



Simultaneously Boosting Motivation and Learning Outcomes: A Collaborative Classroom Action Research on the Problem-Solving Model in Grade 8th Social Studies

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ABSTRACT

Purpose of the study: Low levels of student motivation and Social Studies learning outcomes at Junior high school 14 Madiun have been attributed to the predominance of teacher-centered instructional methods. This study aims to analyze the implementation of the Problem-Solving instructional model in enhancing students' motivation and Social Studies learning outcomes.

Methodology: A Classroom Action Research (CAR) design was employed in two collaborative cycles involving 32 Class VIII-B students. Data were collected through observation, testing, documentation, and field notes. Quantitative data were analyzed using percentages and descriptive statistics, while qualitative data were analyzed through data reduction, presentation, and conclusion drawing.

Main Findings: The implementation of the Problem-Solving model improved students' motivation and learning outcomes. Learning motivation increased from 62% in Cycle I to 78% in Cycle II, reaching the high category. The class average score rose from 65.6 in the pre-cycle to 73.8 in Cycle I and 82.5 in Cycle II, while classical mastery improved from 47% to 63%, and finally to 84% in Cycle II.

Novelty/Originality of this study: Unlike prior studies that examined motivation and learning outcomes separately, this study simultaneously investigates both variables within a single collaborative Classroom Action Research design, offering a holistic and replicable instructional framework. These findings provide practical guidance for teachers to implement the Problem-Solving model to improve students' learning motivation and Social Studies learning outcomes.

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1. INTRODUCTION

Education plays a fundamental role in the development of human civilization and in determining a nation's progress and competitiveness [1], [2]. It is not merely a process of transferring knowledge from educators to students but also a means of fostering character, personality, national identity, and civic

responsibility [3]. The quality of education directly influences the development of human resources by strengthening academic competence, critical thinking, and social responsibility [4]. In the context of formal education schools serve as the primary means of developing students' potential through effective, active, and meaningful learning processes. Therefore, learning activities need to be designed innovatively in order to increase student engagement and support the optimal achievement of educational goals [5].

Improving the quality of education is one of the key factors in developing competent and competitive human resources [4], [6]. One of the most effective ways to achieve this goal is by enhancing the quality of the learning process in schools. Successful learning is influenced not only by the availability of adequate facilities and infrastructure but also by teachers' ability to select and implement appropriate learning models, methods, and media that align with students' characteristics and learning objectives [7], [8]. In addition to facilitating knowledge acquisition, teachers play a crucial role as agents of value internalization by fostering students' character, personality, and social responsibility throughout the learning process [9]. Therefore, teachers are expected to design holistic, student-centered, conducive, and inclusive learning environments that encourage meaningful learning experiences [10]. Accordingly, the implementation of innovative and student-centered instructional strategies is essential to create active, effective, and meaningful learning. Furthermore, creative teachers who employ engaging learning methods, appropriate instructional media, and supportive interpersonal approaches can strengthen students' intrinsic and extrinsic learning motivation, promote active participation, and ultimately improve learning outcomes [11].

Learning motivation plays a central role in determining the success of the learning process. Students with high learning motivation are more likely to demonstrate enthusiasm, active participation, persistence, and enjoyment throughout learning activities, which ultimately contributes to better learning outcomes [12]. This finding is supported by [13], who reported that students with strong learning motivation exhibit greater focus, persistence, and readiness to engage optimally in the learning process. Besides motivation, students' active engagement in the learning process is another essential determinant of academic success. Student-centered learning approaches that encourage active participation, collaboration, and problem-solving have been consistently associated with higher learning motivation, deeper conceptual understanding, and improved academic achievement [14], [15].

Integrated Social Studies is a compulsory subject at the junior high school level that is expected to equip students to face the rapid development of science and technology. Social Studies learning is not only intended to deliver knowledge directly, but also to facilitate students in constructing their own understanding. However, in practice, classroom instruction is still predominantly teacher-centered, where teacher creativity and initiative are more emphasized than active student engagement in the learning process [11]. Based on the initial observation conducted in class VIII-B of Junior high school 14 Madiun, findings showed that Social Studies learning was still largely dominated by teacher-centered lectures and assignment-based activities. Students tended to be passive and acted merely as observers during the teacher's delivery of the material. This condition negatively affected students learning outcomes, as 17 out of 32 students (53%) had not yet achieved the Minimum Mastery Criteria (MMC), indicating that the quality of Social Studies instruction still needs to be significantly improved.

The identified problems highlight the importance of applying a learning model that effectively promotes students' active involvement in learning. The Problem Solving model is one such approach, emphasizing students' ability to identify, analyze, and systematically resolve problems [16], while developing critical, creative, and active thinking skills in generating solutions to real-life problems [17]. Research consistently shows that this model improves students' learning outcomes and thinking skills through direct engagement in inquiry and problem-solving activities [18]. As reported by Dewi [19], reported that its integration into Social Studies learning raised the class average score from 76.56 to 80.39 and classical mastery from 68.97% to 89.66% across two cycles, exceeding the MMC of 70 confirming the model's effectiveness in enhancing learning achievement.

Although the Problem-Solving model has been widely reported to improve students' learning outcomes, limited studies have examined its simultaneous effects on learning motivation and learning outcomes in junior high school Social Studies. Most previous studies investigated these variables separately, leaving a gap in understanding how a single instructional intervention can improve both outcomes concurrently. Therefore, this study addresses this gap by examining the effects of the Problem-Solving model on students' learning motivation and learning outcomes through a collaborative classroom action research design. The novelty of this study lies in providing an integrated instructional framework that supports more active, student-centered Social Studies learning.

Based on the explanation above, this study aims to (1) describe the implementation of the Problem-Solving model in Social Studies instruction, and (2) analyze its effectiveness in enhancing students' motivation and learning outcomes among Grade VIII students. This study seeks to answer the following research questions: (1) How is the Problem-Solving model implemented in Social Studies instruction to enhance Grade VIII students' motivation and learning outcomes? (2) To what extent does the implementation of the Problem-Solving model improve Grade VIII students' motivation and learning outcomes in Social Studies? This study is expected

to yield theoretical as well as practical insights that support the development of Social Studies learning that is more effective, meaningful, and student-oriented.

2. RESEARCH METHOD

This study employed a collaborative Classroom Action Research (CAR) design conducted in two cycles, each comprising four sequential stages: planning, action, observation, and reflection [20]. The collaborative design involved active cooperation between the researcher and the Social Studies teacher throughout the processes of planning, implementing, observing, and evaluating the learning process, with the overarching aim of improving students' motivation and Social Studies learning outcomes through the implementation of the Problem-Solving model.

The subjects of this study were 32 Grade VIII-B students of Junior high school 14 Madiun in the 2025/2026 academic year, comprising 16 male and 16 female students. The research was conducted at Junior high school 14 Madiun, located at Tulus Bakti Street No. 40, Taman Village, Taman District, Madiun City. Data were collected through three techniques. Observation was conducted passively using structured observation sheets to examine students' learning motivation during the instructional process, covering aspects of perseverance, interest, activeness, responsibility, and learning independence, rated on a 1–5 scale. Tests were administered at the end of each cycle to measure students' learning outcomes. Documentation was used to supplement the research data, including teaching modules, learning activity photographs, and other instructional documents [21].

Content validity of the learning motivation instrument was assessed by two experts, yielding feasibility scores of 92.86% and 96.42%, with a Content Validity Index (CVI) of 1.00. The reliability of the multiple-choice test instrument was examined using Cronbach's Alpha with a sample of 10 respondents, yielding a value of 0.719 across 10 items. Based on Guilford and Fruchter's [22], interpretation criteria, these results fall within the “very high” and “high” categories respectively, confirming that both instruments are valid and reliable for use in this study.

The study adopted the CAR procedure developed by [23], consisting of four iterative stages per cycle. In Cycle I, the planning stage involved the preparation of Social Studies instructional devices based on the Problem-Solving model, encompassing lesson plans, learning materials, observation sheets, and student worksheets. The action stage was conducted following the established steps of the Problem-Solving model [24], which include presenting authentic problems, identifying and formulating problems, collecting relevant information, developing alternative solutions, constructing systematic problem-solving procedures, and conducting class reflection. Throughout the implementation, the researcher conducted systematic observation of students' learning motivation using structured instruments. The reflection stage involved analyzing the collected data to evaluate the effectiveness of the implemented actions and to identify areas requiring improvement. Cycle II was implemented when the success indicators from Cycle I had not yet been achieved, following the same procedural stages with refinements based on the reflective findings of the preceding cycle to optimize the overall effectiveness of the learning process [25].

Data analysis in this study employed both quantitative and qualitative approaches. Quantitative data analysis was applied to process observational data on students' learning motivation using the percentage correction formula: $NP = (R/SM) \times 100\%$, where NP denotes the percentage score, R represents the obtained score, and SM refers to the maximum possible score. The resulting percentage was then classified according to the criteria established by [23], as presented in Table 1.

Qualitative data were analyzed using the Miles and Huberman model, involving three successive stages. The first of these, data reduction, involves the process of selecting, focusing, simplifying, and reorganizing raw field note data to preserve only those elements that are relevant to the aims of the study. The second stage, data display, focuses on organizing and presenting the reduced data in formats such as tables, charts, or narratives to support systematic interpretation. The final stage, conclusion drawing and verification, centers on interpreting the data's meaning and confirming findings through triangulation and repeated checking to guarantee validity and consistency [26].

Table 1. Criteria for Increasing Learning Motivation

Percentage (%)	Category
81–100	Very High
61–80	High
41–60	Moderate
21–40	Low
0–20	Very Low

3. RESULTS AND DISCUSSION

This classroom action research was implemented in two cycles involving Grade VIII-B students of SMPN 14 Madiun. Cycle I was carried out on March 10, 2026, while Cycle II was conducted on April 7, 2026. The findings indicate a progressive improvement in both students' learning motivation and Social Studies learning outcomes following the implementation of the Problem-Solving model.

Pre-Cycle

Prior to the implementation of the action, a pre-cycle observation was conducted to determine students' initial conditions. The Social Studies learning process was still dominated by the lecture method, causing students to remain passive during classroom activities. Students primarily listened to the teacher's explanation, took notes, and completed assignments without meaningful active involvement. This condition negatively affected both students' learning motivation and academic outcomes. The pre-test results revealed a class average score of 65.6, with the highest score of 80 and the lowest of 40. Of the 32 students, only 15 (47%) achieved mastery learning, while the remaining 17 students (53%) had not yet reached the MMC, indicating that instructional intervention was necessary.

Cycle I

At Cycle I, Social Studies learning was implemented using the Problem Solving model on the topic of Indonesia's natural resource potential. The learning process was carried out through a sequence of activities, including problem presentation, group discussion, information gathering, problem analysis, and presentation of discussion results.

The observation results showed that students learning motivation reached an average percentage of 62%, which was categorized as moderate. Among the indicators, interest in learning obtained the highest percentage of 64%, while student participation in learning activities showed the lowest percentage of 60%. Although students had begun to participate in group discussions, several students were still passive and lacked confidence in expressing their opinions. The evaluation results revealed that students' learning outcomes had improved compared to what was recorded before the cycle began. The class average score increased to 73.8, with the highest score of 90 and the lowest score of 50. A total of 20 students (63%) achieved mastery learning, while 12 students (37%) had not yet reached the MMC. However, the classical completeness had not yet met the predetermined target of 80%.

Based on the reflection of Cycle I, several obstacles were identified including students unfamiliarity with the Problem Solving model, low student engagement in discussions, and suboptimal teacher guidance and feedback during the learning process. Therefore, improvements were planned for Cycle II, such as providing clearer explanations of learning steps, increasing guidance during group discussions, and enhancing students motivation to encourage more active participation in learning activities.

Cycle II

In Cycle II, the learning process was implemented by improving the shortcomings identified in Cycle I. The material discussed focused on the positive and negative impacts of natural resource utilization on community life and national development. In the course of the learning activities, students showed increased participation in group discussions, problem analysis, and the delivery of their group work presentations.

Observation results showed a notable increase in students' learning motivation, reaching an average of 78% classified as high. The indicators of interest in learning and responsibility for tasks obtained the highest percentage of 80%, while perseverance and learning independence reached 75%. Overall, students demonstrated greater confidence, were more active in asking questions, and showed higher enthusiasm throughout the learning process. The improvement in learning motivation was accompanied by a significant advancement in students' learning outcomes. The class average score rose to 82.5, with the highest score of 90 and the lowest score of 60. A total of 27 students (84%) achieved mastery learning, while 5 students (16%) had not yet met the criteria. The classical mastery level of 84% met the predetermined success indicator of a minimum of 80%.

According to the reflection results, the use of the Problem-Solving model in Cycle II successfully improved students' motivation as well as their overall performance in Social Studies. Students became more active in discussions, more confident in expressing their opinions, and better able to understand the learning material. Since all success indicators were achieved, the research was concluded at Cycle II.

Improving Students' Learning Motivation through the Problem-Solving Model

In Cycle I, the implementation of the Problem-Solving model was not yet optimal because many students were still unfamiliar with student-centred learning that required active participation and critical thinking. Several students remained passive during discussions, lacked confidence in expressing their opinions, and experienced difficulties collaborating with their peers. In addition, limited teacher guidance and feedback reduced students' understanding of the problem-solving procedures. After instructional improvements were

introduced in Cycle II, including clearer explanations, more intensive facilitation, and consistent motivational feedback, students demonstrated greater participation, confidence, enthusiasm, and responsibility during learning activities.

The improvement in students' learning motivation indicates that the Problem-Solving model created a more active and meaningful learning environment by encouraging students to identify problems, exchange ideas, evaluate alternative solutions, and draw conclusions collaboratively. Rather than functioning as passive recipients of information, students became active participants in constructing knowledge. These findings are consistent with Agrifina et al., who stated that learning motivation is reflected in students' perseverance, active participation, and interest in learning [12]. They are also supported by Self-Determination Theory, which suggests that students' intrinsic motivation increases when learning environments fulfil the psychological needs for autonomy, competence, and relatedness [27]. By providing opportunities to make decisions, collaborate with peers, and solve authentic problems, the Problem-Solving model strengthens students' ownership of learning and encourages sustained engagement.

The present findings are further supported by previous studies showing that the Problem-Solving model enhances students' behavioural, cognitive, and emotional engagement, including participation in discussions, collaboration, responsibility, critical thinking, receptiveness to feedback, and creativity [28]. Its effectiveness can be attributed to the use of contextual and authentic problems that encourage students to connect prior knowledge with new experiences, making learning more relevant and meaningful [29]. Similar findings have been reported in Social Studies education, where contextual learning improved students' engagement and conceptual understanding [30]. A recent literature review also identified contextual learning, learner autonomy, teacher support, and collaborative interaction as key factors influencing students' learning motivation across educational settings [31].

Another important finding is that students' motivation improved progressively across the two classroom action research cycles, indicating that successful implementation of the Problem-Solving model requires continuous instructional refinement. More structured teacher guidance, effective scaffolding, and constructive feedback enabled students to gradually adapt to student-centred learning and participate more confidently. This finding is consistent with recent studies reporting that authentic problem-solving activities are most effective when accompanied by adequate instructional support that promotes students' autonomy, competence, and relatedness [32].

Similar improvements have also been reported in classroom action research using project-based learning and image-assisted learning, where structured teacher facilitation progressively increased students' engagement [33], [34]. Furthermore, contextual learning has been shown to stimulate curiosity, intrinsic motivation, and deeper understanding by encouraging students to integrate prior knowledge with new information, ultimately improving both learning motivation and academic outcome [35], [36]. Overall, these findings suggest that the Problem-Solving model effectively enhances students' learning motivation by integrating authentic problem-solving, collaborative learning, and continuous teacher support within a student-centred learning environment.

Improving Students' Social Studies Learning Outcomes through the Problem-Solving Model

Students' learning outcomes showed initial improvement in Cycle I compared with the pre-cycle condition; however, the predetermined success indicators had not yet been achieved. Several students still experienced difficulties in understanding problems, analysing information, and formulating appropriate solutions because they were adapting to the Problem-Solving model, which requires active participation and critical thinking. In Cycle II, the learning process became more effective after the teacher provided clearer guidance throughout each stage of problem solving, from problem identification and information gathering to evaluating solutions and drawing conclusions. More active group discussions and improved collaboration enabled students to develop a deeper understanding of the Social Studies content, resulting in a significant improvement in learning outcomes.

The improvement in learning outcomes indicates that the Problem-Solving model facilitates meaningful learning by engaging students in authentic learning experiences that require them to analyse information, evaluate evidence, and construct knowledge collaboratively. Rather than memorising concepts, students actively develop conceptual understanding through inquiry and discussion. This finding is consistent with previous studies showing that instructional strategies integrating authentic learning experiences improve learning outcomes by encouraging students to construct knowledge actively, thereby strengthening critical and analytical thinking skills [37]. Furthermore, critical thinking encompasses the ability to provide simple explanations, develop basic skills, apply appropriate strategies, formulate further explanations, and draw logical conclusions [38]. Accordingly, the Problem-Solving model positions students at the centre of the learning process by encouraging them to solve authentic problems critically and collaboratively [39].

Recent evidence further reinforces these findings. A meta-analysis research, demonstrated that collaborative problem-solving significantly improves students' critical thinking, conceptual understanding, and

academic achievement by promoting active participation, communication, and shared knowledge construction throughout the learning process [40]. Similarly, a recent systematic review [41], concluded that problem-solving-oriented instruction promotes students' conceptual understanding and higher-order thinking by engaging them in active inquiry, collaborative learning, and systematic problem-solving processes. These learning experiences enable students to apply knowledge more effectively and achieve better learning outcomes across various educational contexts.

Similar findings have been reported in classroom action research across Social Studies and integrated learning contexts. A classroom action research study in Social Studies demonstrated that the Problem-Solving model significantly improved students' critical thinking, collaboration, and analytical skills, as reflected in higher learning achievement across two intervention cycles [42]. Likewise, classroom action research in Integrated Science and Social Studies reported progressive improvements in both individual and class learning outcomes following a two-cycle intervention [43]. Comparable results were also found in Social Studies classrooms implementing the Problem-Based Learning model, where students showed significant improvements in critical thinking skills, the proportion of students achieving the minimum learning criterion, and overall class performance across successive cycles [44].

From a pedagogical perspective, the present findings suggest that the effectiveness of the Problem-Solving model depends not only on presenting authentic problems but also on the quality of teacher facilitation throughout the learning process. Structured guidance, appropriate scaffolding, constructive feedback, and collaborative discussion enable students to develop higher-order thinking skills and apply knowledge more effectively. This interpretation is consistent with recent systematic reviews indicating that problem-solving-oriented instruction enhances students' problem-solving abilities, critical thinking, learning motivation, and academic achievement by encouraging active knowledge construction in authentic learning environments [45]. Furthermore, recent evidence highlights structured teacher support as a key factor in maximizing the effectiveness of problem-solving-oriented instruction and improving students' learning outcomes [46]. Overall, these findings indicate that the Problem-Solving model is an effective instructional approach for improving Social Studies learning outcomes by integrating authentic problem-solving, collaborative learning, and continuous teacher support within a student-centred learning environment.

The Simultaneous Improvement of Learning Motivation and Social Studies Learning Outcomes through the Problem-Solving Model

The implementation of the Problem-Solving model has proven capable of simultaneously improving both students' learning motivation and Social Studies learning outcomes. Students' learning motivation increased from 62% in Cycle I to 78% in Cycle II, falling within the high category. Improvement was observed across all learning motivation indicators, including perseverance in learning, interest in the subject, activeness in learning activities, responsibility toward tasks, and learning independence. In addition to improving learning motivation, the Problem-Solving model also proved effective in enhancing students' learning outcomes. The class average score increased from 65.6 in the pre-cycle to 73.8 in Cycle I and further rose to 82.5 in Cycle II. The classical learning mastery rate also improved progressively, from 47% in the pre-cycle to 63% in Cycle I, ultimately reaching 84% in Cycle II.

These improvements demonstrate that problem-solving-based learning is capable of creating a more effective and student-centered learning environment. Students became more active in seeking information, engaging in discussions, and solving problems, thereby deepening their understanding of the subject matter. Unlike previous studies that typically examined motivation and learning outcomes as separate variables, this study demonstrates that both variables can be improved simultaneously through the systematic implementation of the Problem-Solving model within a collaborative classroom action research design. This finding contributes new empirical evidence to the development of more innovative and effective Social Studies instructional strategies, particularly in the context of junior secondary education in Indonesia.

These findings are consistent with the view of Fedrianto, Sari, & Ni'matullah, who emphasize that teachers play a crucial role in stimulating learning motivation through appropriate instructional strategies [47]. Improving students' academic achievement requires the integration of effective teaching methods, instructional media, and learning motivation, as these elements work synergistically to support meaningful learning. This interpretation is further supported by a recent systematic review of 38 peer-reviewed studies, which identified effective teaching practices, supportive instructional behavior, and well-structured learning environments as key determinants of students' academic motivation across educational levels [48]. Likewise, a literature review highlighted that context-appropriate instructional strategies and continuous feedback are essential for sustaining students' motivation throughout the learning process [49]. Consistent with these findings, research in Social Studies education demonstrated that teachers' creativity in applying diverse instructional methods and media significantly improved students' learning outcomes [50]. Collectively, these studies suggest that the improvements in students' motivation and learning outcomes observed in the present study were attributable not

only to the Problem-Solving model itself but also to the teacher's structured guidance and instructional support during Cycle II.

4. CONCLUSION

This classroom action research demonstrated that the systematic implementation of the Problem-Solving model effectively improved both students' learning motivation and Social Studies learning outcomes among Grade VIII-B students at SMPN 14 Madiun. By engaging students in authentic problem-solving, collaborative discussions, and reflective learning activities, the model created a more active, meaningful, and student-centred learning environment that enhanced participation, critical thinking, and academic achievement. Theoretically, this study contributes empirical evidence that the Problem-Solving model can simultaneously improve learning motivation and learning outcomes, extending previous studies that have generally examined these variables separately. These findings reinforce the effectiveness of student-centred, problem-solving-oriented instruction in Social Studies education. Practically, the findings suggest that authentic problem-solving tasks, structured teacher facilitation, collaborative learning, and continuous feedback are key elements for improving students' motivation and academic performance. Therefore, the Problem-Solving model can serve as an effective instructional strategy for junior secondary Social Studies classrooms. Future research should examine the implementation of the Problem-Solving model across different subjects and educational levels, as well as its integration with digital learning technologies to further enhance students' motivation, critical thinking, and learning outcomes.

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AUTHOR CONTRIBUTIONS

Conceptualization, Investigation, Data Curation, and Writing Original Draft Preparation AP. Methodology, Validation, and Writing – Review & Editing IM and AR. Supervision IM and AR. All authors have reviewed and approved the manuscript in its published form. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

INFORMED CONSENT STATEMENT

Informed consent was obtained from all participants involved in the study. Participation was voluntary, and respondents were informed about the study purpose, the confidentiality of responses, and their right to withdraw at any time without penalty. No personally identifying information was disclosed in the reporting of results. All images in this article have been authorized and are the property of the authors.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

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