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Development of a Monopoly-Based Educational Game to Enhance Elementary Students' Understanding of Indonesia's Geographical Location

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Abstract: Development of a Monopoly-Based Educational Game to Enhance Elementary Students' Understanding of Indonesia's Geographical Location. **Objective:** The limited use of learning media by teachers in the classroom learning process affects students' learning outcomes. To enhance these outcomes, appropriate learning media are needed, especially those that align with the characteristics of elementary school students who tend to enjoy play-based activities. One such example is the Monopoly game media, which incorporates captivating images to engage students. This study aims to develop, test the feasibility, and effectiveness of the ekasi monopoly game media to improve student learning outcomes in social and natural science learning outcomes. **Methods:** This type of research is developmental research (R&D) using the ADDIE development model. The study involved 29 fifth-grade students at SDN Tambakaji 05 Semarang. Data collection techniques included both pretest-posttest and non-test methods, such as observations, interviews, questionnaires, and documentation. **Findings:** The results indicated that the feasibility of the Ekasi Monopoly Game Media was assessed by media experts at 93.3%, material experts at 97.5%, teachers at 95%, and students at 91.6%, all falling within the "very feasible" category. Additionally, based on the N-Gain test, the Ekasi Monopoly Game Media was proven to be effective, with a high effectiveness category and an average score of 0.7150. Additionally, the t-test results showed a score of 0.000 with sig < 0.05 between the pretest and posttest findings. **Conclusion:** To enhance the learning outcomes of the IPAS material on the geographical location of Indonesia for fifth-grade students at SDN Tambakaji 05 Semarang, the study's findings indicate that the development of the Ekasi Monopoly Game Media was completed and categorized as both highly feasible and effective. Through the development of this media, students were able to easily understand the material and remained enthusiastic about learning, as they experienced an engaging and enjoyable learning process.

Keywords: learning media development; monopoly game; learning outcomes: geographical location of indonesia.

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INTRODUCTION

One of the most important factors in the development of human resources is education, which forms the foundation of a nation's progress. As a result, the ability of a qualified individual is essential. However, a person's character can be assessed not only by their level of education but also by their views and values. Education is a deliberate and planned effort to create a learning environment and process in which students

actively develop their potential to possess religious and spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, the nation, and the state, as outlined in Law Number 20 of 2003 concerning the National Education System. Preparing a good person for a better future is the primary goal of education itself. As emphasized by Voogt et al. (2015), compulsory education must adapt in order to equip students with the essential skills and cognitive abilities that are crucial in society. (Voogt et al., 2015). Therefore, the quality of a country or nation can be enhanced through education, which in turn improves human resources and contributes to building a better nation.

Human resources and effective education management are key to realizing the progress and quality of a country or nation. In this context, the teacher's role is crucial in the learning process, as it influences each student's comprehension of the subject and character development. A teacher can enhance the quality of education through an effective and engaging approach or learning strategy. Learning should consider students' interests, appropriate materials, customized learning strategies, and the use of suitable learning media. This perspective leads to the conclusion that learning is a collaborative activity in which students and teachers work together to achieve a common goal. The use of media in the educational process is essential (Amalia, 2020).

One of the key elements in the learning process is learning media. Motivation and learning outcomes are likely to improve when students are provided with learning materials that capture their attention. One emerging strategy to encourage this competency is game-based learning, which utilizes the motivational aspects of games to actively engage students in the learning process. According to Qian and Clark (2016), game-based learning improves knowledge retention and fosters students' ability to think critically and solve problems in a dynamic context. In the primary school environment, where attention span and engagement are critical, the use of games is particularly effective. (Qian & Clark, 2016). Learning outcomes are the numerical results of an assessment of a student's ability, which are obtained after the learning process (Achidayat, 2018). Therefore, to enhance student learning outcomes and ensure that learning objectives are met, a learning medium tailored to the desired content is essential.

Monopoly media is a game that can be played by several people, and it emphasizes mastering the material that the teacher will teach to students (Lestari & Yusnaldi, 2024). Monopoly is a game that can enhance cultural memory, in this case, by helping students learn the geography of the country (Pavšiè, 2019). It introduces a balance between familiar rules and boundaries (Youdelevich & Hvidsten, 2024). Non-digital games, such as Monopoly, can effectively promote collaboration, communication, and critical thinking skills (Hall et al., 2024). Learning through play is an efficient method for students to internalize the knowledge they have acquired (Kuhmonen et al., 2019). Therefore, this Monopoly learning media can support an effective and efficient learning process, capture students' attention, and foster better learning outcomes.

Learning media can be applied to the subjects of social and natural science learning outcomes, with the elementary school level being one of the key stages. Social and natural science learning outcomes are part of the Merdeka Curriculum currently in use. Natural and social science subjects in the elementary school curriculum in Indonesia present unique instructional challenges, particularly in creating interactive, thematic, and contextually appropriate media. Research by Kebritchi et al. (2017) found that educational games can improve academic achievement and student motivation by

offering a more immersive learning environment compared to traditional methods. (Kebritchi et al., 2010). In social and natural science learning outcomes, the topics discussed pertain to science and society. These learning outcomes are part of the Merdeka Curriculum, which is taught in Phase A and concludes in Phase C. This study focuses primarily on the material related to social and natural science learning outcomes, specifically Chapter 6 of *My Rich Indonesia*, Topic A: *How Does My Indonesia Look?*, covering the Geographical Location of Indonesia.

Initial observations at SDN Tambakaji 05 Semarang revealed that teachers primarily use traditional lecture-based methods, often relying solely on textbooks and teacher explanations. The use of learning media is infrequent. This is due to the limited time available for creating and implementing such media. Additionally, students struggle to understand abstract material, particularly in subjects like Social Sciences and Natural Sciences. In teaching the geographical location of Indonesia, teachers need to use maps as concrete media to help explain the material, as maps can visually represent the concepts. This limitation in the use of appropriate learning media contributes to suboptimal student learning outcomes.

Referring to the issues outlined above, it was found that the learning outcomes for the natural and social sciences material on the geographical location of Indonesia were suboptimal. Additionally, the learning media used by the teacher were limited. Given the characteristics of elementary school students, who are still young and tend to enjoy games and captivating cartoon images, teachers are required to be creative and find ways to deliver material without being monotonous. Therefore, one potential solution that researchers can explore is the use of the Ekasi Monopoly game media to improve learning outcomes in social and natural sciences, specifically the material on the geographical location of Indonesia, for fifth-grade students at SDN Tambakaji 05 Semarang. The game is designed to align with the content of the national curriculum, particularly focusing on the geographical location of Indonesia, and is expected to encourage deeper learning and greater student engagement. Its development is grounded in the fundamental principles of game-based learning as outlined by Plass et al. (2015), which emphasize meaningful engagement, feedback, and adaptability as key instructional design elements (Plass et al., 2015). Additionally, Kangas (2024) argues that a playful learning environment fosters student freedom and creativity by enabling students to construct knowledge through interaction and experience (Kangas & Heljakka, 2024). Therefore, integrating game-based media into the classroom is expected to not only improve cognitive outcomes but also make the learning process more enjoyable and meaningful for students.

Several previous studies are relevant to this research topic and have explored the use of Monopoly game media in education. First, a study by Permana and Nugroho (2023) developed a realistic Monopoly-based game that is feasible for improving learning and understanding of magnetic physics through question-based training (Permana & Nugroho, 2023). Next, a study by Ardhani et al. (2021) demonstrated that the use of a cooperative learning model with Monopoly media can influence the quality of student learning by focusing students' attention, making it easier for them to absorb the material. Moreover, this approach helps students develop systematic thinking, thereby improving their learning outcomes (Ardhani et al., 2021). Finally, a study by Puspitasari and Ary (2024) created a cultural Monopoly game that serves as an alternative method to enhance student learning outcomes and discussion skills (Puspitasari & Ary, 2024). Based on these three studies, it can be concluded that Monopoly media in education is effective for

improving student learning outcomes, as it can capture students' attention, facilitate material comprehension, and train students to think systematically through gameplay.

From the three previous studies, the novelty introduced in this research was the development of concrete media in the form of an educational Monopoly game containing material on the geographical location of Indonesia, complemented by engaging text and images. This media is printed on durable materials, such as banners and paper, which are resistant to damage and can be reused repeatedly in the classroom learning process. The colors chosen for this media are vibrant, designed to capture the attention of elementary school students during its use.

METHOD

Participants

The population in this study consisted of all students at SDN Tambakaji 05 Semarang. The sample included fifth-grade students from the same school, with 29 students selected using a purposive sampling technique. This method was chosen to gather data from subjects who met specific criteria relevant to the research objectives. The sample was divided into two groups: 9 students for small group trials and 20 students for large group trials, ensuring a comprehensive evaluation of the developed learning media.

Research Design and Procedures

The type of research used in this study is Research and Development (R&D), a method employed to validate and develop a product (Sugiyono, 2022). This research was conducted during the even semester of the 2024/2025 academic year. The researchers applied the ADDIE development model, which stands for Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model provides a systematic structure with clearly defined steps (Yafie et al., 2024).

The first thing to do is the analysis stageIn this case, the researcher conducts a needs analysis as the basis for product development (Kasah et al., 2024). The analysis focuses on the curriculum, learning materials, and the needs related to the issues found in schools. The goal of this analysis is to identify solutions to the problems observed in the field. The second stage is the design phase. In this stage, the researcher designs the product framework based on the needs assessment collected from teachers and fifth-grade students of SDN Tambakaji 05 Semarang. The product was designed using the Canva application. The third stage is development, which involves creating and developing the Monopoly game media that was previously designed. At this stage, validation is necessary from media expert validators and relevant material experts to improve the product. Validation results are obtained through an instrument provided by the researcher, which serves as a guide for assessing the developed Monopoly game media. The instrument also includes a column for suggestions and feedback that can be filled in by the validator. The fourth stage is the implementation phase, during which product trials are conducted in the school learning process. This stage aims to assess the impact of using the Monopoly game media on the learning outcomes of fifth-grade students of SDN Tambakaji 05 Semarang, specifically on the material about Indonesia's geographical location. The final stage is evaluation, where the researcher evaluates each phase, from analysis to product development. This evaluation is based on feedback from media experts, material experts, and student responses after using the Monopoly game media. The ultimate goal of the evaluation is to measure the achievement of the learning objectives (Maydiantoro, 2021).

Instrument

The instruments used in this study include observation sheets, interview guidelines, and

student and teacher response questionnaires. The observation sheet was designed by the researcher based on classroom learning indicators to observe the teaching and learning process in the classroom. The interview guide was developed by adapting a framework from Sugiyono (2019) to ensure its relevance to the research objectives, particularly regarding the challenges and expectations in social and natural science learning. The student and teacher response questionnaires were adapted from an instrument developed by Anggraini et al. (2022), titled "Development of Social Studies Learning Media Based on Monopoly Games to Increase Motivation and Learning Outcomes of Grade 4 Elementary School Students" (Anggraini et al., 2022). This instrument assesses several key aspects, including content suitability, media attractiveness, ease of use, engagement, and learning motivation. The questionnaire was modified to suit the context of learning social and natural science material related to the geographical location of Indonesia.The pretest and posttest administered to students were designed based on learning indicators that align with the learning objectives to be achieved (Sianturi, 2025). The pretest and posttest items, which are multiple-choice questions, were adapted from the official learning materials of the Merdeka Curriculum and validated by media and material experts before being administered. Validity was ensured through expert validation by two specialists: media experts and material experts.

Data Analysis

The next step after collecting data in the field is to analyze the data. Generally, data analysis activities in research are conducted after data collection is complete (Sugiyono, 2022). In this study, the data analysis approach involved media and material experts performing a feasibility analysis of the product. The feasibility analysis was calculated using a Likert scale. Additionally, the researcher analyzed the responses from both students and teachers. A questionnaire with several questions about the use of the Ekasi Monopoly Game Media for learning was completed by the teachers and students. The product developed in this study is the Ekasi Monopoly Game Media on the Geographical Location of Indonesia.

Meanwhile, to test the feasibility and effectiveness of the Monopoly game media in improving student learning outcomes, a comparison of pretest and posttest results was conducted. A pretest is administered before using the Monopoly game media to measure students' initial learning outcomes, while a posttest is given after using the Monopoly game media to assess improvements in students' learning outcomes. This analysis aims to determine the extent to which the Monopoly game media affects student learning outcomes regarding the geographical location of Indonesia.In conducting the normality tests, t-tests, and N-Gain calculations, the researchers used the SPSS version 26 application. This version of SPSS allows the researchers to evaluate the feasibility and effectiveness of the Monopoly game media in improving student learning outcomes (Sianturi, 2025). The normality test with the Shapiro-Wilk Test helps researchers determine the appropriate data analysis technique based on the data obtained. The t-test is conducted to determine whether learning Natural and Social Sciences using the Monopoly game media is effective on normally distributed data. The N-Gain test measures the increase in the average score between pretests and posttests, providing information about the magnitude of the improvement in student learning outcomes before and after using the Monopoly game media.

The N-Gain score criteria in this study were categorized into three levels based on the range of scores achieved. This categorization follows the guidelines of Saadah and Anwar (2023). First, a score of $g > 0.7$ indicates a high effectiveness category, meaning that the learning media significantly improves student learning outcomes.

Second, a score of 0.3 d" g d" 0.7 falls into the medium category, suggesting a moderate level of effectiveness in improving student understanding. Lastly, scores < 0.3 are classified as low, indicating minimal impact of the learning media on learning outcomes (Saadah & Anwar, 2023).

■ RESULT AND DISCUSSION

Analyze

Analysis activities are conducted to determine the product that will be developed by the researchers. This analysis includes an examination of the curriculum and learning materials, as well as a needs analysis to address the problems identified in the school. The purpose of this analysis is to find solutions to the issues raised through the needs and curriculum analysis.

To determine the type of curriculum the school uses for instruction, the first step is to perform a curriculum analysis. This ensures that researchers can appropriately adjust the teaching modules. The curriculum analysis revealed that SDN Tambakaji 05 Semarang has implemented the Merdeka Curriculum in the classroom. Additionally, an analysis of learning materials was conducted to align the curriculum with the needs of the students. The focus of this research is on the social and natural science learning outcomes, specifically Chapter 6 of the Merdeka Curriculum, titled *Indonesiaku Kaya Raya*, Topic A: *How is My Indonesia Shaped?*, which covers the material on the Geographical Location of Indonesia.

The second stage is a needs analysis aimed at identifying the learning needs of students and teachers. This analysis is conducted by examining the school facilities that support the learning process. Each classroom at SDN Tambakaji 05 Semarang is equipped with a variety of comprehensive learning tools, including whiteboards, LCD projectors for presenting instructional materials, loudspeakers that ensure teachers' voices are clearly heard, reliable internet access for obtaining technological information, and comfortable classrooms. Additionally, the researcher gathered information through interviews with social and natural science teachers at SDN Tambakaji 05 Semarang regarding challenges faced in teaching these subjects. The problems identified through these interviews will help the researcher find potential solutions. The results of the interviews revealed that students are not engaged in social and natural science lessons, and teachers are not utilizing enough learning resources. This is largely due to the use of teacher-centered lecture models and learning videos in the classroom. As a result, the researcher aims to develop Ekasi Monopoly learning media that can be applied to social and natural science education, with the hope of improving student learning outcomes and making the classroom experience more engaging.

According to the investigation mentioned above, effective learning media can help students overcome classroom boredom, as well as boost their motivation and desire to learn. This finding aligns with Chen Hsieh et al. (2018), who emphasized that educational games tailored to curriculum content can enhance learning quality and student engagement (Chen Hsieh et al., 2017). According to Pavšiè (2019), using contextual and visual games helps students develop cultural and spatial awareness, especially in geography (Pavšiè, 2019). This supports the researchers' decision to develop visual and interactive media such as Monopoly. Similar to Hall et al. (2024), who emphasized that non-digital games improve collaboration and conceptual retention, the analysis revealed a clear gap in the use of such media at SDN Tambakaji 05 Semarang (Hall et al., 2024). Therefore, the development of learning media that bridges abstract knowledge into concrete visualizations is crucial.

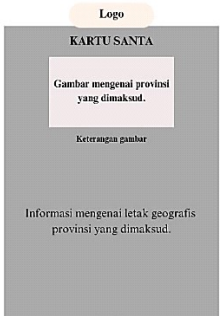
Design

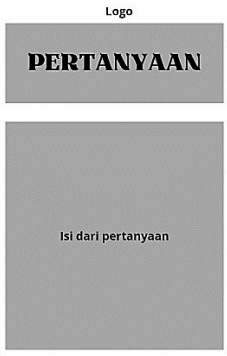
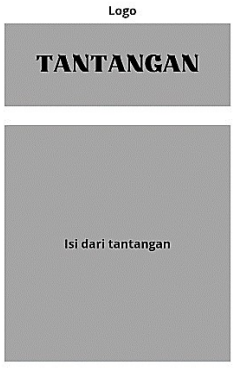
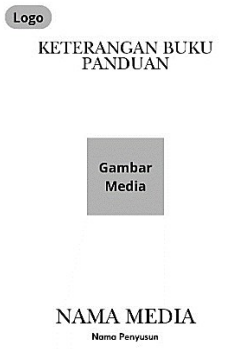
At this stage of the design process, products are created using a questionnaire that gathers feedback from teachers and fifth-grade students at SDN Tambakaji 05 Semarang about

their needs. The researchers used Canva software to create the items. Canva is an application that offers services for developing educational materials that are particularly beneficial to the learning process, such as infographics, banners, posters, and presentations (Sudibyo et al., 2025). he researchers utilized the Canva application for media creation by combining text and images into an engaging format. The Ekasi Monopoly game media is packaged as a banner coated with a yellow board, resembling a puzzle, containing Santa cards (Wawasan Kita), challenge cards, question cards, and an Ekasi Monopoly guidebook. The Ekasi Monopoly game is designed based on the students' learning media needs. The initial design process using Canva involved creating the media framework, shape, layout, font size, and color. Our design findings align with Kuhmonen et al. (2019), who emphasize that co-creating game-based experiences can facilitate stronger cognitive engagement. The visual design employs bold colors for each province, clear typography, and iconography to support spatial memory (Kuhmonen et al., 2019). This is consistent with Lestari & Yusnaldi (2024), who highlighted that visual-geographical features in game media improve comprehension for primary school students (Lestari & Yusnaldi, 2024). Furthermore, the researchers will develop Ekasi Monopoly media for social and natural science learning, Chapter 6, Indonesiaku Kaya Raya, Topic A: How Is My Indonesia Shaped? Material on the Geographical Location of Indonesia. This Ekasi Monopoly media is implemented using the Problem-Based Learning (PBL) approach.

The syntax for Problem-Based Learning (PBL) consists of five steps: (1) Orienting students to the problem, (2) Orienting students to learn, (3) Guiding individual and group investigations, (4) Creating and presenting outcomes, and (5) Analyzing and assessing the problem-solving process (Istigfarin & Andayani, 2023). Below is a table outlining the initial product design created by the researchers.

Table 1. Initial product design

Figure	Description
	Besides, the initial design of the Ekasi Monopoly includes: • The name of the province on each plot. • Challenge and question patches. • Start plot • Vacation plot • Prison plot • Gift plot • Logo • Material • Picture of the Indonesia Map
	On the side is the initial design of the Santa Card (Wawasan Kita): • Logo • Title of the Santa Card • A picture of the province in question • Information on the geographical location of the province • Source of information • The name of the province.

		On the side is the initial design of the Question Card: • Logo • Title of the Question Card • The content part of the question
		On the side is the initial design of the Challenge Card: • Logo • Title of the Challenge Card • The content part of the challenge
		Besides, the initial design of the cover of the Ekasi Monopoly Game Handbook includes: • Logo • Guidebook description • Media image • Media name • Compiler's name
		Besides, the initial design of the contents of the Ekasi Monopoly Game Handbook includes: • Logo • Media rules • Section containing rules for playing and learning through the media

Development

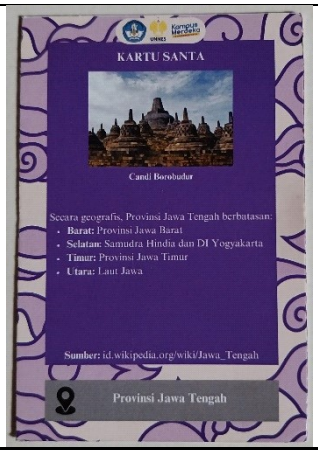
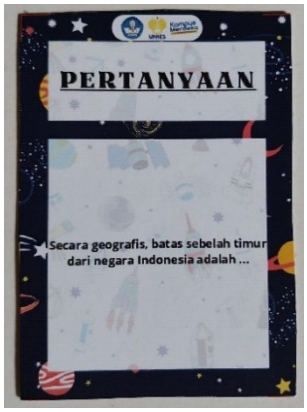
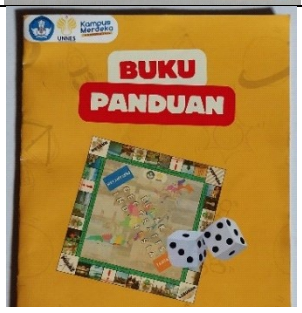
For elementary school students, typically aged between 7 and 12, learning media plays a crucial role as they enter the concrete operational stage. At this stage, they are able to reason logically but still require the assistance of real or tangible objects. Therefore, students need learning media that can help facilitate their

understanding of lessons and enhance their cognitive abilities (Ardhani et al., 2021). Using the collected material, such as images, font types, and content related to the geographical location of Indonesia, it is then developed into the initial product of the Ekasi Monopoly Game Media. The use of images, fonts, and customization of the material aims to support visual-spatial memory, in accordance with the findings of Hall et al. (2024), who stated that context-rich non-digital games can enhance concept retention (Hall et al., 2024). After the product is developed based on the previous design, the next stage is to conduct a validation process to determine the feasibility of the developed media according to the expertise of material and media specialists.

In the validation process, material experts provided suggestions for improving the learning objectives and teaching materials related to the geographical location of Indonesia. Initially, the learning objectives were based on lower-level cognitive domains. However, after review, it was recommended to shift towards higher-level cognitive domains. This change aligns with the curriculum currently implemented in schools, the Merdeka Curriculum, which allows for flexibility and aims to support learning recovery from 2022 to 2024 due to the pandemic (Rahmadayanti & Hartoyo, 2022). Furthermore, it was suggested that teaching materials be more detailed and provide in-depth content. Media experts who evaluated the design and use of the media confirmed that the developed product met the expected criteria and did not require any revisions. The results of the Ekasi Monopoly media design are presented in Table 2 below.

Table 2. Media development results of the ekasi monopoly game

Development Results	Development Design Picture	Description
Ekasi Monopoly		Monopoli Ekasi is 60 × 60 cm in size and printed in the form of a banner coated with yellow board so that it can be folded like a puzzle. • Each plot in the Ekasi Monopoly represents each province in Indonesia, complete with a picture of the icon of each province. • There are also tantangan and pertanyaan plots. • There is a multiplayer plot for the starting place in the Monopoly game. • The liburan plot, in which the player can select any province by stepping on it, to receive a Santa card (our insight), he must respond to the teacher's questions. • Penjara Plot means that if the player steps on it, he/she is not allowed to participate in the game for one round. • Hadiah Plots means that the player steps on it, then he is free to choose any province and

		immediately gets a Santa card without answering questions from the teacher.
Santa Card		The Santa Card (Wawasan Kita) measures 9 × 6 cm and is printed using AC 310 paper type. • This Santa card contains information about the geographical location of the Indonesian province in question. • There are supporting images to recognize the province in question. • Equipped with the source of the information conveyed by the researcher.
Question Card		The Question Card measures 9 × 6.5 cm and is printed using AC 310 paper type. • This question card contains questions related to the Indonesian geographical location material. • The player gets a question card if he steps on the question plot in Monopoly. • If the player gets this question card, he will not get a Santa card if he answers the question correctly or incorrectly.
Challenge Card		The Challenge Card measures 9 × 6.5 cm and is printed using AC 310 paper type. • This challenge card contains various challenges, such as singing and answering math problems, for players who step on the challenge patch on the Monopoly board.
Guidebook Cover		The Ekasi Monopoly Game Guidebook measures 15 × 10.5 cm and is printed using CTS 150 paper type. • The cover of this guidebook illustrates the ekasi monopoly media, accompanied by the name of the compiler or developer.

Guidebook Content		The content of the Ekasi Monopoly Game Guidebook measures 15 × 10.5 cm and is printed using CTS 150 paper type. • The contents of this guidebook certainly include the rules of the Ekasi Monopoly game. • The game rules are described in detail in 10 points. • Before using the Monopoly Ekasi game media, players are encouraged to read the rules of the Monopoly Ekasi game.

Implementation

The developed product was validated by a team of experts and declared feasible for implementation in the field. The researchers then conducted a large-group product trial involving 20 fifth-grade students at SDN Tambakaji 05 Semarang. This group did not include students who had previously participated in the small-group trials. During the trial, the teacher facilitated the session using the Problem-Based Learning (PBL) model, where students were introduced to a problem, collaboratively explored learning questions, and applied their knowledge through gameplay.

Teachers and researchers directly supervised the trial procedure to ensure that all developed materials were utilized as efficiently as possible. During the game, students actively collaborated, discussed the locations of the provinces, and answered questions based on the content of each plot or card. Observational data revealed an increase in student engagement, as students demonstrated enthusiasm and exhibited self-initiated learning behaviors. This finding aligns with Kuhmonen et al. (2019), who emphasize that game-based learning fosters student interaction and engagement (Kuhmonen et al., 2019).

The teacher's role is that of a facilitator, guiding discussions and ensuring the accuracy of information. This teaching style supports the learner-centered approach in the Merdeka Curriculum and has been shown by Youdelevich & Hvidsten (2024) to enhance motivation in complex topics through educational games (Youdelevich & Hvidsten, 2024). Both teachers and students provided feedback on the use of the Ekasi Monopoly Game Media for teaching the Geographic Location of Indonesia after the learning process.

Evaluation

Evaluation is based on the results of media validation, material validation, and student responses after using the Monopoly game learning media (Alfi Sandi Kusuma et al., 2024). In addition to assessing student learning outcomes on the material delivered, the increase in pretest and posttest scores was analyzed using normality tests, t-tests, and N-Gain tests, demonstrating the efficacy of the Ekasi Monopoly Game Media. The validation results conducted by researchers with media experts yielded an average score of 93.3%, while material validation received an average score of 97.5%. Teacher and student responses were also very positive, at 95% and 91.6%, respectively, categorizing the game as "very feasible".

The Ekasi Monopoly Game media, used in learning social and natural science outcomes on

the geographical location of Indonesia, is highly feasible for field testing as a learning tool for fifth-grade students at SDN Tambakaji 05 Semarang, based on the evaluation results of the media, materials, and student responses.

Feasibility of Learning Using the Ekasi Monopoly Game Media

Media specialists and material experts served as validators for the Ekasi Monopoly game, assessing its viability. The feasibility evaluation of the Ekasi Monopoly game media was also conducted by teachers and fifth-grade students at SDN Tambakaji 05 Semarang. Both student and teacher responses to the learning media were highly positive, particularly regarding its visual design and clarity. This finding aligns with the research of Clark et al. (2016), who concluded that digital games aligned with learning objectives significantly enhance student motivation and engagement (Clark et al., 2016). The goal of the feasibility assessment is to determine whether the developed product meets the required standards, is practical, and can be effectively used in classroom learning.

The validation results conducted by researchers with media experts yielded an average score of 93.3%, placing it in the 'very feasible' category. Meanwhile, the material validation achieved an average score of 97.5%, also falling into the 'very feasible' category. The evaluation of feasibility provided by media and material experts was based on a questionnaire prepared by the researcher. The feasibility test for both media and material validation questionnaires utilized a Likert scale.. The Likert scale used ranged from a score of 4 for 'very good' criteria to a score of 1 for 'poor' criteria. Researchers developed a questionnaire for media experts containing 15 questions, with a maximum score of 60, covering 3 aspects. The assessment of these 3 aspects is detailed in the table below.

Table 3. Media expert feasibility aspects

Feasibility Aspects	Percentage
Quality and Content Objectives	25%
Constructional	31.6%
Technical / Appearance	36.7%

The table above outlines the feasibility aspects evaluated by media experts, which include: (1) Quality and Content Objectives, which received a percentage of 25%; (2) Constructional Aspects, which received a percentage of 31.6%; and (3) Technical/ Appearance Aspects, which received a percentage of 36.7%. As a result, the validation conducted by researchers with media experts yielded an average score of 93.3%, placing it in the 'very feasible' category.

Furthermore, the material expert assessment questionnaire consisted of 20 questions with a maximum score of 80, covering 5 aspects. The evaluation of these 5 aspects can be seen in the table below.

Table 4. Material expert feasibility aspects

Feasibility Aspects	Percentage
Accuracy with Learning Objectives	15%
Suitability with The Level of Thinking of Students	10%
Support for Learning Monopoly Content	32.5%
Stimulus Can Help Understand The Material	15%
Accuracy Supporting Lesson Content in The Form of Facts, Concepts, Principles, or Generalizations	25%

The table above outlines the eligibility aspects evaluated by material experts, which include: (1) Accuracy with Learning Objectives, which received an assessment of 15%; (2) Suitability with the students' cognitive level, which received an assessment of 10%; (3) Support for Learning Monopoly Content, which received an assessment of 32.5%; (4) Ability to Stimulate Understanding of the Material, which received an assessment of 15%; and (5) Accuracy in Supporting Lesson Content in the Form of Facts, Concepts, Principles, or Generalizations, which received an assessment of 25%. As a result, the validation conducted by researchers with material experts yielded an average score of 97.5%, placing it in the 'very feasible' category. Considering the feedback from both material and media experts, the Ekasi Monopoly Game Media was deemed highly feasible for implementation in learning.

The results of the responses from teachers and students to the Ekasi Monopoly media were very positive. The teacher rated it 95%, placing it in the 'very feasible' category. This assessment indicates that the learning media is considered highly effective in supporting the teaching and learning process, particularly in facilitating the delivery of Indonesian geographical location material to fifth-grade students at SDN Tambakaji 05 Semarang.

Meanwhile, students rated the media at 91.6%, also in the 'very feasible' category. Students found the media to be highly engaging, easy to use, and effective in making learning more enjoyable. Throughout the learning process, students demonstrated enthusiasm for the game's progression and were actively involved in answering questions presented on the game cards. The interaction between the students and the learning media proved effective, further enhancing their understanding of the material

Thus, the responses from teachers and students indicate that the Ekasi Monopoly media is highly feasible for use as a learning tool for the material on Indonesia's geographical location. This is because it is not only effective in delivering the content but also enhances students' motivation and active participation in the learning process.

The responses from teachers and students regarding the Ekasi Monopoly media were very positive. The teacher rated it at 95%, placing it in the 'very feasible' category. The feasibility assessment provided by both teachers and students was based on a questionnaire developed by the researcher. The feasibility test for teacher and student responses used a Likert scale, where a score of 5 represents 'very good' and a score of 1 represents 'poor.' Researchers designed a questionnaire for teachers containing 16 questions, with a maximum score of 80, covering 4 aspects. The assessment of these 4 aspects is detailed in the table below.

From the table, the feasibility aspects evaluated by the teachers include: (1) Aspects of Suitability with the Material, which received a percentage of 28.75%; (2) Aspects of Media Display Presentation, which received a percentage of 23.75%; (3) Aspects of Ease of Use of the Media, which received a percentage of 30%; and (4) Aspects of Usefulness in Supporting Understanding and Attractiveness, which received a percentage of 12.5%. The

Table 5. Feasibility aspects of the teacher

Feasibility Aspects	Percentage
Suitability with The Material	28.75%
Media Display Presentation	23.75%
Ease of Use of Media	30%
Usefulness in Supporting Understanding and Attractiveness	12.5%

results of the feasibility test conducted by the researchers, based on teacher feedback, yielded an average score of 95%, categorizing it as "very feasible." Additionally, the teacher stated that the material in the Ekasi Monopoly learning media was delivered clearly and coherently. This assessment indicates that the learning media is highly beneficial in the teaching and learning process, especially in facilitating the delivery of the Indonesian geographical location material to fifth-grade students at SDN Tambakaji 05 Semarang.

Meanwhile, 18 students in the experimental class evaluated the media with a score of 91.6%, also placing it in the "very feasible" category. Researchers prepared a questionnaire for the students consisting of 13 questions, with a maximum score of 65, covering 5 aspects. The assessment of these 5 aspects is explained in the table below.

Table 6. Feasibility aspects of the students

Feasibility Aspects	Percentage
Media Display	21.1%
Content Component	28.2%
Ease of Media Use Aspect	28.2%
Language Use Aspect	7.05%
Media Usefulness	7.05%

The table explains the feasibility aspects evaluated by students, which include: (1) Media Display Aspect, which received a percentage of 21.1%; (2) Content Component Aspect, which received a percentage of 28.2%; (3) Ease of Media Use Aspect, which received a percentage of 28.2%; (4) Language Use Aspect, which received a percentage of 7.05%; and (5) Media Usefulness Aspect, which received a percentage of 7.05%. The results of the feasibility test conducted by the researchers with students yielded an average score of 91.6%, categorizing it as "very feasible." Additionally, students indicated that the media was very engaging, making learning through game-based media more enjoyable and easier to understand. During the learning process, students appeared enthusiastic about following the game's flow and actively participated in answering questions on the game cards. The interaction between students and the learning media was effective, thereby supporting their understanding of the material.

Thus, the results of the responses from teachers and students indicate that the Ekasi Monopoly media is highly feasible for use as a learning tool in teaching the geographical location of Indonesia. This is because it not only effectively conveys the material but also enhances students' motivation and fosters active participation in the learning process.

The table above presents the percentage of responses from both teachers and students. The students' responses received a percentage of 91.6%, while the teachers' responses received 95%. Both assessments fall into the "very feasible" category. Considering the results of the validity tests conducted by media experts, material experts, and the responses from teachers and students, the use of the Ekasi Monopoly Game Media in the classroom is deemed feasible.

Effectiveness of Learning Using the Ekasi Monopoly Game Media

Through the analysis of pretest and posttest results in both the experimental and control groups, the effectiveness of the Ekasi Monopoly Game Media in teaching the material on Indonesia's Geographical Location can be assessed based on student learning outcomes. The pretest scores are obtained through questions

administered before using the Ekasi Monopoly Game Media, while the posttest scores are obtained after students have engaged with the media. The bar chart below illustrates the pretest and posttest results of fifth-grade students at SDN Tambakaji 05 Semarang.

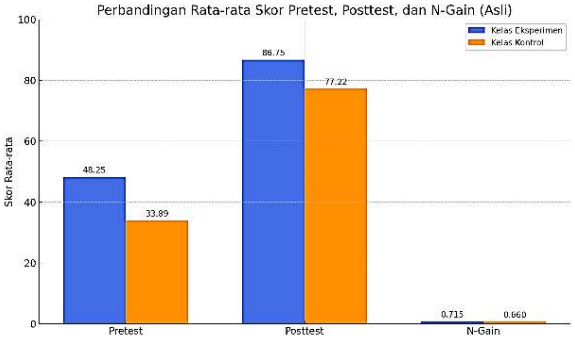


Figure 1. Results of pretest, posttest, and n-gain values of experimental class and control class

Based on the pretest, posttest, and N-Gain data displayed in the diagram, it is evident that the average student learning outcomes in both the experimental and control classes have significantly increased. The experimental class showed an improvement of 38.5 points, with the average pretest score increasing from 48.25 to an average posttest score of 86.75. Then the N-Gain value also increased to 0.715. Meanwhile, the control class demonstrated an improvement of 43.33 points, with the average pretest score of 33.89 rising to 77.22 in the posttest, and an N-Gain value of 0.660. These data indicate that the learning outcomes for the Social and Natural Science material on the geographical location of Indonesia in fifth-grade students at SDN Tambakaji 05 Semarang have improved, suggesting that the learning treatment applied had a positive impact on student learning outcomes. To assist in the data analysis procedure, researchers used SPSS version 26. The normality test was employed to determine whether the study data followed a normal distribution. For this purpose, the Shapiro-Wilk test in SPSS version 26 was used. According to the research criteria, data is considered to follow a normal distribution if the significance value (sig.) of the normality test is greater than 0.05. Conversely, data is considered not to follow a normal distribution if the significance value (sig.) of the normality test is less than 0.05 (Lestari et al., 2021).

The results of the normality test using the Shapiro-Wilk test on pretest data show a statistical value of 0.937 with 20 degrees of freedom (df) and a significance value of 0.211. Since this significance value is greater than 0.05, the pretest data is declared to be normally distributed. Meanwhile, the normality test results for the posttest data show a statistical value of 0.918 with 20 degrees of freedom (df) and a significance value of 0.090. This significance value is also greater than 0.05, so the posttest data is likewise declared to be normally distributed. Therefore, based on the results of the normality tests for both pretest and posttest data, both data sets meet the assumptions of normality and are suitable for proceeding to the next stage of statistical analysis using the paired t-test.

If the normality test results of the study data indicate that it is normally distributed, then it satisfies the requirements for conducting a paired sample t-test (Saadah & Anwar, 2023). To compare the learning outcomes of fifth-grade students at SDN Tambakaji 05 Semarang before and after utilizing the Ekasi Monopoly game media on the social and natural science learning material concerning the geographical location of Indonesia, the paired samples t-test is employed. The purpose of this test is to determine whether there are significant differences in the students' learning outcomes before and after exposure to the Ekasi Monopoly game media. The bar chart below presents the results of the paired samples t-test in the experimental and control classe. Comparison of Means, t-values, df, and Significance (Experimental and Control Classes)

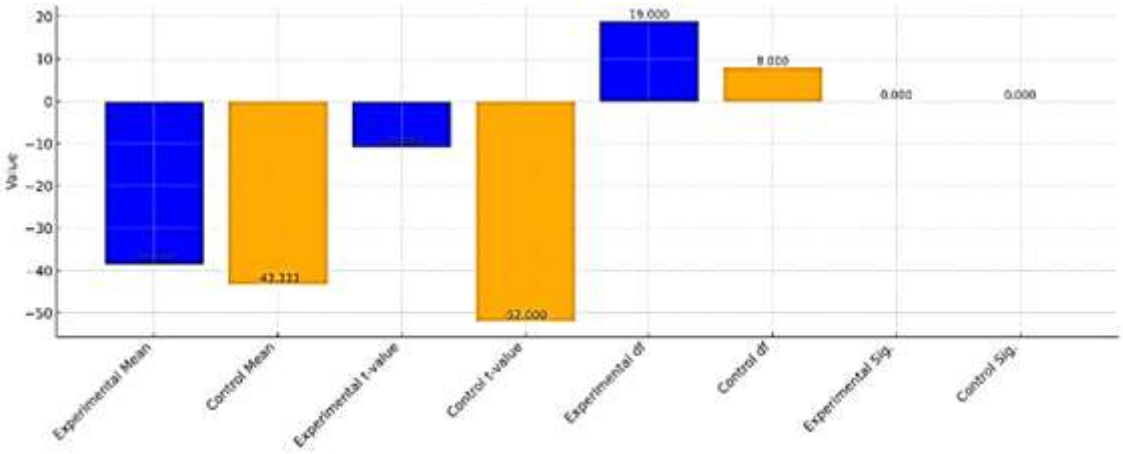


Figure 2. Results of the paired samples t-test in the experimental and control classes

The bar chart above shows the results of the paired samples t-test for both the experimental and control classes. There is a significant difference between student learning outcomes before (pretest) and after (posttest) the use of the Ekasi Monopoly game media in teaching social and natural science learning material on the geographical location of Indonesia at SDN Tambakaji 05 Semarang. The criteria for the paired samples t-test are as follows: if the Sig. (2-tailed) > 0.05, then there is no significant difference between the pretest and posttest results. If the Sig. (2-tailed) < 0.05, then there is a significant difference between the pretest and posttest results. The bar chart indicates that the use of Ekasi Monopoly Game Media has a significant impact on student learning outcomes. In the experimental class, the mean is -38.500, the t value was -10.884, with 19 degrees of freedom and a significance level of 0.000, which is less than 0.05. In the control class, the mean was -43.333, the t value was -52.000, with 8 degrees of freedom and a significance level of 0.000, also less than 0.05. Therefore, there is a significant difference between the pretest and posttest results in both the experimental and control classes.

To further assess the practical significance of the improvement in learning outcomes after using the Ekasi Monopoly Game Media, the researchers calculated the effect size using Cohen's d formula. The Cohen's d value obtained in the experimental class was 3.7, while in the control class it was 19.7; both values indicated a very large effect size. According to Cohen's (1988) guidelines (d = 0.2 for small, 0.5 for medium, and 0.8 for large), these results suggest that the application of the Ekasi Monopoly Game Media not only produces statistically significant differences in student learning outcomes but also results in a practically meaningful improvement.

This substantial effect indicates that the use of the monopoly game media has a strong impact on students' understanding of the material related to Indonesia's geographical location. It underscores the importance of interactive and contextualized media in enhancing students' academic performance in social and natural science learning.

To determine whether the learning outcomes in this study have improved, a gain test was conducted after confirming that the data met the normality assumption and evaluating the paired samples t-test on the pretest and posttest data. The gain test is used to assess the improvement between the pretest and posttest scores (Saadah & Anwar, 2023). The results of the N-Gain Test for each question indicator based on the pretest and posttest scores are shown in the bar chart below.

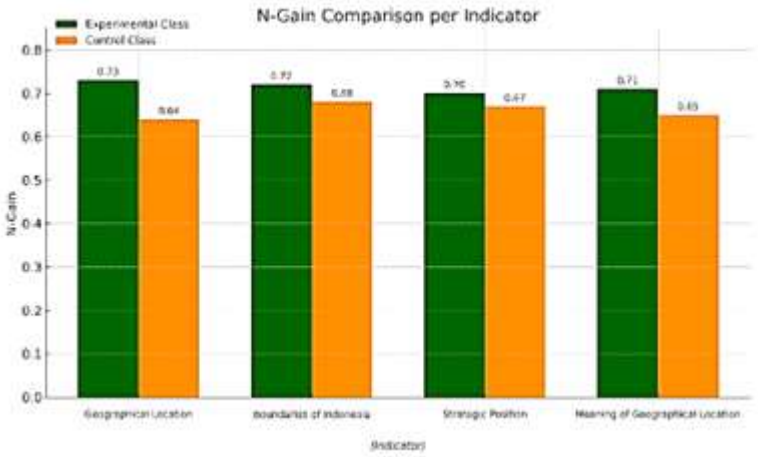


Figure 3. Comparison of n gain per indicator on pretest and posttest

The results of the comparison analysis of N-Gain values between the experimental and control classes for each indicator of the pretest and posttest questions are shown in Figure 3. The experimental class consistently demonstrated high N-Gain values across all indicators. The N-Gain value for the geographical location indicator was 0.73, for the boundaries of Indonesia indicator was 0.72, for the strategic position indicator was 0.70, and for the meaning of geographical location indicator was 0.71. Therefore, the average N-Gain value in the experimental class was 0.7150, which falls into the high category. In contrast, the control class showed lower N-Gain values: the N-Gain value for the geographical location indicator was 0.64, for the boundaries of Indonesia indicator was 0.68, for the strategic position indicator was 0.67, and for the meaning of geographical location indicator was 0.65. As a result, the average N-Gain value in the control class was 0.6600, which falls into the medium category.

This figure clearly shows that the use of Ekasi Monopoly learning media has a positive and effective impact on improving student learning outcomes across various aspects of the material. Notably, the "Astronomical Location" indicator showed the highest increase in the experimental class (0.74), indicating that the use of Ekasi Monopoly Game Media significantly enhanced students' understanding of the material on Indonesia's geographical location. This finding is consistent with previous studies, such as Muslichah et al. (2021), who reported an improvement of 0.68 using traditional monopoly-based media for science content (Muslichah et al., 2021), and Kurniawati et al. (2021), who reported an improvement of 0.72 for social studies learning using a modified board game (Kurniawati et al., 2021).

Several factors may have contributed to these high scores. First, the design of Ekasi Monopoly is visually appealing and aligns with students' cognitive levels, featuring provincial illustrations and question cards that are directly related to the learning indicators. Second, the social interaction during the game, where students collaborate and discuss geographical facts, helped reinforce their understanding. Lastly, the competitive and enjoyable nature of the game likely boosted motivation, which is known to enhance cognitive engagement and retention of the material.

Despite the positive results, the Ekasi Monopoly Game Media has some limitations. While it effectively conveys concrete geographical concepts, such as the geographical location and characteristics of provinces, it struggles to convey more abstract geographical concepts, such as the astronomical location of each province. However,

all students responded positively to this Monopoly game media. They were very enthusiastic, and it was clear that all students became active participants in the learning process using this media.

To overcome this limitation, future implementations can integrate digital augmentations, such as AR-based maps, or combine the game with interactive multimedia explanations for complex concepts. Teachers are also encouraged to complement this game with other strategies, such as inquiry-based learning or concept mapping, to deepen students' understanding. This research aligns with other studies that emphasize the importance of learning media in education (Adventyana Benedicta Dwi, 2023). To achieve satisfactory learning outcomes, teachers who effectively integrate media during instruction can help students gain a better understanding of the material (Wahyuningtyas & Sulasmono, 2020).

Media in the form of games are highly popular among students (Andhika et al., 2021). Learning media, such as Monopoly, can be developed and tailored to social studies content to meet the material and students' needs (Kurniawati et al., 2021). The use of Monopoly game media in the educational process has been proven to be effective, as it enhances student engagement and motivation for learning (Lestari et al., 2021). Classroom observations revealed that students actively engaged with the Ekasi Monopoly Game Media through collaborative strategies. For instance, when the group's pawn landed on East Kalimantan, they consulted the map and accompanying card to identify its relative location, engaging in discussions before selecting the correct answer. One student pointed to the map and said, "East Kalimantan is in the center of the island, to the right of West Kalimantan, right?" while another added, "It's close to the Makassar Strait!" This demonstrates how students used the elements of the game as tools for geographical reasoning. During the game, students shared roles: some rolled the dice, others moved the pawns, and some read and interpreted the challenge cards. This spontaneous role-sharing fostered collaboration, communication, and critical thinking. Teachers observed that even lower-ability students actively participated when encouraged by their peers.

To gain a better understanding of students' perspectives, short interviews were conducted after the lesson. One student mentioned, "If you learn from boards and cards like this, it's easier to understand which province is where. You can play directly, not just memorize." Another said, "It's fun, I now know Indonesia's provinces and capitals that I was confused about before." These reflections suggest that the game format helps support motivation and clarifies concepts. The use of Monopoly media can enhance student learning outcomes, as Monopoly games are effective in helping students assimilate information and prevent boredom during learning (Nurhayati, 2022). Furthermore, the instructional model used in this study is based on the principles discussed by Plass et al. (2015), which emphasize the integration of motivation, cognitive engagement, and emotional involvement as key factors in creating a successful game-based learning environment (Plass et al., 2015).

CONCLUSION

Based on the results and discussion, it was found that there was a lack of student interest in learning Social and Natural Science, as well as limited use of learning media by teachers. This is due to the fact that teachers primarily rely on learning videos, and the teacher-centered lecture method is still commonly applied in classroom instruction. In response to this, the researchers developed the Ekasi Monopoly Game Media, which can be utilized in teaching Social and Natural Science outcomes. The aim of this study was to develop and test the Ekasi Monopoly Game as an educational and innovative tool to enhance student learning outcomes, particularly regarding Indonesia's geographical location. The study concluded that the Ekasi Monopoly Game

Media is both highly feasible and highly effective in improving students' learning outcomes in Social Science and Natural Science, particularly in the context of Indonesia's geographical location. The significant differences between pretest and posttest results ($p = 0.000 < 0.05$), alongside the high average N-Gain value of 0.7150, support this conclusion. These results suggest that integrating engaging, game-based learning media, such as Monopoly, can substantially improve students' understanding and motivation in Social and Natural Science education at the primary school level. Overall, the study demonstrates that the development of the Ekasi Monopoly Game Media has achieved very feasible and effective learning outcomes in Social and Natural Science content related to Indonesian geography for fifth-grade students at SDN Tambakaji 05 Semarang.

The development of this learning media has significant implications for basic education, as it allows students to more easily understand the material and stay motivated to learn through an enjoyable process. This media offers an interactive and alternative method for teachers to present content in a tangible and engaging format. However, this study has limitations, including the fact that it was conducted at only one school with a small sample size ($n = 29$), and its effectiveness was tested on just one topic. Further research is recommended to implement and evaluate this media in different schools and across a broader range of Social and Natural Science topics to assess its generalizability and long-term impact. Additionally, teachers can use this media as an alternative to traditional lectures and adapt the game to suit the specific needs of the material being taught. Through the development of this learning media, researchers hope that teachers will be encouraged to use concrete media for other subject areas as well.

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