The effect of cooperative learning model on elementary school students' learning motivation

Evi Rizqi Salamah 1, Zuni Eka Tiyas Rifayanti 2, Wulan Trisnawaty 3

1 Universitas Hasyim Asy’ari Jombang, Indonesia
2 STKIP Bina Insan Mandiri, Surabaya, Indonesia
3 STKIP PGRI Pacitan, Pacitan, Indonesia

Corresponding author’s e-mail: wulantrisnawaty@stkippacitan.ac.id

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- cooperative learning
- learning motivation
- elementary school students'

Abstract
Solid motivation has a positive impact on learning achievement and student attainment. This study aimed to determine the impact of cooperative learning on learning motivation of grade IV students in Mojokerto, involving 72 elementary school students. The research method used was quantitative using Comparison-Group Design. The results showed significantly higher student learning motivation in the experimental group than in the control group. Cooperative learning was applied for the experimental group, while lecture-based teaching was used in the control group. Implications for innovation in teaching methods and further research are suggested to further popularize cooperative learning for better learning outcomes.

INTRODUCTION
Background of the Study

Cooperative learning is a teaching method in which there are small groups, and students will be able to support each other to understand the lesson (Ismiyanti, 2016). There are five components of cooperative learning: cooperation, positive interaction tendencies, individual responsibility, development of interpersonal and social skills, and quality of group performance. Cooperative learning can improve students' academic results, relational skills, and working mindset because students can collaborate with other group members (Maulidiana et al., 2021). Meanwhile, the discussion in cooperative learning can be a more effective teaching method for teachers to improve students' abilities, in this case, learning outcomes. However, in
practice, it is expected to use traditional teaching methods such as lecture-based and demonstration-based, and less competitive assignments are used in schools worldwide (Sukma et al., 2022).

Cooperative learning encourages students to collaborate and share goal achievement and learning motivation, making it a more beneficial alternative to lecture-based teaching (Tran, 2019). Cooperative learning can also improve relationships between students and increase individual responsibility for learning (Hardaningtiastuti, 2018), self-esteem, teamwork, and learning skills (Azian, Mellon, Ramli, & Yusup, 2018; Johnson & Johnson, 2006; Slavin, 2011). Cooperative learning has been known to increase student learning motivation (Demitra & Sarjoko, 2017).

Motivation is considered an indispensable element that provides guidance, inspiration, and constructive maintenance of attitudes toward a common goal (Koca & Ph, 2016). Ozbey & Koycegiz (2019) argued that motivation includes three main elements: elements of value (intrinsic and extrinsic goal orientation and task value), elements of self-efficacy (control perspective, individual perception of learning and performance), and elements of effectiveness (test anxiety). Intrinsic goal orientation refers to a student’s willingness to take part in a task or not because of the task’s difficulty, curiosity and ability. Extrinsic goal orientation considers whether students want to participate in a task because of value, incentives, performance, and assessment. Task value is the student's judgment regarding the task's attractiveness, importance, and usefulness. Self-efficacy for learning and performance is the expectation of learning outcomes and execution of assigned tasks for a typical project.

Cooperative learning has been connected with better social networks, and the development of mindset in student associations is very supportive, as are attitudes, skills, and self. Several vital studies (Ekimova & Kokurin, 2015) have proven that in cooperative learning, students show personal performance in academic areas that are better with collaboration than individualistic learning. Social collaboration has been known as one of the learning methods that promote achievement, quality, and existence (Salamah, 2021). Cooperative learning also increases interconnection between students compared to competitive or individualistic learning (Salamah, 2022). The positive relationship increases students’ motivation and perseverance to achieve a common goal. In addition, cooperative learning improves learning attitudes compared to competitive or individualistic learning environments (Sulisto & Haryanti, 2022). Cooperative
learning also develops social skills, problem-solving, critical thinking, and interpersonal skills, especially when students share ideas during tasks during learning (Zumrotun et al., 2023).

Kagan, pointed out that collaborative learning between group members improves, and students feel more valued (Ismiyanti, 2020). The studies mentioned earlier have similar research results to previous studies Gillies, Nhu-Le, Vaughan, Zain, Subramaniam, Rashid & Ghani, which have shown that cooperative learning promotes advanced learning skills, better relationships among students, feeling more valued, and better learning attitudes (Cahyaningtyas et al., 2022). In summary, cooperative learning should be used effectively to increase students' engagement in learning to obtain better learning outcomes. Comparison studies between cooperative learning and traditional teaching methods have shown various things. Cooperative learning enhances students' positive attitudes to gain better understanding, knowledge and learning outcomes.

**Problem of the Study**

Based on the observation of fourth grade students, Mojokerto elementary school consists of various layers of society, religion, education, and different cultures. Therefore, a learning model that can bridge the diversity is needed. Cooperative learning is considered as a better approach to unify the differences that exist. In addition, not many studies have examined the effective benefits of cooperative learning in influencing student learning in the Mojokerto education system.

**Research's State of the Art**

Studi Nhu-Le, Thanh-Pham, Le, Tran & Lewis also used qualitative methods, survey methods to examine the impact of cooperative learning methods on Vietnamese EFL (English Foreign Language) students' learning attitudes and achievement (Afandi et al., 2020). The research findings mentioned above also support that cooperative learning approaches are effective in improving students' positive learning attitudes and academic achievement.

**Novelty, Research Gap, & Objective**

This study contributes to the literature with its empirical investigation of the effect of cooperative learning on primary schools in Mojokerto. So, in this study, the researcher attempted to investigate the effect of the cooperative learning model on the learning motivation of fourth-grade students. This was done because, from the results of interviews with teachers in one of the elementary schools in Mojokerto,
grade IV students have specificities compared to other grade students. They tend to have low motivation in learning and are prone to laziness and indiscipline. These grade IV students are transitioning from low to high grades in elementary school. In addition, according to Piaget, students aged 10-11 are at the concrete operational stage, so they need something tangible and concrete to understand the concept. Therefore, this experimental research is designed to state whether cooperative learning improves students' learning attitude and motivation more effectively than lecture-based learning at the elementary school level. It is also expected that the impact of cooperative learning can improve students' learning outcomes and their interpersonal relationships.

**METHOD**

**Type and Design**

This study used an experimental research design. The study involved Pre-test and post-test non-equivalent study (Ismiyanti, 2018). Comparison-Group Design was used to examine the causal relationship of two main variables: the treatment variable - cooperative learning, and the outcome variable - motivation.

**Data and Data Sources**

The sample used was 72 fourth grade students of an elementary school in Mojokerto. The first class (n1 = 36) was assigned as the experimental group, and the second class (n2 = 36) was assigned as the control group. The treatment group consisted of 36 students (29 girls and 7 boys), and with an average age of 10 years. The control group consisted of 36 (27 females and 9 males), and with an average age of 10 years. Students in both groups were asked to take a pre-test on motivation and learning responsibility before being given the treatment (use of cooperative learning method).

**Data Collection Technique**

In this study, data were obtained through observation and written tests. In observation, researchers observed students' motivation using motivation indicators adopted from Pintrich (Ulia, et al., 2019). Meanwhile, the written test questions were used to measure students' motivation in learning using the cooperative model.

**Data Analysis**

This study contributes to the literature with its empirical investigation of the effect of cooperative learning on primary schools in Mojokerto. So, in this study, the researcher attempted to investigate the effect of the cooperative learning model on
the learning motivation of fourth-grade students. This was done because, from the results of interviews with teachers in one of the elementary schools in Mojokerto, grade IV students have specificities compared to other grade students. They tend to have low motivation in learning and are prone to laziness and indiscipline. These grade IV students are transitioning from low to high grades in elementary school. In addition, according to Piaget, students aged 10-11 are at the concrete operational stage, so they need something tangible and concrete to understand the concept (Indriana et al., 2021). Therefore, this experimental research is designed to state whether cooperative learning improves students' learning attitude and motivation more effectively than lecture-based learning at the elementary school level. It is also expected that the impact of cooperative learning can improve students' learning outcomes and their interpersonal relationships.

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Number of items</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation of intrinsic purpose</td>
<td>4</td>
<td>0.72</td>
</tr>
<tr>
<td>Orientation of extrinsic purpose</td>
<td>4</td>
<td>0.69</td>
</tr>
<tr>
<td>Assignment scores</td>
<td>6</td>
<td>0.81</td>
</tr>
<tr>
<td>Element of Expectation; Belief Control</td>
<td>4</td>
<td>0.67</td>
</tr>
<tr>
<td>Self Esteem to study and work</td>
<td>8</td>
<td>0.78</td>
</tr>
<tr>
<td>Affective Element of Anxiety Test</td>
<td>5</td>
<td>0.71</td>
</tr>
</tbody>
</table>

To compare the group pre-test and post-test scores, the researchers used independent t-test samples. All of the data analysis indicated that the significance is on 0.05 level.

RESULT

This study used an experimental research design—the Pre-test-Post-test non-equivalent study. Comparison-Group Design was used to test the causal relationship of two main variables: the treatment variable - cooperative learning, and the outcome variable - motivation.

At the beginning of the semester, two classes at SDN Wringinrejo 2 were selected for nine weeks of learning—lecture-based learning for the control group
and cooperative learning for the experimental class. Before the treatment, both groups took a pre-test related to learning motivation.

The teacher lectured logically to teach the students in the control group. Students in this class learn the lesson with the rest of the class. In the experimental group, the teacher used cooperative learning to guide students to learn the entire content of the lesson. In this cooperative learning group, the lecturer performed nine steps as follows: (1) the teacher conveys the learning material and the purpose of the learning content, (2) the teacher conveys what will be learned and the expected learning outcomes, (3) the teacher assigns students to groups, (4) the teacher asks students to get into the groups that the teacher has made, (5) students receive learning materials from the teacher, (6) students investigate and analyze their learning materials to acquire new materials and knowledge, (7) students support each other and exchange knowledge about learning materials, (8) students present their understanding of the lesson to all students in the class, and (9) the teacher assesses students' understanding through their presentations.

The above 9-step procedure was implemented nine times in each lesson on any material. During data collection, the two groups simultaneously attended separate classes with the same learning materials. Then, after nine weeks had passed, a post-test was conducted to measure the motivation of all students from both groups after the treatment.

The t-test analysis showed no statistically significant difference in the pre-test scores of the motivation component between the control group and the experimental group. However, a t-test analysis of the post-test scores revealed a significant difference between the experimental and control groups on the motivation component (Table 3). Examination of the mean scores showed that the motivation component of the experimental group achieved a significantly higher overall score than the control group.
Table 2. Result of independent t-test between groups on post-test scores

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Eksperimental Group</th>
<th>Control Group</th>
<th>t Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td><strong>Element of Scoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation of intrinsic purpose</td>
<td>4.31</td>
<td>.56</td>
<td>4.01</td>
<td>.57</td>
</tr>
<tr>
<td>Orientation of extrinsic purpose</td>
<td>4.33</td>
<td>.52</td>
<td>3.97</td>
<td>.56</td>
</tr>
<tr>
<td>Assignment scores</td>
<td>4.12</td>
<td>.59</td>
<td>3.68</td>
<td>.49</td>
</tr>
<tr>
<td><strong>Element of Expectation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belief Control</td>
<td>4.47</td>
<td>.51</td>
<td>4.03</td>
<td>.52</td>
</tr>
<tr>
<td>Self Esteem to Learn and Work</td>
<td>4.51</td>
<td>.58</td>
<td>4.07</td>
<td>.56</td>
</tr>
<tr>
<td><strong>Affective Element</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety test</td>
<td>2.11</td>
<td>.49</td>
<td>3.12</td>
<td>.52</td>
</tr>
</tbody>
</table>

*Significant difference (p < 0.05)

The results support the hypothesis that students taught with cooperative learning methods have better motivation and better learning outcomes than students taught using the lecture method.

DISCUSSIONS

The findings showed frequent collaborative interactions between students when working on tasks the teacher gave, and student activeness increased in the experimental group. Sulisto & Haryanti (2022) argued that students' interdependent social relationships lead to collaborative student interactions. With this collaborative interaction, students' actions in the group affect each other's learning goals through cooperative situations (Mustajab & Fatmaryanti, 2013).

Students in collaborative groups have more opportunities for mutual support, resource exchange, better interaction, and mutual influence which increases higher motivation for them than the control group (Ozbey & Koycegiz,
Furthermore, cultural and social interactions in an active learning environment produce cognitive processes (Ismiyanti et al., 2023). Therefore, frequent reciprocal interactions between group members allow students to improve new knowledge based on the knowledge understood in collaborative interactions for a given task.

In cooperative groups, students develop their potential by effectively observing and imitating higher positive behaviors that students want (Masrur et al., 2023). The same research also resulted from constructivist learning theory supporting that students can manage the construction of their own meaningful knowledge through interacting with their environment (Prasetya et al., 2023). Constructivist perspectives also share that students' motivation increases as they actively acquire their knowledge. Result of this study consistently emphasize previous study Doymus, Karacop, & Simsek, Sahin, suggesting that assignments in cooperative learning could improve better motivation for students (Cahyaningtyas et al., 2019).

Findings from other studies Nhu-Le, Le, Sahin, Thanh-Pham, Tran & Lewis, pointed out that most students liked working, discussing, sharing information, teaching, helping each other, and enjoying the context of cooperation (Ulia, KD, et al, 2019). This finding is significantly consistent with previous research which argues that students in cooperative learning groups achieve better interaction between each other (Sepahpour, 2015) and improve learning skill and self-esteem (Kılıç & Gungor Aytar, 2017). In cooperative groups, students have more opportunities to improve interpersonal skills (Indriyani, 2021) consider various solutions from different points of view, and experience achievement in learning Moore which results in these positive outcomes. In short, students' social, academic, and psychological success brings a positive impact of attitude in learning (Lestari, 2019).

Cooperative learning encourages competition is used to motivate student learning rather than academic cooperation and engagement has been widely studied for its positive impact on student learning in higher studies. Slavin argues that students' positive motivation in cooperative learning is an indispensable component that supports successful learning outcomes. In small groups, students clearly recognize the importance of teammates' contribution to the success of the common goal; therefore, they tend to support more for each other's learning (Ismiyanti & Afandi, 2022).
Cooperative learning also develops student self-esteem, and motivates student participation. Slavin emphasizes better learning outcomes with whole-group cooperative efforts (Ismiyanti, 2016). Few previous studies, such as one conducted by Heleen dan Arnold, found that students in groups have better cooperation and engagement can solve problems together more effectively (Cahyaningtyas et al., 2022). By helping each other, students create a collaborative community that better enhances each member's performance. Cooperative learning strengthens students' motivation by offering more freedom - a great motivator for their learning achievement. In cooperative learning, students can not only actively participate in the learning process but also in coordinating classroom processes and curriculum construction. Cooperative learning empowers better motivation and positive attitudes for learners.

Johnson & Johnson support the strengthening of positive interactions between students, teachers and peers (Ismiyanti, 2015). Ismiyanti also emphasized that teacher support increases students' ability confidence, and interest in learning, which indirectly contributes to better student academic achievement. In cooperative learning, communication is opened. Students have more opportunities to exchange their viewpoints and collaborate with other students and their teachers in an intense and personal way. Teachers professionally create natural socialization with students in cooperative learning activities. During classroom activities teachers observe student interactions, and facilitating the cooperative learning process, teachers can interact with each student personally.

This very open approach to the individual is important as a basis for teachers to provide appropriate support for each individual. With the recognition of the teacher's caring, students will be more involved in the classroom activities. Wentzel said that caring teachers demonstrate interaction and inspirational behavior in unique ways (Ismiyanti & Permatasari, 2021). Cooperative learning also improves teachers. Better learning outcomes can be achieved in a warm way; and provide autonomous support. Cooperative learning not only strengthens students' interpersonal skills, but also increases students' academic engagement and social motivation. While a lecture-only classroom inhibits students' interaction with their competitive environment; student cooperation promotes better social support and mutual interest in each other (Suganda, 2019).

In cooperative learning activities, students are well trained with the interpersonal skills needed to work together with deliberately mixed abilities of
group members. In this way, interaction and collaboration can be fostered among all members. In the industrial society 4.0, social skills in cooperative learning are essential to connect people and share new knowledge (Baroya, 2018). Getting along and cooperating with others is the most important knowledge and skill for students (Indriyani, 2021). When the world is moving so fast with so much new knowledge and skills; sharing and working together becomes even more important. Effective communication and collaboration towards a common goal within diverse social structures is critical to success (Suganda, 2019). Therefore, cooperative learning in schools is important to equip students with the skills necessary to achieve advanced levels of collaborative labor (Slavin, 2011).

In the field of science effective group work skills to achieve a common goal are essential. Most scientific discoveries are achieved through the contributions of members of a team of scientists towards a common value/goal. Obviously, complex problems can be solved more easily when done by a group of scientists with different backgrounds. It is important for schools not only to instruct students on scientific knowledge, but also to equip students with effective teamwork skills. That is why cooperative learning is an effective learning or teaching method to improve group work skills to effectively achieve a common goal (Lestari et al., 2019). Cooperative learning has supported increased attendance at learning activities and an interactive classroom environment that promotes higher student motivation, participation, and enjoyment (Oktiani, 2017). With more involvement and excitement in learning activities, students are more eager to participate in assigned tasks and common goals. With repeated cooperative learning, it will make students' learning experience more interesting and enjoyable for students (Astuti, 2021).

CONCLUSION

Cooperative learning with an interactive approach increases the motivation of fourth grade students at SDN Wringinrejo 2. This research has proven that frequent collaborative interactions between students in group learning can strengthen students’ mutual collaboration for better learning motivation. This research consistently supports the findings of previous research in different cultures that cooperative learning can be a more beneficial teaching. The findings of this study provide teachers in Mojokerto with more empirical support to implement effective interactive learning methods in teaching to increase students' learning motivation and better learning outcomes. Thus, cooperative learning is strongly proposed as a
more effective pedagogical teaching method in learning demanding educational innovation in Mojokerto, especially with the high demand for better learning motivation environment of students.

Cooperative learning makes students actively acquire and implement what they learn during the learning process, while lecture-based learning makes students passive during learning activities. Although the findings for this study support the positive impact of cooperative learning on students’ motivation, the sample of this study is still limited to only 72 students. Therefore, future research is suggested to examine the possible effects of cooperative learning on learning attitudes and motivation with a larger group of participants. Thus, the findings will be more reliable to generate the effect of cooperative learning widely. Coupled with very few studies investigating the effectiveness of cooperative learning for primary school students in Mojokerto, the findings of this study cannot conclude that cooperative learning is the best teaching method for all primary school levels in Mojokerto. Therefore, further research on cooperative learning at different levels of education in Mojokerto should be conducted.

REFERENCES


**Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be constructed as a potential conflict of interest.