

## Implementation of Learning Media with the Concept of "Prop Hunt - QR Coin" to Increase Student Learning Participation in IPS Subjects

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**Abstract:** This study aims to develop the "Prop Hunt – QR Coin" learning media to enhance student participation in Social Studies (IPS) learning. Employing a Research and Development (R&D) approach with the Design Thinking model, the media integrates gamification and QR Code technology. Conducted in class 8F Tahfidz at SMP Laboratorium Universitas Negeri Malang in 2025, the results showed an increase in student participation from an average score of 40 to 82, with 88% of students meeting the completion criteria. The media effectively motivated students and facilitated interactive learning. Recommendations for future research include expanding implementation to other subjects and incorporating digital literacy training.

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## Introduction

Learning media plays a crucial role in supporting the effectiveness of the educational process, especially in the era of globalization which demands a contextual learning approach and is relevant to the needs of the learning environment. However, many learning media used today are still conventional, less interactive, and unable to accommodate the learning characteristics of students optimally (Fatmawati, 2021). This challenge is exacerbated by the rapid development of technology, which requires adaptation in the development of learning media to remain relevant to 21st century needs, such as critical thinking skills, collaboration, and digital literacy.

To overcome these limitations, the development of technology-based learning media is a strategic solution. Effective learning media must be able to facilitate students' learning needs, integrate modern technologies such as augmented reality, artificial intelligence, and interactive multimedia, and support the flexibility of space and time in the educational process (Pena-Ayala, 2021). In the last six years (2019-2025), learning technology has developed rapidly. Data from UNESCO (2023) shows that the use of digital platforms and AI-based applications in global education increased by 65%, with the adoption of technologies such as virtual reality (VR) and gamification increasing student engagement by

40%. In addition, the EdTech Review (2024) report notes that QR code-based interactive learning media and mobile learning have become major trends, enabling faster and more efficient accessibility of materials, especially in regions with limited infrastructure.

Recent research confirms that technology-based learning media not only functions as an information delivery tool, but also as a stimulator of students' motivation, creativity, and higher order thinking skills (HOTS) (Gustina, 2021). Media such as digital platforms, learning applications, and gamification-based technologies have been shown to increase student participation and understanding (Nurfadhillah, 2021). However, although technologies such as AI and AR have been widely adopted, the application of learning media based on specific gamification concepts, such as the use of QR codes in interactive learning, is still limited, especially in Social Studies subjects.

Although the development of educational technology shows significant progress, there is still a gap in the development of learning media that combines innovative gamification concepts with contextual approaches to increase student participation. Many previous studies focus on technologies such as VR or AI in general, but less on exploring the potential of simple yet interactive concept-based learning media, such as QR codes, that can be integrated in social studies learning to increase student engagement. In addition, teachers as educational facilitators often do not have sufficient competence to develop and implement technology-based learning media optimally (Haug & Mork, 2021).

The development of innovative and interactive learning media is an urgent need to prepare a competent and adaptive young generation in the modern era. Systematically designed learning media can increase student motivation, interest, and understanding, while supporting HOTS learning that is essential to face the challenges of the 21st century (Nurfadhillah, 2021). In this context, the research that I developed as a PPG student prospective teacher, entitled Implementation of Learning Media with the Concept of "Prop Hunt-QR Coin" to Increase Student Learning Participation in Social Studies Subjects, aims to fill the research gap by developing interactive and contextual gamification-based learning media. This research is expected to make a practical contribution in increasing student engagement and the effectiveness of social studies learning in schools.

## **Research Method**

This research applies a Research and Development (R&D) approach with a Design Thinking model to design and develop concept-based learning media "Prop Hunt - QR Coin" to increase student learning participation in Social Studies subjects. The R&D approach was chosen because it enables systematic product development through cycles of research, design, testing, and revision to produce effective and innovative solutions (Borg & Gall, 2019). The Design Thinking model is integrated in the R&D approach because it focuses on user needs, is collaborative, and supports the creative process in creating solutions relevant to the learning context (Razzouk & Shute, 2020).

The stages of developing learning media in this study follow the five steps of Design Thinking which are adapted to the R&D framework, namely:

1. Empathize: This stage aims to understand the needs, challenges, and characteristics of students in class 8F Tahfidz SMP Laboratorium State University of Malang in social studies learning. Observations, interviews, and questionnaires were conducted to identify factors that influence low learning participation, such as the lack of interactive media and student motivation.
2. Define: Based on the data from the Empathize stage, the main problem was formulated, namely low student learning participation in social studies learning due to learning media that is less interesting and does not support active involvement.
3. Ideate: At this stage, creative ideas were developed to design the "Prop Hunt - QR Coin" learning media. This media integrates the concept of game-based gamification with QR Code technology, which allows students to access learning challenges interactively through scanning QR codes (Chou, 2021).
4. Prototype: The learning media prototype is developed in the form of a card or coin called "QR Coin" and printed paper containing QR codes connected to social studies learning challenges. The prototype is designed to provide a fun learning experience and support student engagement.
5. Test: The prototype was tested in class 8F to evaluate its effectiveness in increasing students' learning participation. Testing involved observation, questionnaires, and analysis of student engagement, with revisions made based on feedback to refine the product.

This R&D approach with the Design Thinking model is supported by recent research showing that gamification-based learning media development can increase student motivation and engagement by up to 50% in the learning context (Sailer & Homner, 2020). In addition, the use of QR Code technology in education has been shown to ease access to materials and improve learning efficiency, especially in resource-constrained environments (Hsu & Chen, 2022). Thus, this approach enables the development of innovative, contextualized, and student needs-oriented learning media.

## **Result and Discussion**

### **Literature Review**

#### **Learning Media**

Learning media acts as an essential intermediary tool in conveying information, both to individuals, groups, and the wider community. In the context of education, learning media is a means used by teachers to communicate learning materials, values, and skills to students. The existence of learning media is very important in supporting the process of strengthening material understanding, because effective media can facilitate students to gain knowledge, develop skills, increase learning satisfaction, and achieve optimal learning outcomes. Learning media can be visual, audio, or a combination of both, depending on the needs and learning objectives (Rahmawati, 2021).

Technological developments have driven significant transformations in learning media development, especially through game-based learning approaches. Game-based learning media, both in digital and non-digital formats, are proven to be more effective in increasing student engagement and motivation than traditional methods (Srimulyani, 2023). Research by All et al. confirms that the game-based learning approach can increase student engagement up to 30% higher than conventional methods, especially in subjects that require

conceptual understanding such as Social Science (Social Studies) (All., Castellar., Looy, 2020). In addition, well-designed learning media should consider learners' characteristics, learning objectives, and local cultural context to ensure its relevance and effectiveness. Therefore, the development of learning media requires a systematic approach that includes design, evaluation, and testing stages.

Recent research has also highlighted the importance of integrating innovative technologies in learning media. According to Vlachopoulos and Makri, the use of technologies such as QR codes and mobile learning applications can improve accessibility and interactivity in the learning process, especially in educational environments with limited resources (Vlachopoulos & Makri, 2021). This approach allows students to access materials independently and interactively, which in turn increases learning participation and motivation. In addition, research by Papadakis shows that technology-based learning media that incorporate gamification elements, such as point-based challenges or adventure-based games, can improve students' critical thinking and collaboration skills (Papadakis, 2022).

In the context of the research being developed, namely the Implementation of Learning Media with the Concept of "Prop Hunt-QR Coin" to Increase Student Learning Participation in Social Studies Subjects, this literature review strengthens the relevance of using gamification-based learning media. The concept of "Prop Hunt-QR Qoin" utilizes QR code technology and game elements to create an interactive and engaging learning experience, which is in line with the findings of All et al and Vlachopoulos-Makri. It is designed to address low student participation in social studies learning by providing an approach that is contextualized, fun, and supports active student engagement. The development of this media also involves systematic evaluation to ensure its effectiveness in achieving learning objectives, as suggested (Srimulyani, 2023).

### **Social studies learning**

Social Studies is a subject that is composed of several disciplines. Social studies consists of disciplines such as Geography, Economics, and Economics which are all contained therein (Setiana, 2019). As an integrated lesson, social studies in terms of content is explained more simply from the material that supports it. the purpose of learning Social Studies (IPS) is to develop students' abilities to understand social phenomena through an interdisciplinary approach that includes geography, history, sociology, and economics. The main purpose of social studies is to equip students with knowledge, critical thinking skills, and social attitudes that support them to become active citizens, responsible, and sensitive to social issues in local, national, and global environments (Hasan 2020).

In the last five years, the implementation of social studies learning in primary and secondary schools in Indonesia has faced various challenges and innovations, especially due to the Covid-19 pandemic. Online learning has been the main solution during the pandemic, but research shows that there are obstacles such as limited access to technology, lack of social interaction, and potential learning loss. Online learning in social studies at SD/MI in Pamekasan in 2019-2020 showed a decline in student learning outcomes due to lack of active engagement and adequate facility support (Sufiyanto, 2021). In addition, the integrated thematic approach implemented in Curriculum 2013 is often not optimal due to teachers' lack of insight in integrating social studies concepts contextually, thus affecting students' interest in learning.

Along with post-pandemic recovery, innovations in social studies learning began to develop with the use of game-based learning media and local environment-based approaches.

Previous research highlighted the importance of contextual and multicultural approaches in social studies learning to increase the relevance of material to students' lives (Amarudin, 2023). Media such as educational board games and study tour activities are starting to be adopted to encourage student engagement and critical thinking skills. However, problems such as the lack of teacher training and the lack of innovative teaching methods are still an obstacle. Efforts to develop social studies learning in the future need to focus on teacher training and the development of learning media that support active and meaningful learning.

The world of education is currently facing an era of advances in knowledge, getting demands that are focused on teachers as educational practitioners, who concretely meet directly with students, one of which is a social studies teacher. Teachers are required to plan and implement learning, one of which is social studies subjects in order to create a conducive learning environment and character. In addition, the current position of social studies as a basic science that teaches the ability of learners intellectually, emotionally, culturally, and the social soul of society from themselves (Ahdar et al, 2022).

## **Result and Discussion**

This study aims to develop and implement concept-based learning media "Prop Hunt - QR Coin" to increase student learning participation in Social Studies subjects in class 8F Tahfidz, SMP Laboratorium State University of Malang. Media development is carried out with a Research and Development (R&D) approach that integrates the Design Thinking model. Media implementation has been carried out during one learning cycle in the 2024 school year, with the material "Resistance of the Archipelago People to the Monopoly Policy of the Western Nations (Portuguese, Spanish, Dutch)". The following are the results and discussion based on the stages of Design Thinking.

### **1. Empathize**

Empathize stage was conducted to understand students' needs and challenges in social studies learning. Observations and interviews with 32 students in class 8F showed that 78% of students felt that social studies learning was less interesting because the media used were conventional, such as textbooks and lectures. As many as 65% of students stated that they were less motivated to participate actively due to the lack of interactive activities. This data indicates that students need learning media that are more dynamic, interactive, and relevant to their interests, such as game elements or digital technology.

### **2. Define**

Based on the findings of the Empathize stage, the main problem formulated is the low participation of students in learning social studies, which is caused by the lack of interactive and interesting learning media. Student participation is measured through indicators of activeness in discussion, involvement in group activities, and task completion. Initial observations showed that only 40% of students actively participated in class discussions before media implementation.

### **3. Ideate**

At the Ideate stage, the research team came up with the idea to develop the "Prop Hunt - QR Coin" learning media. This media combines the concept of gamification based on hunting game with QR Code technology. Each QR Code scanned by students contains learning resources, such as a short video about the people's resistance to the Portuguese in Maluku, a poster about the VOC monopoly, or a text about the struggle of Sultan Agung. This idea was chosen because QR Code technology is easily accessible through students' cellphones, and the game concept increases learning motivation.



#### 4. Prototype

The "Prop Hunt - QR Coin" media prototype was developed in the form of "QR Coin" cards and QR Code printed paper which were placed in various locations in the classroom, such as under the table or on the blackboard. Each QR Code is connected to digital learning resources relevant to the material of people's resistance to Western colonialism. This prototype was piloted in one learning cycle (2 meetings, 4 lesson hours in total) with a Discovery Learning approach, involving activities such as QR Code search, group discussion, and concept map development.



*Figure 1. QR Code containing Teaching Materials in the form of Posters*

#### 5. Test

Testing was conducted during one learning cycle on February 21 & 25, 2025. The implementation results showed a significant increase in student learning participation. Based on observation using the participation rubric (1-100 scale), the average score of student engagement increased from 40 (pre-implementation) to 82 (post-implementation). A total of 88% of students (28 out of 32 students) met the completion criteria for activeness in discussion and completion of LKPD. The student satisfaction questionnaire showed that 92% of students felt motivated to learn due to the fun game concept, and 85% stated that the QR Code facilitated access to learning materials. Concept maps produced by student groups achieved an average score of 78/100, with 75% of groups able to logically link Western monopoly policies with popular resistance. However, 12% of students still had difficulty analyzing cause-and-effect relationships due to limited digital literacy.

The implementation of the "Prop Hunt - QR Coin" media proved to be effective in increasing student learning participation, as shown by the increase in student engagement scores and positive responses. The Empathize and Define stages helped identify students' needs for interactive media, which is in line with Sailer & Homner's research, which states that gamification can increase student engagement by 50% (Sailer & Homner, 2020). The concept of "Prop Hunt" which integrates an object hunting game encourages collaboration and creativity, reflecting the Pancasila Student Profile (gotong royong and critical reasoning).

At the Ideate and Prototype stages, the use of QR codes as a medium for accessing learning materials supports flexibility and efficiency, as found by Hsu & Chen, who stated that QR codes increase the accessibility of learning in resource-constrained environments (Hsu & Chen, 2022). The implementation of one learning cycle shows that this media is able to facilitate Discovery Learning-based learning, where students actively seek information and construct their own knowledge, in accordance with the learning objective to analyze popular resistance to Western colonialism. However, a challenge found during the Test stage was the

limited digital literacy of some students, which affected their ability to analyze learning resources from the QR Code. This is in line with Chou's findings, which emphasize the importance of digital literacy training to support technology-based learning (Chou, 2021). For the next cycle, additional guidance in the use of technology and simplification of instructions on the LKPD are needed to make it easier to understand.

Overall, the "Prop Hunt - QR Coin" media successfully increased students' learning participation through a fun and interactive approach. This success shows the potential of gamification and QR Code technology in supporting social studies learning, especially in historical materials that require in-depth analysis. This research contributes to the development of learning media that is contextual and relevant to the needs of 21st century students.

## **Conclusion**

This research successfully developed and implemented the concept-based learning media "Prop Hunt - QR Coin" to increase student learning participation in Social Science (IPS) subjects in class 8F Tahfidz, SMP Laboratorium State University of Malang. Through a Research and Development (R&D) approach that integrates the Design Thinking model, this media is systematically designed with the stages of Empathize, Define, Ideate, Prototype, and Test. The results of implementation during one learning cycle on the material "Resistance of the Archipelago People to the Monopoly Policy of the Western Nation" showed a significant increase in student activeness, from an average score of 40 to 82, with 88% of students meeting the criteria for participation completeness. The concept of gamification and QR Code technology proved effective in motivating students, facilitating access to materials, and supporting Discovery Learning-based learning, in line with the Pancasila Student Profile which emphasizes mutual cooperation, creativity, and critical reasoning.

The "Prop Hunt - QR Coin" media not only increases student engagement, but also addresses the challenge of low learning participation due to less interactive conventional media. The use of QR codes allows quick access to digital learning resources, such as videos and posters, which are relevant to the needs of 21st century students. However, challenges such as limited digital literacy in some students indicate the need for additional guidance to optimize the effectiveness of the media. This research contributes to the development of innovative learning media that is contextualized, supports higher order thinking (HOTS) learning, and prepares students for global challenges through a fun and interactive approach.

## **Recommendation**

For further development, it is suggested that future research expand the implementation of "Prop Hunt - QR Coin" media to various other subjects, such as science or language, to test its flexibility and scalability. In addition, the development of a mobile application that integrates QR codes with student progress tracking features can increase the personalization of learning and make it easier for teachers to monitor participation. Further research should also consider digital literacy training for students and teachers to overcome technical barriers, as well as exploration of additional technologies, such as augmented

reality, to enrich the learning experience. These approaches can strengthen the gamification-based learning model and provide new insights into creating a more inclusive and adaptive learning environment.

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