui penerapan model group investigation. Bio-Pedagogi: Jurnal Pembelajaran Biologi, 8(1), 1–5. <a href="https://doi.org/10.20961/bio-pedagogi.v8i1.35544">https://doi.org/10.20961/bio-pedagogi.v8i1.35544</a>
- Putri, N. M., Hakim, L. E., & Ristanto, R. H. (2025). Studi literatur penerapan Project-Based Learning (PjBL) pada pembelajaran kimia. Ideguru: Jurnal Karya Ilmiah Guru, 10(1), xx-xx. https://doi.org/10.51169/ideguru.v10i1.1251
- Rahayu, A. P., Nisak, H. K., Samuji, S., Wahib, A., & Besari, A. (2024). Inovasi metode pembelajaran kolaboratif di era digital: Studi kasus perguruan tinggi swasta Magetan. *Edu Cendikia: Jurnal Ilmiah Kependidikan,* 4(2), 368-379. <a href="https://doi.org/10.47709/educendikia.v4i02.4450">https://doi.org/10.47709/educendikia.v4i02.4450</a>
- Rizma, P. (2022, September 22). Mengapa siswa harus kerjasama di sekolah? Ini penjelasannya. SMA Dwiwarna. https://www.smadwiwarna.sch.id/mengapa-kerjasama-di-sekolah-sangat-diperlukan/

- Rosita, I., & Leonard. (2015). Meningkatkan Kerjasama Siswa Melalui Pembelajaran Kooperatif Tipe Think Pair Share. Jurnal Formatif 03(01), 01 10.
- Selvi, S. N. M., Ahmad Syachruroji, & Siti Rokmanah. (2023). Pembelajaran Kolaboratif Untuk Peningkatan Keterampilan Sosial Siswa Sekolah Dasar. *Jurnal Dunia Pendidikan*, 4(1), 130-135. <a href="https://doi.org/10.55081/jurdip.v4i1.1465">https://doi.org/10.55081/jurdip.v4i1.1465</a>
- Slavin, R. E. (2021). Cooperative learning and academic achievement: Why does groupwork work? Anales de Psicología, 30(3), 785–791. <a href="https://doi.org/10.6018/analesps.30.3.201201">https://doi.org/10.6018/analesps.30.3.201201</a>
- Supratiningsih, S., Dafik, D., & Farisi, M. I. (2021). An analysis of STAD cooperative learning implementation and its effect on the collaborative skill in solving the problems of addition and subtraction. *Journal of Physics: Conference Series*, 1839(1), 012037. https://doi.org/10.1088/1742-6596/1839/1/012037
- Tran, V. D. (200). The effects of cooperative learning on academic achievement and knowledge retention. International Journal of Higher Education, 3(2), 47–63. https://doi.org/10.5430/ijhe.v3n2p131
- Ulfiana, E., & Asnawati, R. (2018). Pengaruh pembelajaran kolaboratif kontekstual terhadap peningkatan kemampuan pemahaman konsep matematis siswa. *Jurnal Elektronik Pembelajaran Matematika*, 5(2), 141-147. http://jurnal.uns.ac.id/jpm/article/viewFile/26040/18258
- Warsah, I., Morganna, R., Uyun, M., Hamengkubuwono, H., & Afandi, M. (2021). The impact of collaborative learning on learners' critical thinking skills. International Journal of Instruction, 14(2), 443–460. <a href="https://doi.org/10.29333/iji.2021.14225a">https://doi.org/10.29333/iji.2021.14225a</a>
- Wati, E. K., Maruti, E. S., & Budiarti, M. (2023). Aspek Kerjasama Dalam Keterampilan Sosial Siswa Kelas IV Sekolah Dasar. Jurnal Ilmiah Pendidikan Guru Sekolah Dasar, 04(02), 97 114.
- Yennita, Y., Al Fatihah, A., Zulirfan, Z., & Osman, K. (2024). The change in students' communication and collaboration skills through time token cooperative learning model. *Jurnal Pendidikan IPA Indonesia*, 13(2), 313–324. https://doi.org/10.15294/n77t7q82
- Zakaria, E., & Iksan, Z. (2020). Promoting cooperative learning in science and mathematics education: A Malaysian perspective. Eurasia Journal of Mathematics, Science and Technology Education, 16(10), DOI: 10.12973/eimste/75372
- Zhou, X., & Tsai, C.-W. (2023). The effects of socially shared regulation of learning on the computational thinking, motivation, and engagement in collaborative learning by teaching. *Education and Information Technologies*, 28(7), 8135–8152. <a href="https://doi.org/10.1007/s10639-022-11527-1">https://doi.org/10.1007/s10639-022-11527-1</a>