The Implementation of Jigsaw Type of Cooperative Learning to Improve Students' Motivation and Learning Outcomes

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Abstrak

Motivasi belajar siswa yang rendah dapat berdampak pada menurunnya hasil belajar siswa. Sehingga dibutuhkan penerapan model pembelajaran khusus untuk meningkatkan motivasi belajar siswa. Oleh karena itu, penelitian ini bertujuan untuk meningkatkan motivasi dan hasil belajar siswa melalui model pembelajaran kooperatif tipe Jigsaw. Penelitian ini menggunakan penelitian tindakan kelas yang diadopsi dari model Kemmis dan McTaggart. Empat tahapan penelitian telah digunakan dalam dua siklus penelitian ini. Sebanyak 34 siswa kelas XI dilibatkan sebagai responden penelitian. Motivasi siswa dinilai menggunakan lembar observasi, dan hasil belajar dinilai menggunakan tes pilihan ganda. Data motivasi dan hasil belajar siswa dianalisis dengan menggunakan teknik persentase. Motivasi dan hasil belajar siswa meningkat secara signifikan setelah tindakan dua siklus. Motivasi siswa meningkat dari 66,25% pada siklus 1 menjadi 80,63% pada siklus 2. Sedangkan hasil belajar siswa meningkat dari 73,03 pada siklus 1 menjadi 82,26 pada siklus 2. Jadi, dapat disimpulkan bahwa penerapan model pembelajaran kooperatif tipe Jigsaw efektif. dalam meningkatkan motivasi dan hasil belajar siswa.
Kata Kunci: Pembelajaran Kooperatif, Hasil Belajar, Jigsaw, PTK.

Abstract

Low student learning motivation can have an impact on decreasing student learning outcomes. So it takes applying a special learning model to increase student motivation. Therefore, this study aims to increase student motivation and learning outcomes through the Jigsaw cooperative learning model. This study uses classroom action research adopted from the Kemmis and McTaggart models. Four stages of research have been used in these two research cycles. A total of 34 class XI students were involved as research respondents. Student motivation was assessed using observation sheets, and learning outcomes were assessed using multiple-choice tests. Motivational data and student learning outcomes were analyzed using percentage techniques. Motivation and student learning outcomes increased significantly after two cycles of action. Student motivation increased from 66.25% in cycle 1 to 80.63% in cycle 2. Meanwhile, student learning outcomes increased from 73.03 in cycle 1 to 82.26 in cycle 2. So, it can be concluded that the application of the cooperative learning model Jigsaw is effective in increasing student motivation and learning outcomes.
Keywords: Cooperative Learning, Learning outcomes, Jigsaw, CAR.

INTRODUCTION

The learning process is an essential part of the formal institution. Success in teaching is determined by how the process occurs (Sihaloho et al., 2020). In addition to the learning interaction process, it depends on the teacher and students. Teachers must create a learning atmosphere (Idhayani et al., 2020; Minsih & Galih, 2018), while students must have learning motivation (Saputra et al., 2018). Low history learning outcomes are caused by various connotations that may be intentionally or unintentionally conveyed by the teacher to students about history lessons directly or indirectly. In our education system, learning usually begins after students have mastered the subject. As a result, it is not surprising that many students struggle with the material even after graduating from college. It cannot be denied that the quality of education is still below national standards. The education budget is wasted by a school system that does not provide a complete education.

Efforts to improve the quality of education in schools require high innovation and creativity from teachers in dealing with all the obstacles and difficulties for the sake of the learning process (Iriansyah, 2020; Susilo & Sofiarini, 2020). Learning is an essential part of human life and cannot be removed from it, even from conception to death. This assertion illustrates how humans cannot be separated from the learning process, wherever they are or what they do. Learning is also a need that continues to grow along with the progress of the times because it is closely related to increasing technological advances. Advanced technology-enabled vehicles are provided for that development. This rapid development encourages educators to create and implement the learning that prioritizes topic mastery and uses effective learning techniques to support teaching and learning activities (Santyasa, 2018).

Teaching is a process in which teachers and students create a good environment for effective teaching and learning activities. Each learning requires a method that follows the objectives of the teaching itself (Widayati, 2012). Learning history develops the cognitive, affective, and psychomotor domains simultaneously. The lesson plan should cover all three of these domains. More is needed to rely on classroom learning to develop the affective and psychomotor domains. In contrast, the learning model is adjusted to the Basic Competencies that will be conveyed to students.

The ability to change a situation is provided by quality education (Asmawi, 2005). Students who receive a quality education are engaged in active learning and are responsible for developing their beliefs. Students who receive a quality education are engaged in active learning and are responsible for developing their beliefs. According to the 2003 National Education System Law, Education is a conscious and planned effort to create a learning atmosphere. The learning process helps students actively develop various potentials. Therefore, because education in this situation is a deliberate and planned effort, children must have fun learning, maximize their potential, produce human beings with character, have skills, and can participate fully in society (Junaedi, 2019; Kurniasari, 2020; Masgumelar & Mustafa, 2021).

One field of education that needs to be separated is the learning process. In the learning process, the character will be formed in students through changes in mindset and behavior (Aflisia & Hasanah, 2020). Its relation to the learning situation dramatically influences the learning process. Slameto (2013) said, "Complete and appropriate learning tools will facilitate the acceptance of learning materials provided to students." If students easily accept lessons and master them, then they will study more actively and progress. Therefore, teachers need to create conducive learning. The requirement to provide a meaningful learning experience is to actively invite students to participate in the learning process (Sarumaha et al., 2018). The teacher's interactive learning process will positively respond to students during the teaching and learning process.

Based on observations of the condition of class XI IPS 3 students of SMA Negeri 2 Banguntapan during the history learning process, increasing student involvement in learning still needs to be done. The learning consequences of observational data can also be more desirable or exactly as anticipated. Teachers must work to ensure that classroom activities offer the most opportunities for student experiences because their work in the

classroom involves more than simply disseminating information for the attainment of learning objectives. For teaching and learning activities to be carried out successfully, the teacher must be able to find methods and techniques to support his role.

Trisianawati et al. (2016) conducted a study to investigate the influence of the Jigsaw cooperative learning model on students' learning outcomes in the topic of vectors in a senior high school. The study utilized a quasi-experimental design and found a significant positive effect of the Jigsaw cooperative learning model on students' learning outcomes. Dianah (2018) explored the implementation of the Jigsaw learning model in a senior high school class and its impact on students' learning engagement. The study used a Lesson Study approach and found that the Jigsaw learning model improved student engagement. Tandi et al. (2020) examined the effects of the Jigsaw cooperative learning model combined with practical activities on students' learning outcomes in the topic of colligative properties of solutions in a senior high school. The study utilized a post-test-only control design and found that the Jigsaw cooperative learning model with practical activities significantly improved students' learning outcomes. Leksonowati (2019) investigated the effectiveness of the Jigsaw cooperative learning model and peer tutoring in enhancing students' learning outcomes on the topic of temperature and heat in a senior high school. The study used a true experimental design and found that the Jigsaw cooperative learning model and peer tutoring effectively enhanced students' learning outcomes. Tampubolon (2017) examined the influence of cooperative learning strategies and creativity on students' mathematics learning outcomes in a senior high school. The study utilized random cluster sampling and found that cooperative learning strategies and creativity significantly positively affected students' learning outcomes. Samsinah et al. (2018) studied the impact of the Jigsaw cooperative learning model on students' learning outcomes in history in a senior high school. The study used a quasi-experimental design and found that the Jigsaw cooperative learning model significantly improved students' learning outcomes. Palodang et al. (2017) investigated the effects of the Jigsaw cooperative learning model on students' learning outcomes in the hydrolysis of salts in a senior high school. The study utilized random sampling and found that the Jigsaw cooperative learning model positively impacted students' learning outcomes.

Limited research on the relationship between Jigsaw cooperative learning and motivation: While several studies have examined the impact of Jigsaw cooperative learning on learning outcomes (Hadijah, 2018; Sinaga et al., 2021), there is a research gap in understanding the relationship between this teaching method and student motivation. Further research is needed to explore how Jigsaw cooperative learning affects students' motivation to learn and how it can be used effectively to increase motivation.

Using the Jigsaw cooperative learning model can help students be more active and more easily understand concepts in historical material. Ultimately, it will increase student learning achievement in the history subject. Based on the above background, this study aims to implement jigsaw cooperative learning to increase student motivation and learning outcomes.

METHOD

The Kemmis and McTaggart method (Kemmis & McTaggart, 1988) was used to conduct Classroom Action Research (CAR). Planning, Action, Observation, and Reflection are the four stages of research used. This Classroom Action Research was divided into two cycles, each cycle meeting three times. The research was conducted for two months. The research cycle is depicted in Figure 1. A total of 34 students were involved in this action research, with 11 boys and 23 girls. All of these respondents came from XI IPS 3 SMA Negeri 2 Banguntapan.
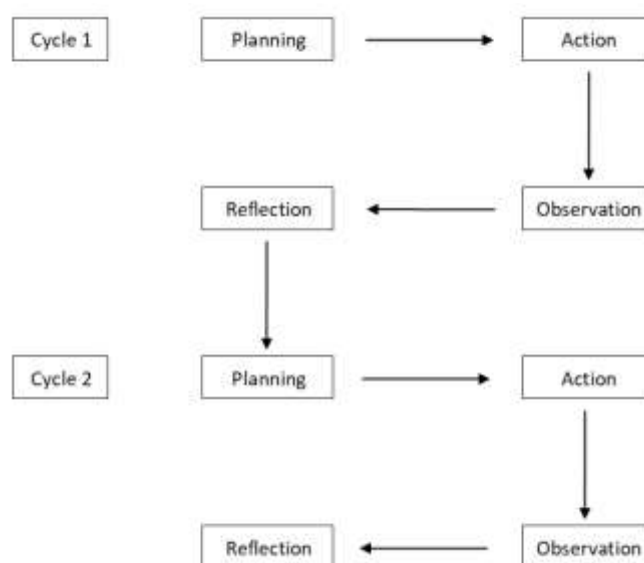
Figure 1. Class Action Research Cycle (Miskijem, 2022)

Student learning motivation was assessed using an observation sheet, and student learning outcomes were assessed using a multiple-choice written test. Motivation and student learning outcomes were analyzed using percentage techniques. Students are considered to meet completeness if the minimum test score is 65. The success of classroom action research refers to the criteria for a class average of 65 and classical completeness of 75%. Grouping student success is categorized into five levels, as shown in Table 1.

Table 1. Classification of student success

Percentage	Category
> 86	VG
76 - 85	G
60 -75	S
55 - 59	D
≤ 54	VL

Note: VB = Very Good, G = Good, S = Sufficient, D = Deficient, VL = Very Less

RESULT AND DISCUSSION

Results

Pre-Cycle

The percentage of students' learning motivation in the pre-cycle is shown in Table 2.

Table 2. Percentage of Pre-Cycle Student Learning Motivation

No.	Indicator	N	%
1	Seriousness to follow KBM	23	71.90%
2	Willingness to ask when encountering difficulties	7	21.90%
3	Desire to work independently	15	46.90%
4	Conducive learning environment	14	43.80%
5	Interesting learning activities	18	56.30%
		Average	48.10%

Table 2 shows that students' learning motivation is still low and is included in the very poor category. The average classical learning motivation in the pre-cycle is 48.10%. The highest motivation percentage is in item 1, "students' seriousness in participating in learning," of 71.90%. At the same time, the lowest percentage was item 2, "Students' willingness to ask questions when they encountered difficulties," of 21.90%.

The percentage of student learning outcomes in the pre-cycle is shown in Table 3.

Table 3. Student history learning outcomes in pre-cycle

Criteria	Achievement indicator	Pre-cycle Learning Outcomes	
		N	**%**
Complete	75%	8	23.5%
Not Completed	25%	26	76.5%
	Total	34	100%
Average		66.79	

Based on Table 3, the pre-cycle student learning outcomes did not meet the criteria. Fewer students complete than those who do not complete. The number of students who have completed eight people, or the equivalent of 23.5%. However, 26 students, or 76.5%, still need to complete it. The average class value of student learning outcomes is 66.79.

Based on the results of the reflection that has been done, motivation and student learning outcomes still need to be higher. So, action research needs to be carried out to cycle 1.

Cycle 1

The percentage of students' learning motivation in cycle 1 is shown in Table 4.

Table 4. Percentage of Student Learning Motivation Cycle 1

No	Indicator	N	%
1	Seriousness to follow KBM	26	81.25%
2	Willingness to ask when encountering difficulties	12	37.50%
3	Desire to work independently	24	75.00%
4	Conducive learning environment	21	65.63%
5	Interesting learning activities	23	71.88%
		Average	66.25%

Table 4 shows that students' learning motivation is in a good category. The average classical learning motivation in the pre-cycle is 66.25%. The highest motivation percentage is in item 1, "Students' seriousness in participating in learning," of 81.25%. At the same time, the lowest percentage is in item 2, "Students' willingness to ask questions when they encounter difficulties," of 37.50%.

The percentage of student learning outcomes in cycle 1 is shown in Table 5.

Table 5. Student history learning outcomes in cycle 1

Criteria	Achievement indicator	Cycle 1 Learning Outcomes	
		N	**%**
Complete	75%	18	52.9%
Not Completed	25%	16	47.1%
	Total	34	100%
Average		73.03	

Based on Table 5, student learning outcomes in cycle one did not meet the criteria because they were still in the good category. The number of students who have completed it exceeds those who still need to complete it. Eighteen students complete or equal to 52.9%. While the number of students who did not complete as many as 16 people or equivalent to 47.1%. The average class value of student learning outcomes is 73.03.

After the action activities were carried out in cycle 1, reflection and evaluation were carried out. The reflection and evaluation of cycle one activities show that learning motivation and student learning outcomes still need to meet the specified criteria. Therefore, action activities need to be continued in cycle 2.

Cycle 2

The percentage of students' learning motivation in cycle 2 is shown in Table 6.

Table 6. Percentage of Student Learning Motivation Cycle 2

No	Indicator	N	%
1	Seriousness to follow KBM	31	96.88%
2	Willingness to ask when encountering difficulties	17	53.13%
3	Desire to work independently	28	87.50%
4	Conducive learning environment	25	78.13%
5	Interesting learning activities	28	87.50%
		Average	80.63%

Table 6 shows that students' learning motivation is in a Good category. The average classical learning motivation in cycle 2 is 80.63%. The highest motivation percentage is in item 1, "Students' seriousness in participating in learning," of 96.88%. At the same time, the lowest percentage was in item 2 "Students' willingness to ask questions when they encountered difficulties" of 53.13%.

The percentage of student learning outcomes in cycle 2 is shown in Table 7.

Table 1. Student history learning outcomes in cycle 2

Criteria	Achievement indicator	Cycle 2 Learning Outcomes	
		N	%
Complete	75%	30	88.2%
Not Completed	25%	4	11.8%
	Total	34	100%
Average		82.26	

Based on Table 7, student learning outcomes in cycle two have met the criteria. The number of students who have completed it exceeds those who have not. Thirty students were complete or equivalent to 88.2%. While the number of students who completed less than four people or equivalent to 11.8%. The average class value of student learning outcomes is 82.26.

The results of the reflection carried out at the end of the implementation of cycle one show that the success criteria have met the specified standards. Therefore, it was concluded that the action activities were not continued to cycle 3.

Discussion

The Jigsaw type cooperative learning paradigm is used in classroom action research which aims to determine the increase in motivation and learning outcomes of class XI IPS 3 students at SMA Negeri 2 Banguntapan Bantul. This research was conducted in two cycles, with three meetings per cycle, all of which followed classroom action research guidelines. The researcher first made initial observations of teaching and learning activities to find out the conditions in the classroom through direct observation and interviews with teachers and students.

The next stage is for researchers to collaborate with subject teachers to learn to use the Jigsaw cooperative learning paradigm. As long as they carry out each cycle, teachers and researchers are involved in action planning, implementation, observation, and reflection. RPP, learning materials to be delivered, research tools, and learning media are all planned as part of the nursing actions of researchers and teachers.

When researchers and teachers began to implement their plans, they incorporated the Jigsaw cooperative learning model into the teaching and learning process. Researchers function as observers during teaching and learning activities, tracking the development of the learning process from beginning to end. After each cycle, students were asked to complete a motivational questionnaire. The Jigsaw cooperative learning paradigm was applied, and during the observation stage, researchers and teachers observed changes in children. The results of observation sheets, motivational surveys, and student learning evaluation test results after each cycle became the main focus of observation. The final stage of each cycle is when the teacher and the results of observation sheets, motivational surveys, and student learning evaluation test results after each cycle become the main focus

of observation. Teachers and researchers conduct analysis and reflection based on observations made after each cycle. The findings from these observations were analyzed to determine whether the steps taken can increase students' motivation and learning outcomes in history. When deciding whether or not to carry out the next action cycle, the findings from this analysis and reflection will be used as a guide.

Based on the findings of the analysis in cycles I and II, there was an increase in motivation and student learning outcomes in historical material in cycles I and II. At the end of each cycle, the findings of the observation sheets and evaluation tests showed improvement.

Pre-cycle observation revealed that students' learning motivation was still relatively low. This is supported by the subject teacher's comments that student commitment to learning history could be higher. However, towards the end of cycle 1, it was seen that the Jigsaw cooperative learning approach had increased students' learning motivation. Even more, than at the end of cycle 1, student motivation increased toward the end of cycle II.

The results of pre-cycle observations or before implementing the Jigsaw cooperative learning paradigm showed that the average for each indication of student learning motivation was still relatively high. This is because the contact between students and teachers needs to be increased, and learning is still one-way or teacher-centered. Most of the students quietly sat and listened. However, the aggregate average for each metric has increased due to the application of the Jigsaw cooperative learning model in cycles I and II. Students become more involved in discussions, take history lessons more seriously, and are taught to take responsibility for mastery of material because they understand how it will affect their future learning outcomes. This increase is influenced by participation in learning activities, where students share their learning experiences so that the information they learn can be understood and learning activities become more enjoyable. In addition, rewarding students with extra credit for presenting discussion results effectively motivate them to engage in active learning throughout the learning process.

The Jigsaw cooperative learning style can make the class lively, entertaining, and exciting. In this case, the rationale behind using Jigsaw cooperative learning is consistent with the approach (Sardiman, 2011). Giving plus points or student points and applause is one way to encourage academic motivation. The Jigsaw cooperative learning paradigm can encourage students to participate actively in their education. This will increase students' confidence in their skills and enthusiasm to engage in the learning process, in addition to giving them points or praise. This suggests that using an exciting learning style and rewarding students with praise or plus points will motivate them more.

Based on the findings of data analysis for each cycle, students of class XI IPS 3 at SMA Negeri 2 Banguntapan Bantul can get to know history better by applying the Jigsaw cooperative learning model. Increasing students' cognitive test scores and increasing pre-cycle, cycle 1, and cycle 2 mean scores showed increased student learning outcomes.

The percentage of student learning outcomes completed from the beginning of the cycle to the end also shows a significant increase. The percentage of students who completed the pre-cycle was significantly lower than the achievement indicators. However, in cycles 1 and 2, there was an increase in the percentage of student learning outcomes after the Jigsaw cooperative learning paradigm was applied.

After using the Jigsaw cooperative learning paradigm, student learning outcomes have increased overall. Some students still have to complete cycle II and achieve KKM, however. For students, scores to meet the KKM, educators and researchers offer remediation. These findings indicate that the Jigsaw cooperative learning model significantly improves learning outcomes and student achievement indicators.

After completing cycles I and II, the information obtained shows that applying the Jigsaw cooperative learning model can improve learning outcomes and learning motivation of class XI IPS 3 SMA Negeri 2 Banguntapan Bantul. This claim can be demonstrated by increasing student learning outcomes in all learning activities. Research findings on motivation show that each indicator of learning motivation that has been

identified has increased based on observations. All students experience increased motivation from pre-, cycles 1 and 2. This increase has exceeded achievement indicators. The learning outcomes of students who experienced an increase in the percentage of completeness in cycle II also experienced the same thing. The completeness of student learning outcomes in cycle II has increased and currently reaches 75% as an indicator of achievement.

The Jigsaw cooperative learning model can increase student learning motivation for several reasons supported by research. First, the Jigsaw model allows students to work in small, heterogeneous groups, where each group member is responsible for learning and mastering a particular part of the learning material. This creates a sense of responsibility and positive interdependence between students, which can increase their learning motivation (Putra et al., 2018; Riyanti, 2022).

In addition, the Jigsaw model also encourages students to share knowledge and information with other group members. In this sharing process, students can feel satisfaction and confidence when they can contribute meaningfully to their group. This can increase students' learning motivation because they feel valued and recognized by their peers (Hermanto, 2023).

Additionally, the Jigsaw model allows students to actively engage in their education. Students can discuss, ask questions, and interact with their peers in small groups. This activity can increase students' interest and involvement in learning, increasing their learning motivation (Imtikhanah, 2022; Resmi, 2022).

In addition, the Jigsaw model can also improve students' understanding of concepts. In research conducted by (Putra et al., 2018), it was found that students who studied with the Jigsaw model had a better understanding of concepts than those who studied with the direct learning model. A better understanding of concepts can give students self-confidence, increasing their learning motivation (Putra et al., 2018).

In another study conducted by Nashiroh et al. (2020), Octobrianta et al. (2017), and Uki and Liunokas (Uki & Liunokas, 2021), it was also found that the application of the Jigsaw model can improve cognitive learning outcomes and student learning motivation. The results of this study indicate that the Jigsaw model positively impacts students' learning motivation.

The results of pre-cycle observations, initial findings from questionnaire calculations, and cognitive tests were given to research participants before taking action into account when determining the size of achievement indicators in research. These findings are consistent with research from several previous academics (Heryekti Pujingsih, 2021; Laoli et al., 2022; Nopiyanto & Raibowo, 2020; Widarta, 2020).

This study collected data from observation methods, questionnaires, and cognitive tests. While this method provides useful information, various data collection methods such as interviews, reflective journals, or non-participatory observation can provide a more comprehensive understanding of student motivation and learning outcomes. In addition to observation methods, questionnaires, and cognitive tests, future research may consider using other methods such as interviews, reflective journals, or non-participatory observation. Combining various data collection methods can provide a more comprehensive picture of learning motivation and student learning outcomes.

CONCLUSION

Based on these findings, the Jigsaw cooperative learning model can increase student motivation and learning outcomes. Student motivation and learning outcomes increased significantly in each cycle. So, applying the Jigsaw cooperative learning model is suitable and suitable for increasing the motivation and learning outcomes of history students XI IPS 3 SMA Negeri 2 Banguntapan.

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