



a Utilization of flashcard media in social studies learning to improve learning outcomes of third grade elementary students on the material characteristics of plains (classroom action research)

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ABSTRACT

This research is motivated by the low learning outcomes of grade III elementary school students in the subject of Natural and Social Sciences, especially the material on the characteristics of plains and mountains. This study positions flashcard learning media as a visual aid that serves to increase student understanding in a concrete and interesting way. The purpose of this research is to improve students' learning outcomes through the application of flashcard media combined with cooperative learning activities. The research was conducted in the form of Classroom Action Research at SDN Klagensert 1 with a total of 14 students. The action was carried out in two cycles, each of which consisted of the stages of planning, implementation, observation, and reflection. Data collection techniques included observation, written tests (pre-test and post-test), interviews, and documentation. The results showed an increase in learning engagement and student academic results. The percentage of completeness increased from 57% in the pre-test to 78% in cycle I, and experienced further improvement in cycle II. This research shows that the use of flashcards can improve learning outcomes and encourage active and meaningful learning. The findings contribute to the development of simple visual media that are effective in improving the quality of learning in primary schools.

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1. INTRODUCTION

The right choice of instructional media and teacher-student interaction are essential components of effective learning. Learning media are used to help students understand concepts concretely, especially in elementary school, where students' thinking is still in the concrete operational stage. Learning media are anything that can be used to convey messages and stimulate students' attention, interest, and thinking during the learning process. With the appropriate use of media, student engagement is enhanced, concentration is improved, and understanding is strengthened. Consequently, teachers must be innovative and creative when developing learning media that align with the subject matter and students' characteristics (Maghfiroh & Rozak Hanafi, 2023).

Basic education for children establishes the premise that school is a prerequisite for children to thrive and make choices about their lives, and to become an integral part of future societal development (Elmahasina et al., 2025). Basic education serves as a foundation that plays

a crucial role in shaping students' knowledge and skills. The Merdeka Curriculum is an update to the 2013 curriculum that grants teachers the freedom to choose the most appropriate teaching approach based on students' needs and preferences (Utami et al., 2024). In the Merdeka Curriculum, widely used in elementary schools, there is an integration of Natural Sciences (IPA) and Social Sciences (IPS), collectively referred to as IPAS. Natural and Social Sciences (IPAS) is a field that combines cognitive and contextual elements. In elementary school, the IPAS subject is distributed across all phases A, B, and C. In Phase A for grades 1 and 2, IPAS is integrated with other subjects. In Phase B for grades 3 and 4, and Phase C for grades 5 and 6, the learning outcomes for Natural Sciences and Social Studies are separate and presented in a subject called IPAS (Andreani & Gunansyah, 2023). However, preliminary research at SDN Klagenserut 1 indicates that third-grade students face difficulties in understanding IPAS material on the topic of "characteristics of highlands and lowlands." Only 57% of students met the Minimum Competency Criteria (KKM), indicating they struggled with the learning process. This is likely due to the dominant use of lecture-based teaching and a lack of concrete, engaging visual media.

The Jigsaw cooperative learning model enhances student learning outcomes by fostering collaboration and individual responsibility (Sejahtra, 2021). Nevertheless, such research has not extensively explored the role of visual media as a crucial component in supporting this model. However, visual media such as flashcards are highly beneficial for IPAS learning that requires spatial visualization, such as understanding the geographical differences between highlands and lowlands. As explained in Paivio's dual-coding theory, flashcards can help students remember and present concepts in a more engaging way (Setyaningsih et al., 2017). This can also enhance their understanding as they process verbal and visual information simultaneously.

To address this issue, this study integrates flashcards into the Jigsaw learning model to improve students' understanding and learning outcomes. The social constructivist approach (Vygotsky as cited in Ummah, 2019) describes learning as social interaction within the zone of proximal development, where students collaborate and receive support from visual media. Furthermore, this study demonstrates that visual media is a crucial component in reinforcing social, affective, and cognitive learning processes (Oktaviani et al., 2021).

The novelty of this study lies in the integration of visual flashcard media into the Jigsaw cooperative learning model for IPAS instruction, which has traditionally been implemented separately. The objective of this study is to improve student learning outcomes and analyze the benefits of integrating the Jigsaw model with flashcard media in IPAS instruction. It is hoped that this contribution will advance research on instructional media and facilitate the development of other simple media to support thematic learning based on the Merdeka Curriculum.

2. METHOD

This classroom action research (CAR) aims to improve student learning outcomes by implementing a specific learning model in a real classroom setting. This study uses the spiral model developed by Kemmis and McTaggart (1988) as cited in (Bernadetta Purba et al., 2021), which consists of four main stages: planning, acting, observing, and reflecting. To ensure that the learning process and outcomes are continuously improved, this cycle is repeated multiple times. This PTK model was chosen because it can address the specific learning challenges faced. The objective of this study is to improve student learning outcomes by using the Jigsaw cooperative

learning model with the aid of flashcards on material featuring highland and lowland characteristics.

This study involved 14 students from third grade at SDN Klagenserut 1, comprising 8 boys and 6 girls. The study was conducted from April to May 2025 at SDN Klagenserut 1. The tools used included teacher and student observation sheets, learning outcome tests, field notes, and photographs documenting learning activities. Data collection involved observing what students and teachers did during lessons, administering learning outcome tests at the end of each cycle, and maintaining documentation of activities as physical evidence that the interventions were implemented.

Quantitative data were analyzed descriptively by calculating the mean and the percentage of learning achievement. Qualitative data from observations and interviews were analyzed through data reduction, data presentation, and drawing conclusions. Learning achievement was calculated using the formula: $\text{Achievement (\%)} = (\text{Number of students who achieved mastery} / \text{total number of students}) \times 100\%$.

3. RESULT AND DISCUSSION

The purpose of this study is to improve the learning outcomes of third-grade students at SDN Klagenserut 1 in the subject of Integrated Science through the application of the Jigsaw cooperative learning model aided by flashcards. Student learning outcomes were analyzed through three stages: pre-cycle (pretest), cycle I, and cycle II, with a focus on average scores and learning mastery against the Minimum Passing Score (MPS) of 70.

In the pre-cycle stage, a pretest was administered to measure students' initial understanding of the characteristics of highlands and lowlands. The results showed a class average of 73, with 57% of students scoring above the MPC. Although the average score appeared to slightly exceed the MPC, the mastery rate remained low. These findings indicate a disparity in students' understanding of the material, with most students not yet able to master the concepts optimally. Based on observations, it appears that most students displayed a lack of enthusiasm during the learning process, particularly when the teacher delivered the material in a traditional lecture format. This situation resulted in low levels of active student participation and a tendency toward passivity during instructional activities.

The first cycle was implemented using the Jigsaw learning model and flashcards as visual aids. This showed a significant improvement compared to the pre-cycle, as the class average score increased to 86, and the mastery rate rose to 78%. It has been proven that cooperative learning, which involves dividing the material into expert groups, helps students understand the subtopics more deeply and collaborate more effectively. However, observations made during the learning process showed that some students still relied on their peers during discussions, and some students were not actively sharing their learning outcomes. Due to time management constraints, the expert group presentations were still not very effective.

Based on reflections from Cycle I, Cycle II was improved. This included providing clearer guidance on the role of each group member and improving the design of the flashcards to make them more engaging and varied. As a result, although the class average remained at 86, the mastery rate increased to 100%, indicating that all students had met or exceeded the minimum passing score. Additionally, student engagement in learning also increased significantly. Nearly all

students participated in group discussions, demonstrated the ability to present their learning outcomes, and were highly enthusiastic about using the flashcards.

Although overall learning outcomes showed improvement, some results in Cycle I did not align with the majority trend. Data indicated that three students failed to meet the minimum competency standard (KKM), despite the class average being quite high at 86. This suggests that students vary in their understanding within the same class. Based on observation results, students who had not achieved mastery tended to be passive in group discussions and struggled to comprehend the visual information on the flashcards. This indicates differences in students' learning styles and readiness levels. Additionally, the teacher observed that group participation was not always evenly distributed; some students dominated discussions, while others merely followed along without actively participating.

These findings suggest that the Jigsaw cooperative learning strategy proved effective for most students. However, some students still required additional support to follow the lessons effectively. In Cycle II, these disparities began to decrease after strategy adjustments were made, until all students achieved mastery.

Student learning outcomes from the pre-cycle to Cycle II indicate that using the Jigsaw cooperative learning model with flashcards helps students understand IPAS material, particularly the characteristics of highlands and lowlands. Learning through the Jigsaw cooperative learning model is expected to help students concentrate while receiving the taught material (Reynaldi Nomor et al., 2022). In the pre-cycle, the average student score was only 73, with a mastery rate of 57%. During Cycle I, there was an increase in the average student score to 86, with the learning mastery rate reaching 78%. Although this average exceeded the minimum passing score (KKM), some students still failed to meet the minimum standard. Improved learning strategies were then implemented in Cycle II. As a result, all students achieved the KKM, with a mastery rate of 100%, while the average score remained at 86. This achievement reflects the success of the intervention, both in terms of improved understanding and the equitable distribution of learning outcomes among all students. Although the class average score in cycles I and II remained the same at 86, the increase in learning achievement from 78% to 100% indicates that students who were previously below the KKM saw their scores rise to exceed the proficiency threshold. Meanwhile, high-ability students tended to maintain their scores, so there was no significant increase in the average. Quantitative data and observations of student learning activities indicate this improvement. Students who were previously passive became more engaged in discussions, were more willing to ask questions, and were enthusiastic about using flashcards. Flashcards are visual aids that strengthen connections between ideas through repetition and visual stimulation (Athoillah et al., 2025). Flashcards have proven to help students recall the characteristics of highlands and lowlands more quickly due to the use of attractive and simple images. Student engagement also appeared more evenly distributed in group discussions, although initially some students merely followed along without contributing. The Jigsaw method gives students the opportunity to be more actively involved in the learning process and to better understand the material through collaboration and group discussion. (Elmahasina et al., 2025) Overall, the data indicate that the intervention has brought about positive changes in both learning outcomes and the learning process.

The findings of this study confirm that the Jigsaw cooperative learning model contributes positively to improving student learning outcomes, consistent with the results of a previous study by Sejahtra (2021), which showed that dividing material among small groups can enhance students'

understanding. Research by (Arrasyid et al., 2022) also showed similar results, namely that the application of the Jigsaw model to fourth-grade elementary school students was able to increase the average post-test score to 89.17. However, that study did not integrate the learning model with visual media as a supporting tool. In the context of this study, the integration of the Jigsaw model with flashcards proved to strengthen student engagement and their retention of the presented material. This is evident from the increase in the percentage of students achieving mastery, which initially stood at only 57% in the early stages but rose to 100% following the intervention in Cycle II. This means that, in addition to being effective as a strategy, the incorporation of visual media in the learning process also facilitates the understanding of abstract concepts, particularly in IPAS material in lower grades.

Furthermore, these results are supported by (Santria, 2024), who states that the Jigsaw model has a positive impact on fostering learning interest, conceptual understanding, social skills, and students' academic achievement. In its implementation, students not only learn specific subtopics but also act as "teachers" for their group peers, thereby fostering an active and collaborative two-way learning process. The visual aspect of learning is further reinforced by the findings of (Pradana & Gerhni, 2019), who emphasize that the use of image-based media can enhance the effectiveness of the learning process. Flashcards, as a simple form of visual media, offer advantages in terms of efficiency, ease of use, and their ability to capture students' attention through communicative and engaging visual displays. These advantages make this medium a relevant tool in implementing cooperative learning in elementary schools.

From a theoretical perspective, this study reinforces Vygotsky's social learning theory as cited in (Ummah, 2019). This theory emphasizes that interaction is crucial for building conceptual understanding. The Jigsaw model demonstrates social scaffolding, where students learn from both the teacher and their group peers. Additionally, (Nurhayati & Langlang Handayani, 2020) state that presenting information in both verbal and visual forms simultaneously makes it easier to understand and remember. This theory is relevant to the use of flashcards. Due to their limited capacity for abstract thinking, concrete and visual media are highly beneficial for elementary school-aged students. Therefore, to enhance learning efficiency in lower-grade elementary school classrooms, combining the social structure of the Jigsaw model with visual flashcard media is an appropriate choice. Consequently, the integration of the Jigsaw social structure model with visual flashcard media constitutes an effective combination for enhancing learning outcomes in lower-grade elementary school classes. These theories form the scientific foundation for the success of the strategies implemented in this study. This implies that students' learning achievements are not merely coincidental but are grounded in a strong pedagogical foundation and are replicable.

Overall, this study offers benefits for teachers and instructional designers in elementary schools. The Jigsaw model addresses many issues related to passive learning in the classroom, particularly in science lessons, which students often find challenging. Students' low mastery of science material may stem from the continued use of conventional teaching methods, where teachers dominate the learning process without providing sufficient opportunities for active student engagement. (Rosiyani et al., 2024). Additionally, inexpensive and easy-to-make flashcards can serve as an effective alternative learning medium for schools with limited resources. The images on the flashcards will make students more interested and enthusiastic about learning. It is hoped that this will help students read and understand the text content. (PRASETYO et al., 2024) The results of this study also support a flexible curriculum that emphasizes student-centered, active, and independent learning. Teachers can adapt the content of the flashcards to meet

students' needs and abilities. They can also integrate them with other cooperative learning models within the classroom environment. Another implication is the importance of teacher training in designing visual media-based collaborative learning so that the strategies used are not merely a formality but truly address students' learning needs. Thus, these findings can serve as inspiration for other schools in implementing innovative and enjoyable learning.

However, this study has several limitations that need to be noted. First, the study sample consisted of only 14 students in a single class, so the findings should be generalized with caution. Second, the study was limited to the cognitive aspects of learning outcomes, while the affective and psychomotor aspects have not been thoroughly examined. Third, the intervention was conducted over only two cycles, so the long-term impact of the intervention on student learning retention remains unknown. Fourth, no comprehensive analysis was conducted regarding student differences in learning styles, family backgrounds, and prior abilities. Therefore, it is recommended that future research be conducted on a larger scale, involving more than one class, and over a longer period of time. Future research should also explore the influence of this model on non-cognitive aspects and combine it with technology-based media such as interactive educational applications. Thus, learning strategies can continue to be developed sustainably and based on scientific evidence.

Table 1. Comparison of Scores by Stage

Stage	Average Score	Achievement Rate	Total Number of Students Who Met the Standard
Pretest	73	57%	8 out of 14 students
Posttest I	86	78%	11 out of 14 students
Posttest II	86	100%	14 out of 14 students

4. CONCLUSION

Based on the results of the study, it can be concluded that the implementation of the Jigsaw cooperative learning model combined with flashcards was able to improve the learning outcomes of third-grade students at SDN Klagenserut 1 on the topic of the characteristics of lowlands and highlands. This is evidenced by an increase in students' average scores from 73 in the pre-cycle to 86 in cycles I and II, as well as an increase in learning mastery from 57% to 100%. Additionally, the use of visual media in the form of flashcards helped encourage active student participation and created a more enjoyable and collaborative learning atmosphere. This learning model can serve as an effective alternative for implementation in science education at the elementary school level, particularly when presenting abstract concepts. It is hoped that teachers will adopt similar approaches to enhance the quality of student-centered learning. Further research is recommended to explore the impact of this model on affective and psychomotor aspects, as well as its application on a broader class or school scale.

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