

Development of a Problem-Based Monopoly Game Integrating Contextual Social Issue Challenges for Elementary Social Studies Learning

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Abstract

The limited use of interactive and problem-oriented learning media in elementary social studies classrooms has contributed to low student engagement and weak problem-solving skills. Although game-based learning has gained increasing attention, studies integrating Monopoly game mechanics with Problem-Based Learning (PBL) in elementary social studies remain limited. Therefore, this study aimed to develop a PBL-integrated Monopoly learning media and examine its validity and practicality. This study employed a Research and Development (R&D) approach using a 4D model consisting of define, design, develop, and dissemination stages. The subjects involved media experts, material experts, linguists, teachers, and fourth-grade elementary school students. Data were collected through validation questionnaires, teacher and student response questionnaires, cognitive tests, and observations of student activities. Data were analyzed using descriptive quantitative and qualitative techniques. The findings showed that the developed media achieved high validity scores, namely 92.0% from media experts, 91.6% from material experts, and 93.3% from language experts. Validators nevertheless suggested improvements related to instruction clarity, visual consistency, and optimization of PBL activities within the game. Practicality results also showed positive responses from students (93.2%) and teachers (93.5%), although some students initially experienced difficulties in understanding the collaborative problem-solving process. Therefore, the developed PBL-integrated Monopoly media can be categorized as valid and practical for elementary social studies learning, while further refinement and broader implementation are still needed to optimize its instructional effectiveness.

Keywords: Media monopoly; Problem based learning; Social studies learning; Elementary school.

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INTRODUCTION

Elementary social studies learning is still frequently dominated by conventional instructional methods that emphasize memorization rather than problem-solving and active student participation, leading to low engagement and limited development of critical thinking skills among students (Benvenuti et al., 2023). Changes in education policies and systems require schools to continuously adapt

through creative and innovative learning to align with current developments and student needs (Manca & Delfino, 2021; Affandy et al., 2024). The shift in learning paradigms from conventional approaches to more flexible, student-centered learning requires teachers not only to master the teaching material but also to design learning strategies and media appropriate to the developmental characteristics of elementary school students (Endres et al., 2021).

Social Studies (IPS) is a strategic subject in shaping students' knowledge, social skills, and national attitudes and values (Russell & Waters, 2021; Murfiah et al., 2024; Putri et al., 2024). Social studies learning in elementary schools is not only oriented toward mastery of cognitive aspects, but also plays a crucial role in fostering critical thinking, tolerance, and social responsibility as part of affective learning outcomes (Vodá et al., 2022; Boadu et al., 2022). In this context, learning outcomes are understood as relatively permanent changes in behavior resulting from students' learning experiences, encompassing both cognitive and affective domains (Baoguo & Xiaobing, 2024). However, social studies learning in the observed elementary school still showed several instructional problems. Based on preliminary classroom observations in grade IV, students demonstrated limited participation during discussions on cultural diversity topics, and many were unable to relate the material to real-life social issues. Teacher interviews also indicated that students often experienced difficulties in analyzing social problems contextually because classroom instruction remained focused on conventional explanation methods and textbook-based learning with limited use of interactive media.

This condition results in low student engagement, minimal participation in discussions, and suboptimal learning outcomes. These poor learning outcomes are influenced by various internal and external factors, including learning motivation, learning methods, and limitations of the learning media used (Kasemy et al., 2022; Mulang, 2021).

Available learning media, such as textbooks and illustrations, are not yet fully capable of bridging complex social studies concepts into concrete and easily understood concepts for students. Yet, learning media plays a crucial role as a supporting tool that bridges learning messages from teachers to students and enhances the effectiveness of material understanding (Haleem et al., 2022). Media also serve to enrich the learning experience through a multisensory approach and aid in the visualization of abstract concepts (Fries et al., 2021; Chit et al., 2024). Therefore, teachers are required to be creative and innovative in developing relevant, engaging, and contextual learning media. One alternative learning media that has the potential to improve the quality of social studies learning is game-based learning. Educational games can create a dynamic, enjoyable, and participatory learning environment, as well as increase student motivation and engagement (Schrader, 2022; Peláez & Solano, 2023). Educational games designed to suit students' psychological characteristics and cognitive developmental stages can encourage active engagement, strengthen conceptual understanding, and improve attention and concentration during learning (Chou et al., 2023; Bontchev et al., 2021).

Monopoly has the potential to function as an interactive learning medium when its gameplay mechanics are pedagogically modified. In this research, the random and competitive elements of the Monopoly game were balanced with Problem-Based Learning (PBL) activities through the integration of contextual problem

cards, group discussion sessions, and reflective decision-making tasks. These modifications were intended to ensure that problem-solving processes remained the primary focus of learning rather than merely game competition. Previous studies have also reported that Monopoly-based educational media can support conceptual understanding, student engagement, and cooperative learning in classroom settings (Latief & Novalia, 2023; Lew & Saville, 2021; Irhadtanto et al., 2024). Through gameplay simulations integrated with contextual problem cards and collaborative discussion tasks, students were guided to engage in analytical thinking and problem-solving rather than merely relying on chance-based game elements. These modifications allowed the Monopoly media to support practical knowledge application, critical thinking development, and learning motivation (Edison & Aman, 2024; Muzkiyah & Nugroho, 2024). To ensure the use of game media is not merely recreational, integration with problem-solving-oriented learning models is necessary.

The Problem-Based Learning (PBL) model was selected because its learning phases could be embedded within the structure of the Monopoly game. The orientation phase was implemented through contextual social issue scenarios, the organizing phase through collaborative group gameplay, the investigation phase through problem-analysis tasks on game cards, and the presentation phase through group discussion and reflection activities after gameplay. Through this integration, the Monopoly media was designed not merely as a recreational activity, but as a structured problem-solving learning environment that actively engaged students in contextual inquiry processes (Ghani et al., 2021). Various studies have consistently shown that the application of PBL in social studies learning has a positive impact on improving learning outcomes, critical thinking skills, and active student engagement (Ardiyanti & Pritasari, 2024; Dharma & Lestari, 2022; Thesalonika & Sijabat, 2024).

However, previous empirical studies have shown that most research on developing monopoly media still focuses on visual aspects, practicality, and improving learning outcomes in general, without systematically integrating a Problem-Based Learning approach. Furthermore, strengthening cognitive and affective aspects in an integrated manner in social studies learning has not been studied in depth. Therefore, the novelty of this study is reflected in the instructional redesign of Monopoly media through the integration of structured PBL phases within the gameplay system. Unlike previous Monopoly-based learning media, which primarily focused on increasing motivation and conceptual understanding, the developed media in this study explicitly incorporated contextual problem scenarios, collaborative inquiry activities, analytical discussion tasks, and reflective presentation processes aligned with PBL syntax. This integration was intended to strengthen the balance between game interaction and pedagogical problem-solving processes in elementary social studies learning. The media developed is designed to present contextual issues related to the diversity of Indonesian culture, so that it is expected to be able to support social studies learning that is more interactive, meaningful, and relevant to the lives of elementary school students.

RESEARCH METHOD

This study employed a research and development (R&D) method with the aim of developing a monopoly media for social studies learning based on problem-based learning (Ansyorie et al., 2022; Ediyani et al., 2020; Lee et al., 2017). The development model used was the 4D model proposed by Thiagarajan, Semmel, and Semmel, which consists of four main stages: Define, Design, Develop, and Disseminate (Hariyanto et al., 2020; Rizki et al., 2016). This study used a 4D development model adapted from the 4D model, consisting of define, design, and develop, and dissemination stages, because the research focused only on product development and limited trials with students.

This study was conducted from February to August 2025 at SDIT Insan Madani Jakarta, SDN Kebon Pala 05 East Jakarta, and SDN Kebon Pala 11 East Jakarta. The research was carried out within the context of the currently implemented elementary school curriculum to ensure the relevance of the developed media to contemporary instructional practices. The subjects were fourth-grade elementary school students, who were gradually involved in the trial process of PBL-based social studies learning media monopoly. The selection of fourth-grade students was based on the suitability of the characteristics of students' cognitive and social development with the design of the educational game media developed and its relevance to the social studies material at that level. The following is a picture of the development research flow using the 4D model in this study.

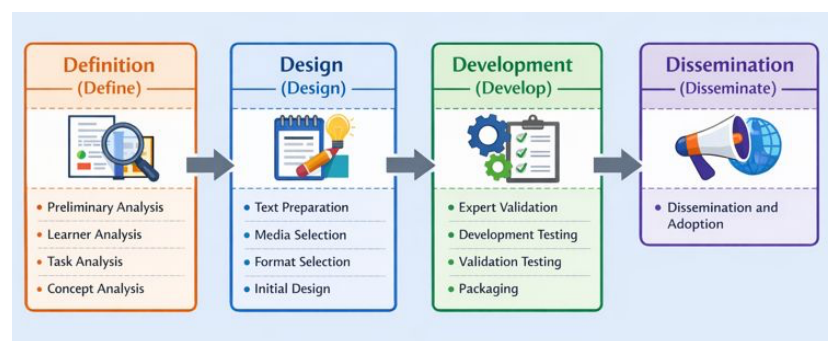


Figure 1. Stages of 4D Model Development

The Define stage is the initial development phase, aimed at identifying learning needs and issues encountered in social studies instruction in elementary schools. This stage includes an initial analysis of the current social studies learning environment, the characteristics of fourth-grade students, and an analysis of learning materials focused on the topic of Indonesian cultural diversity. The analysis indicates that students require learning media that are concrete, contextual, and able to actively engage them in the learning process. Furthermore, this stage also formulates learning objectives, which serve as the basis for developing the content and mechanics of the Monopoly game based on Problem-Based Learning.

The Design stage aims to develop an initial design for the learning media based on the analysis results from the Define stage. This stage focused on designing the Monopoly media components and embedding the five phases of Problem-Based Learning (PBL) into the gameplay mechanics. Problem orientation was implemented through contextual issue cards, student organization through collaborative group play, investigation through discussion and problem-analysis

tasks, solution development through decision-making activities during the game, and evaluation through group presentations and reflection sessions after gameplay. These integrations were intended to ensure that the learning process emphasized problem-solving activities rather than merely competitive gameplay. The media is designed so that each component of the game represents contextual social studies issues, encouraging students to think critically, discuss, and collaborate in groups. The initial media design is compiled into a prototype ready for development and feasibility testing. The Development stage is the core stage of this research, focusing on product validation and testing. At this stage, the designed monopoly media prototype was developed into a test-ready product, then trialed with fourth-grade students as research subjects. The trial results were used as the basis for revising and refining the media to make it more feasible and user-friendly for students.

The Dissemination stage was conducted after the media was declared feasible based on the results of the trial with students. At this stage, the PBL-based social studies learning monopoly media was prepared as a final product that could be used as a learning tool in elementary schools. Dissemination was carried out on a limited basis through the use of the media in the research school and the provision of media usage guidelines for teachers and students. This stage aimed to ensure that the developed media could be optimally utilized in social studies learning and had the potential to be implemented in other schools with similar characteristics.

Data were collected using validation instruments completed by media, material, and language experts, as well as teacher and student response questionnaires during product trials. The expert validators consisted of academics and practitioners with expertise in instructional media design, elementary social studies education, and language assessment. In addition, cognitive tests and classroom observation sheets were employed to examine student engagement and learning activities during the implementation of the PBL-integrated Monopoly media. The questionnaires were used to obtain data on the media's appeal, ease of use, and usefulness in helping students understand social studies material. The data obtained were analyzed using quantitative and qualitative descriptive analysis. Quantitative data were analyzed by calculating the average score and percentage of media suitability, while qualitative data, in the form of comments and suggestions from students, were used as a basis for revising and refining the monopoly media product for social studies learning based on Problem Based Learning.

RESULTS AND DISCUSSION

The development of Geopoly (Monopoly Geography) learning media involved subject matter experts, media experts, linguists, and elementary school students as media users. The media development process employed a 4D development model, encompassing the stages of define, design, develop, and disseminate. The define stage included an analysis of social studies learning needs, a curriculum analysis, and an analysis of the characteristics of fourth-grade elementary school students. The analysis revealed that social studies learning still requires media that is concrete, contextual, and capable of fostering active student engagement, particularly on the topic of Indonesian cultural diversity. The next stage was the design of learning media, aligned with the fourth-grade social studies learning

The product developed is an educational monopoly game media packaged in one media package, consisting of a Geopoli game board, province cards, and play money. The game board is designed to represent the territory of Indonesia with provincial squares, while the province cards contain regional cultural information presented concisely and visually. Challenge and opportunity cards are designed to facilitate the syntax of Problem Based Learning through problem-oriented activities, investigation, discussion, and reflection. The media creation process includes content and visual design, game rule preparation, illustration design, and media printing in ready-to-use form. The image of the Geopoli (Monopoly Geography) media that has been developed is presented in Figure 2 below:





Geopoli Play Money



Geopoly Board

Figure 2. Geopoly Media

Geopoli learning media was developed as an integrated media package consisting of provincial cards, play money, and a Monopoly game board. The provincial cards are designed to represent all provinces in Indonesia, with each card containing regional identity along with unique cultural information presented concisely and visually, thus making it easier for students to understand Indonesia's cultural diversity comprehensively. Geopoli play money was developed by adapting all denominations of the rupiah currency, which serves as a means of simulating transactions and decision-making in the game, while also instilling the values of responsibility and cooperation. The Geopoli game board is designed to resemble a map of Indonesia with provincial grids integrated with the cards and a Problem Based Learning-based game mechanism, so that all media components complement each other in creating an interactive, contextual, and meaningful social studies learning experience for elementary school students. The developed media was then validated by experts and tested on students as a basis for assessing product feasibility and refinement.

Validity of Geopoly Media (Monopoly Geography)

The Geopoli (Monopoly Geography) media product produced in this research and development is a valid learning media and is suitable for use in Social Studies (IPS) learning in elementary schools. The Geopoli media validity test was conducted through an assessment by material experts, media experts, and language experts to assess the media's suitability in terms of content, appearance, educational function, and language aspects. Material validation was carried out by lecturers who have competence in the field of elementary school IPS education, while media and language validation were carried out by lecturers who are experienced in developing learning media and language. The summary of the Geopoli media validity test results obtained from the validators is then presented in the following table as a basis for determining the product's suitability before being used in IPS learning.

Table 1. Recapitulation of Media Expert Validation

No.	Assessment Aspects	Validator Value (%)	Category
1.	Visual Display	90,0	Very Valid
2.	Clarity of Information	87,5	Very Valid
3.	Media Completeness	95,0	Very Valid
4.	Educational Function	87,5	Very Valid
5.	Creativity and Innovation	95,0	Very Valid
Overall		91,0	Very Valid

Based on the validation results with a very suitable category, media experts assessed that the Geopoli monopoly board had an attractive visual appearance, harmonious color composition, and adequate completeness of media components. However, media experts suggested that the consistency of the visual design on the province cards and challenge cards be strengthened, especially in the size of the icons, fonts, and placement of visual elements, so that students can more easily recognize the function of each card during the game. In addition, simplifying the display of information on several monopoly board squares is recommended to avoid visual density that could potentially distract students' focus. Media experts also suggested adding icons supporting the Problem Based Learning syntax on certain boards or cards as markers for the stages of problem orientation, discussion, and reflection, so that the educational function of the media can be more optimal.

Table 2. Recapitulation of Material Expert Validation

No.	Assessment Aspects	Validator Value (%)	Category
1.	Material Suitability	91.7	Very Valid
2.	Accuracy of Content	91.7	Very Valid
3.	Contextuality	95,0	Very Valid
4.	Visual Relevance	83.3	Valid
Overall		90,4	Very Valid

The material experts assessed that the learning content contained in the Geopoli province cards was in accordance with the basic competencies of social studies for grade IV and was highly contextual to students' daily lives, as reflected in the high scores for the aspects of material suitability and contextuality. However, the material experts suggested that some of the cultural information on the province cards be enriched with brief explanations or additional contextual examples, especially for cultural elements that are relatively unfamiliar to students. In addition, strengthening the link between the problems on the challenge cards and social studies learning indicators is recommended so that the problem-solving process truly directs students towards achieving learning objectives. The material experts also suggested that the cultural illustrations on the cards and game boards be more visually adapted to the characteristics of the regions represented to strengthen the visual relevance and understanding of cultural concepts.

Table 3. Recapitulation of Language Expert Validation

No.	Assessment Aspects	Validator Value (%)	Category
1.	Grammar	95,0	Very Valid
2.	Word Choice	90.0	Very Valid
3.	Legibility	90.0	Very Valid
Overall		91,7	Very Valid

Linguists assess that the language used in the Monopoly board, province cards, and Geopoli game cards is in accordance with PUEBI rules, has a good level of readability, and uses vocabulary appropriate to the cognitive abilities of fourth-grade students. However, linguists suggest that some game instruction sentences on the Monopoly cards and board be simplified with a more concise and direct sentence structure, so that they are easier for students to understand when playing independently or in groups. In addition, the consistency of the use of key terms, such as cultural terms, game activities, and commands in the challenge cards, needs to be considered to avoid differences in interpretation. These editorial improvements are expected to improve reading fluency and clarify the learning messages intended to be conveyed through Geopoli media.

The Practicality of Geopoli Media (Monopoly Geography)

The Geopoli (Monopoly Geography) media product developed was also assessed for its practicality in Social Studies (IPS) learning in elementary schools. The practicality of the Geopoli media was obtained through the results of a user response questionnaire, namely fourth-grade students and teachers, which was given during the media use trial activity. The practicality assessment focused on aspects of ease of use, media attractiveness, clarity of game rules, language suitability, and the usefulness of the media in helping students understand the IPS material. The summary of the results of the Geopoli media practicality test is then presented in the following table as a basis for determining the level of media usability in IPS learning in elementary schools.

Table 4. Recapitulation of the Results of the Geopoli Media Practicality Test by Students

No.	Assessment Aspects	Response Score (%)	Average (%)
1.	Visual Display	92.0	92.0
2.	Language	90.0	90.0
3.	Material Suitability	94.0	94.0
4.	The Attraction of Playing	96.0	96.0
5.	Benefits of Learning	94.0	94.0
Overall Average			93.2
Category			Very Practical

The high level of practicality demonstrated that the Geopoli media was well accepted by students during classroom implementation. This finding was influenced by the attractive visual design, the interactive nature of the gameplay, and the integration of contextual social problems that encouraged collaborative discussion among students. Nevertheless, classroom observations also revealed that some students initially experienced difficulties in understanding the sequence of

problem-solving activities integrated into the game mechanics. The aspects of material suitability and learning benefits also received a very good rating, indicating that the media helps students understand social studies material more easily through playing activities. In addition, the visual appearance and language aspects were considered very practical, which indicates that the media design is attractive, easy to use, and has language that is appropriate to the developmental level of elementary school students.

Table 5. Recapitulation of the Results of the Geopoli Media Practicality Test by Teachers

No.	Assessment Aspects	Response Score (%)	Average (%)
1.	Material Suitability	92.0	92.0
2.	Clarity of Information	90.0	90.0
3.	Visual Appeal	94.0	94.0
4.	Media Usability	96.0	96.0
5.	Benefits of Learning	95.0	95.0
6.	Innovation	94.0	94.0
Overall Average			93.5
Category			Very Practical

The results of the Geopoli media practicality test, based on teacher responses, showed an average score of 93.5%, categorized as very practical. The usability aspect of the media received the highest score, indicating that the media is easy to use and can be effectively integrated into social studies learning in the classroom. The learning benefits and innovation aspects also received very good ratings, indicating that the Geopoli media is considered capable of increasing student interest and motivation and providing innovative learning alternatives. Furthermore, the aspects of material suitability, information clarity, and visual appeal received high scores, indicating that the media aligns with the curriculum, is easy for teachers and students to understand, and is attractive for use in social studies learning in elementary schools.

Overall, the research results indicate that the Geopoli (Monopoly Geography) media developed has a very high level of validity based on assessments by media experts, material experts, and language experts. These findings indicate that the visual design, component completeness, content accuracy, and linguistic aspects of the media are appropriate for the characteristics of elementary school students and the demands of the curriculum. Theoretically, valid learning media must be able to represent material accurately, communicatively, and align with learning objectives (Ediyani et al., 2020; Lubis et al., 2023). High validity in terms of material and contextuality also confirms that the social studies content presented is relevant to students' daily lives, in line with Arsita et al.'s (2025) view that meaningful social studies learning must link concepts to students' social realities.

Media expert validation results indicated that Geopoli received excellent ratings for visual appearance, creativity, and educational function. This confirms that using educational board games with engaging visual designs can increase student engagement and focus. These findings align with research by Byun and Loh (2015) and Holbrey (2020), which found that visually and interactively designed game-based media can increase learning engagement and create a more participatory

classroom atmosphere. Furthermore, the comprehensiveness of Geopoli's media components, such as the game board, province cards, and play money, supports the principles of multisensory learning, which is considered effective in helping students understand abstract concepts (Kansil et al., 2024).

In terms of material validity, Geopoli received very high ratings, particularly for its suitability to core competencies and the contextuality of Indonesian cultural materials. These findings reinforce the argument that good social studies learning media must be able to instill conceptual understanding as well as social and national values (Angriani et al., 2025; Zevin (2015). The integration of local cultural elements in the province cards and game challenges also supports a contextual learning approach, as proposed by Prosser & Sze (2014), who argue that problem-based learning is more effective when the issues raised are close to students' real-life experiences.

In addition to validity, the results of the practicality test indicate that Geopoli media is highly practical by students and teachers. Students considered the media easy to use, engaging, and helpful in understanding social studies material through play activities. Teachers also assessed the media as easy to integrate into learning and able to increase student interest and motivation. These findings align with research by Nadeem et al. (2023), which states that game-based learning media has advantages in increasing student motivation, active participation, and emotional engagement. High practicality also reflects that the media has met usability and instructional criteria.

Furthermore, the integration of Problem-Based Learning (PBL) in the Geopoli media design strengthens the quality of social studies learning. Game mechanisms that encourage students to discuss, make decisions, and solve cultural problems collaboratively align with the characteristics of PBL, which positions students as active subjects of learning (Ceker & Ozdamli, 2016; Salim et al., 2024). Various studies have shown that PBL is consistently able to increase student engagement, critical thinking skills, and conceptual understanding in social studies learning (Nelson, 2016; Williamson, 2023). Thus, the results of this study confirm that the development of PBL-based monopoly media is not only valid and practical but also has strong potential to support more meaningful, contextual social studies learning, and is oriented towards strengthening the cognitive and affective competencies of elementary school students.

CONCLUSION

The developed Geopoli learning media shows that integrating Problem-Based Learning (PBL) into Monopoly gameplay can create a more contextual, collaborative, and analytical learning experience in elementary social studies education. Unlike conventional Monopoly learning media, the developed product emphasizes structured problem-solving activities through contextual challenges, group investigation, and reflective discussion, thereby supporting students' critical thinking and active participation during learning, based on the responses of students and teachers in learning Social Studies (IPS) in elementary schools. Geopoli media has been proven to be suitable for use as an interesting, easy-to-use, and relevant learning media that accommodates elementary students' preference for interactive visual learning, collaborative activities, and contextual exploration, particularly in

learning the topic “My Indonesia is Rich in Culture” in accordance with current curriculum demands. Therefore, it is recommended that Geopoli media be used as an alternative media for learning Social Studies in elementary schools, further developed through future research focusing on the development of hybrid or digital-based Geopoli media, as well as its integration into other social studies themes that involve contextual and complex social problems. In addition, broader implementation across different educational levels and learning environments is recommended to examine its effectiveness in enhancing students’ critical thinking and collaborative problem-solving skills.

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