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## Development of Interactive Learning Media Using Genially Based on Game-Based Learning

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## Abstract

This study aims to develop interactive learning media using the Genially platform with a Game-Based Learning approach and to examine its feasibility and effectiveness in improving learning outcomes. This research employed a research and development method based on the Sukmadinata model, which consists of three stages: preliminary study, product development, and product testing. Data were collected through observation, interviews, questionnaires, surveys, and learning achievement tests. The research subjects included material experts and media experts for validation, 12 students of class VIII B in the limited trial, and 32 students of class VIII A in the field trial. Media feasibility was determined based on expert validation and students' responses. The results indicate that the Genially-based learning media was rated "Very Feasible" by material experts with a score of 93 and by media experts with a score of 85. Students' responses showed a mean score of 85.5, categorized as "Very Good." The effectiveness analysis using N-Gain based on pretest and posttest scores yielded a value of 70.05%, indicating a "Moderately Effective" level. These findings confirm that Genially-based game-based learning media can enhance students' engagement and learning outcomes.

## Keywords

Game-Based Learning, Genially, Interactive Learning Media, Pancasila Education.

## 1. Introduction

Based on Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, Article 1 states that education is a conscious and planned effort to create a learning environment and learning process that enable students to actively develop their potential in order to possess spiritual and religious strength, self-control, personality, intelligence, noble character, as well as the skills needed by themselves, society, the nation, and the state. In this context, education becomes the most important component in building civilization and advancing a nation. One of the factors that determines the success of the learning process is the use of learning media. Learning media are defined as all facilities, including hardware, software, and printed materials, that are systematically designed to facilitate interaction between educators and students in achieving learning objectives effectively and efficiently (Daniyati et al., 2023).

Based on a preliminary study and interviews with the Grade VIII Pancasila Education teacher at SMP Negeri 2 Jatiroto, several learning obstacles were identified. Students experience difficulty connecting the material to everyday examples. A pre-research survey in classes VIII A and VIII B showed that the 1945 Constitution was considered the most difficult topic (62.50%), followed by the Unitary State of the Republic of Indonesia (26.56%), Bhinneka Tunggal Ika (6.25%), and Pancasila (4.69%). Most students reported that the material contains many difficult terms (67.5%), is hard to remember (70.0%), and requires both memorization and deep understanding (67.5%). Additionally, some students found the content difficult to relate to real-life situations (37.5%), too text-heavy with limited visual examples (30.0%), and abstract in nature (17.5%).

Based on these findings, the researcher identified three main student difficulties: understanding complex terms, retaining material, and achieving deep understanding beyond memorization. These issues indicate the need for learning approaches and media that support contextual understanding, strengthen memory retention, and promote meaningful learning, particularly in the 1945 Constitution topic. Currently, teachers mainly use conventional non-IT media such as paper and whiteboards. While still relevant, learning in the digital era can be more effective when combined with digital media (Fikri et al., 2025; Putri et al., 2025). This is supported by Rakhman et al. (2024), who found that integrating digital and conventional media creates a more dynamic, motivating learning environment and improves student participation and learning outcomes.

To address these problems, it is necessary to implement innovative and engaging learning media in order to improve students' understanding. The use of interactive digital media is considered an innovative strategy to enhance learning effectiveness, particularly in subjects that require an understanding of concepts and values such as Pancasila and Civic Education (Zain & Andriany, 2024). One form of innovation that can be applied is the use of Genially, a web-based application that allows teachers to design interactive content such as dynamic presentations, quizzes, animations, and mini-games without requiring advanced programming skills (Fatmawati & Andriani, 2024). Through this platform, teachers can develop learning content that includes a glossary to help students understand important terms and quiz-based practice exercises to strengthen memory retention and deepen understanding of the material.

Previous studies have shown that the use of learning media based on the Genially platform in the learning process can increase students' learning interest and learning outcomes. For example, research by Rindawati et al. (2024) indicates that Genially-based multimedia learning media received positive responses with a "Feasible" category of 95.1%. In addition, a study by Salim (2024) shows that Genially-based gamification media received positive responses with a "Very Feasible" category, with

an average score of 4.33. This Genially-assisted media was designed in the form of a gamified for social studies material, which helped increase students' learning motivation.

This study offers novelty by focusing on the Pancasila Education subject, particularly on the My Country Guidelines (*Pedoman Negaraku*) material. A review of the literature indicates that research specifically developing Genially-based Game-Based Learning for the *Pedoman Negaraku* material (the 1945 Constitution element) at the junior high school level is still very limited. Moreover, this learning media can be accessed via smartphones anytime and anywhere, thereby supporting students' independent learning at home to deepen their understanding of the material. This study develops interactive learning media based on game-based learning using the Sukmadinata development model for the *Pedoman Negaraku* material for Grade VIII students at SMP Negeri 2 Jatiroto, with the expectation of addressing the learning difficulties faced by these students. Furthermore, this study aims to determine the feasibility and effectiveness of the developed learning media product so that it can be implemented in classroom learning to improve learning outcomes and also serve as a reference for future research.

## **2. Literature Review**

### **2.1. Learning Media in Education**

The term "media" in Indonesian is derived from the Latin word *medius*, which means "middle" and is the plural form of the word "*medium*". It refers to anything that functions as an intermediary or conduit for conveying messages or information. Miarso (2011) explains that learning media are anything used to channel messages that can stimulate students' thoughts, feelings, attention, and willingness to learn, thereby encouraging the occurrence of intentional, conscious, and controlled learning processes. Arsyad (2017) argues that learning media are anything that can be used to convey messages or information in the teaching and learning process so as to stimulate students' attention and learning interest.

The presence of digital media further strengthens the function of learning media because it allows interactivity and flexibility for learners in various conditions. This can also provide meaningful learning experiences for students while supporting 4C skills. The use of technological media in 21st-century learning is necessary to support the effectiveness of 4C skills (Lubis & Lubis, 2021). The purpose of using learning media is to facilitate educators in delivering learning material information so that it can be easily understood and comprehended, and to make learning more engaging by using media so that students enjoy the learning process more (Fadilah et al., 2023). Sanaky (2015) emphasizes that learning media have several important purposes as instructional aids in teaching and learning activities, including: facilitating the learning process in the classroom; increasing the efficiency of the learning process; maintaining the relevance between learning materials and learning objectives; and helping learners maintain concentration during the learning process.

The use of learning media in the educational process is not merely as an aid for teachers, but also has a real impact on learning effectiveness. Arsyad (2017) states that learning media provide many benefits in learning, including: clarifying the presentation of messages and information; increasing and directing students' attention so as to generate learning motivation; overcoming limitations of the senses, space, and time; and providing uniform experiences for students regarding events in their environment, as well as enabling direct interaction with teachers, society, and the environment.

### **2.2. Genially for Learning Media**

Genially is one of the media that can be utilized to support game-based learning in the field of education (Enstein et al., 2022). Since its initial launch, genially has

offered a wide range of ready-to-use templates, including presentations, infographics, gamification, interactive images, video presentations, as well as instructional and training materials. Educators are given flexibility to adapt these templates to their instructional needs, as the platform provides various activities that can stimulate active student participation (Vargas, 2021).

Various types of games can be created through Genially to support the learning process, such as quizzes, snakes and ladders, and monopoly-style games (Permatasari et al., 2021). Another advantage is its ease of access, as it can be used for free through a web browser without requiring application installation. According to de Souza and Kasseboehmer (2022), most of the content available on Genially can be accessed free of charge and is compatible with both computer and smartphone devices.

Unlike Quizizz or Kahoot, which generally focus only on quiz-based games, genially offers more diverse features, including presentations, infographics, gamification, video presentations, and interactive images. Most of these features can be used for free, although some require paid or premium access. Functionally, genially is similar to presentation media such as PowerPoint, but it is equipped with more varied additional features, including a wide range of themed design options. The platform also supports integration with various external sites such as Spotify and YouTube, and allows users to create learning materials directly from their computers (Ni'mah et al., 2022). The results of a study conducted by Sibghatullah et al. (2023) indicate that the implementation of the Game-Based Learning model using Genially received positive responses from approximately 70% of students, who reported that the platform was able to increase their learning motivation.

### **2.3. Game-Based Learning**

Game-based learning is a learning approach that can encourage students to participate more actively and become more engaged in the classroom learning process (Puspitasari et al., 2023). This model enables educators, both teachers and lecturers, to utilize games to meet students' cognitive needs while simultaneously facilitating their learning process (Vusić & Geček, 2018). Game-based learning positions games as a medium for achieving learning objectives rather than merely as a form of entertainment (Stiller & Schworm, 2019).

From this explanation, it can be understood that game-based learning is a learning strategy designed by integrating game elements or game applications into learning activities to support the achievement of educational objectives. The main focus of this model is to harness the appeal of games to keep learners actively engaged throughout the learning process (Stiller & Schworm, 2019). In its implementation, teachers need to design game activities that are relevant to students' characteristics. In addition, game-based learning provides opportunities for learners to interact, collaborate, and develop social skills, particularly interpersonal intelligence.

In the context of the Pancasila education subject, game-based learning is relevant because it can create learning situations that emphasize participation, collaboration, and decision-making aligned with the development of civic skills competencies. By utilizing game-based learning, abstract material such as the 1945 Constitution element can be presented in a more concrete and contextual manner through interactive game-based exploration activities, enabling students to understand the material more deeply (Vusić & Geček, 2018).

Research by Ramadhani (2025) shows that Genially-based game learning media using the game-based learning approach can increase student engagement and understanding, as well as improve learning outcomes on global warming material for Grade X students. This is evidenced by the research results, which obtained a score of 42 with the "Very Good" criterion from media experts and a score of 55 with the "Very Good" criterion from subject-matter experts. In addition, the majority of students gave positive responses to this learning media, with 84% rating it as "Very

Good” and 10% rating it as “Good.” Furthermore, research by Saputri et al. (2024) entitled shows that Genially website-based gamification learning media can increase students’ learning motivation. This is evidenced by the comparison of average scores before treatment (pretest) at 68.32% and after treatment (posttest) at 83.51%. Moreover, the student response questionnaire toward the media showed satisfactory results with a “Very Feasible” category, amounting to 88%.

#### 2.4. Constructivist Learning Theory and Cone of Experience Theory

Constructivism explains how students continuously adapt and refine their knowledge through cognitive development (Nilam, 2018; Nurfatimah, 2020). According to Piaget, this development occurs through four sequential stages: the sensorimotor stage (0–2 years), characterized by learning through direct experience and the emergence of object permanence; the preoperational stage (2–7 years), in which children use symbols and language but think intuitively and egocentrically; the concrete operational stage (7–11 years), marked by logical thinking limited to concrete objects, including progressive decentring and conservation; and the formal operational stage (11 years and above), where individuals are capable of abstract, logical, and systematic reasoning, including hypothesis testing and deductive and inductive thinking (Marinda, 2020).

Humans possess cognitive knowledge structures that organize experiences into meaningful schemas, where the same experience may be interpreted differently by each individual and connected to prior knowledge through learning processes of organization and adaptation (Baharuddin & Wahyuni, 2009). Adaptation consists of assimilation, in which new information is integrated into existing schemas, and accommodation, where knowledge structures are modified or newly formed to achieve cognitive equilibrium.

Edgar Dale stated that the broad base of the cone illustrates the importance of direct experience for the effectiveness of communication and learning. The more concretely students learn instructional material, namely through direct experience, more experiences they acquire. Conversely, the more abstract the experiences students gain, such as relying solely on verbal instruction, the fewer experiences they obtain (Sari, 2019; Wasiyah et al., 2023). Dale (1969) also estimated that learning outcomes acquired through the sense of sight account for approximately 75%, through the sense of hearing about 13%, and through other senses about 12%. However, these calculations are merely estimates, in principle, the more senses involved in the learning process, the greater the opportunity for students to understand and remember the material. Figure 1 shows Dale’s Cone of Experience.

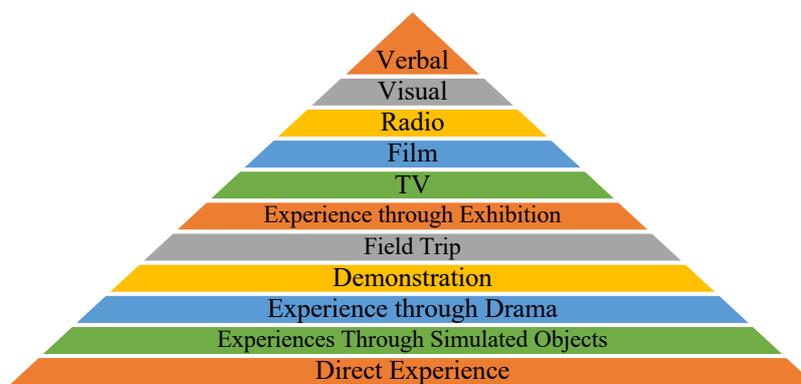


Figure 1. Edgar Dale’s Cone of Experience

This study adopts Piaget’s constructivist theory and Dale’s Cone of Experience as the theoretical basis for implementing Game-Based Learning through Genially-based interactive media, as both theories emphasize active learning and the

progression from concrete experiences to abstract understanding (Marinda, 2020). Game-Based Learning positions students as active constructors of knowledge, enabling assimilation when learners connect new content on the history, functions, and position of the 1945 Constitution with prior knowledge, and accommodation when they reorganize or form new cognitive schemas through gameplay, discussion, and problem-solving activities. These processes lead to equilibration, resulting in deeper and more durable understanding. This approach is particularly relevant for junior high school students at the formal operational stage, who are capable of abstract thinking but still require concrete learning experiences as cognitive support. Genially-based game media provides visual, audio, and interactive simulations that concretize abstract civic concepts, consistent with Dale's emphasis on multi-sensory learning to strengthen retention. Therefore, the integration of Game-Based Learning within interactive media not only aligns with students' cognitive development but also explains the observed effectiveness of the media in improving engagement, comprehension, and learning outcomes in Pancasila Education.

### 3. Methods

This study employed a Research and Development (R&D) approach based on the Borg and Gall development model as modified by Sukmadinata. According to Sukmadinata (2015), R&D is a systematic process aimed at developing new products or refining existing ones in an accountable manner. The modified model consists of three main stages: preliminary study, product development, and product testing. The preliminary study stage involved three sequential activities. First, a literature review was conducted to examine relevant theories, concepts, and empirical studies related to learning media, game-based learning, and Genially. Second, a field survey was carried out through observations, interviews, questionnaires, and surveys to identify students' learning difficulties and media needs. Third, based on the findings from the literature review and field survey, an initial product draft was designed, including the structure, content flow, and instructional components of the learning media.

The product development stage began with the completion of the initial draft, which was then subjected to expert validation. Validation involved subject-matter experts and media experts to ensure the feasibility and quality of the product. Subject-matter experts evaluated content appropriateness, language feasibility, and presentation feasibility, while media experts assessed visual design, audio, video, interactivity, evaluation features, and ease of use. Feedback from both experts was used as the basis for revising the product. After the first revision, a limited trial was conducted with a small group of students to obtain initial responses regarding usability and clarity. The results of this limited trial informed a second revision before the media was implemented in a broader trial involving a full class.

The product testing stage aimed to examine the effectiveness of the developed learning media. The media were implemented in classroom learning activities in accordance with the prepared teaching module. During implementation, observations were conducted to examine students' interactions with the media and its role in facilitating understanding of the 1945 Constitution material. Effectiveness was measured using a one-group pretest–posttest design. Students completed a pretest prior to media use and a posttest after the learning activities. The test results were analyzed using N-Gain calculations to determine improvements in learning outcomes.

The research subjects included classroom teachers, subject-matter experts, media experts, and students. The limited trial involved 12 students from class VIII B, while the broader trial involved 32 students from class VIII A at SMP Negeri 2 Jatiroto. Data were collected through observation, interviews, questionnaires, surveys, and tests. The research instruments consisted of expert validation sheets, student

response questionnaires, and pretest–posttest instruments. Expert validation and student response instruments used a five-point Likert scale, and the resulting scores were converted into percentages based on the interpretation criteria proposed by Riduwan (2015).

The subject-matter expert validation instrument comprised 15 items covering three aspects: content appropriateness (material accuracy, content currency, and encouragement of learning interest), language feasibility (appropriateness and accuracy of language), and presentation feasibility (presentation techniques). The media expert validation instrument consisted of 20 items distributed across six aspects: visual design, audio, video, interactivity, evaluation, and ease of use. Student responses were collected using a 25-item questionnaire covering ease of use, display quality, learning usefulness, learning attractiveness, and tendency to use the media. The pretest and posttest instruments consisted of 10 items designed to measure cognitive levels from C1 to C6, covering the History of the 1945 Constitution of the Republic of Indonesia, its Characteristics and Functions, and its Position within the Indonesian legal system. Effectiveness was analyzed using N-Gain interpretation criteria proposed by Hake (1999), categorizing effectiveness as ineffective, less effective, quite effective, or effective. These procedures provided a systematic basis for evaluating both the feasibility and effectiveness of the developed Genially-based learning media.

#### **4. Results**

The researcher identified learning difficulties and media needs through observation, interviews, questionnaires, and surveys. The results indicate that learning is still dominated by conventional media, causing teachers to become the primary source of information while students tend to be passive. The teacher explained that although the Merdeka Curriculum has been implemented with the use of student worksheets and textbooks, students still experience difficulty connecting the material with concrete examples due to the density of Pancasila Education content. The teacher assessed that Genially-based media accessed via smartphones are needed, with the consideration that internet access must be taken into account. Interviews with students from classes VIII A and VIII B revealed that they often feel bored, sleepy, and dissatisfied with their learning outcomes; the 1945 Constitution material is considered difficult because it involves extensive memorization. They also stated that game-based learning could help them understand the material, while interactive media had never been used in the classroom. These findings led to the identification of the need for media development, prompting the researcher to distribute needs analysis questionnaires to both teachers and students.

At the planning stage, teachers and students agreed on the use of game-based media via smartphones. The media were designed with animations, images, videos, interactive quizzes, feedback, and core materials, adapted to students' visual–auditory learning styles. The planning also included the preparation of teaching modules for the materials on the History, Functions, and Position of the 1945 Constitution of the Republic of Indonesia, as well as the creation of a flowchart to visualize user interaction pathways and to facilitate structured and engaging media development.

The researcher began developing the learning media product based on the previously created flowchart. The developed learning media product consists of three main components: Introduction, Missions, and Learning Source. The Introduction contains the storyline of the game, which serves as a prologue, enabling users to understand the issues being presented. The Missions component contains challenges that must be completed by users, consisting of four stages and functioning as the epilogue of the game. The Learning Source component contains a collection

of core learning materials available as resources for users' independent learning. The display of the main components of the learning media can be seen in the figure 2.

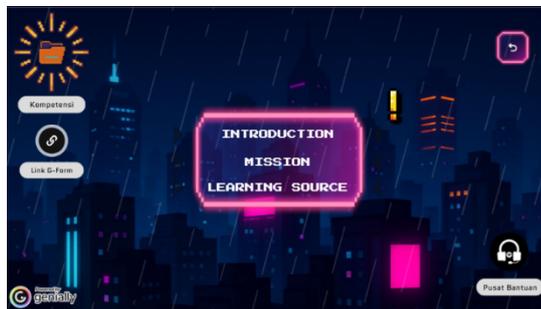


Figure 2. Display of the Main Components

After the learning media were completed, the next step was to conduct validation by subject-matter experts and media experts in order to obtain feasibility assessments. Table 1 presents the results of the learning material validation conducted by the subject-matter expert. The content relevance aspect obtained a total score of 28, indicating that the material was accurate, up to date, and aligned with the learning objectives. Language appropriateness achieved a score of 25, showing that the language used in the media was clear, accurate, and suitable for the students' level. Presentation feasibility received a score of 17, reflecting that the material was systematically and effectively presented. The learning material obtained a total score of 70 out of a maximum score of 75, resulting in a percentage score of 93. Based on the feasibility interpretation criteria, this result places the learning material in the "Very Feasible" category, indicating that it is highly suitable for use in the learning process.

Table 1. Results of Learning Material Validation

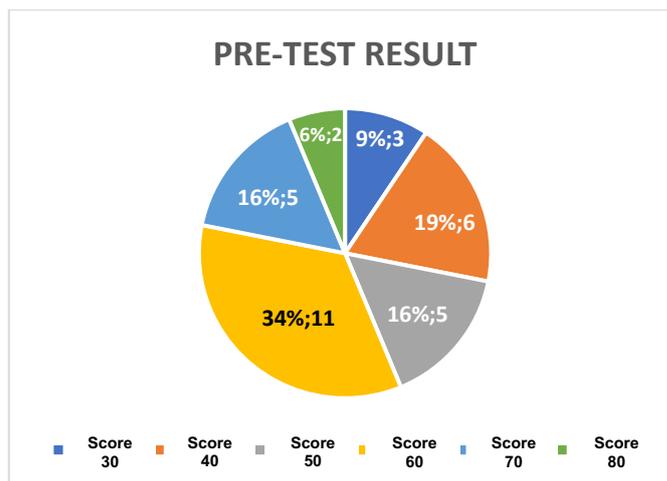
| No.                  | Assessment Aspect        | Total Score   |
|----------------------|--------------------------|---------------|
| 1                    | Content Relevance        | 28            |
| 2                    | Language Appropriateness | 25            |
| 3                    | Presentation Feasibility | 17            |
| Total Score Obtained |                          | 70            |
| Maximum Total Score  |                          | 75            |
| Score                |                          | 93            |
| Category             |                          | Very Feasible |

Table 2 shows the results of the learning media validation conducted by the media expert. The display design aspect obtained the highest score of 39, indicating that the visual appearance, layout, and text presentation were well designed and attractive. The audio aspect scored 10, reflecting clear and appropriate audio quality, while the video aspect received a score of 8, showing that the video content was relevant to the material and of adequate quality. Interactivity achieved a score of 4, indicating that the interactive features effectively supported user engagement. The evaluation aspect obtained a score of 5, suggesting that the assessment questions were appropriately presented. The ease of media use aspect scored 19, demonstrating that the media was easy to operate and user-friendly. The media achieved a total score of 85 out of a maximum score of 100, resulting in a feasibility score of 85, which indicates that the developed learning media is suitable for implementation in the learning process.

**Table 2.** Results of Learning Media Validation

| No.                  | Assessment Aspect | Total Score |
|----------------------|-------------------|-------------|
| 1                    | Display Design    | 39          |
| 2                    | Audio             | 10          |
| 3                    | Video             | 8           |
| 4                    | Interactivity     | 4           |
| 5                    | Evaluation        | 5           |
| 6                    | Ease of Media Use | 19          |
| Total Score Obtained |                   | 85          |
| Maximum Total Score  |                   | 100         |
| Score                |                   | 85          |

The product testing stage is the final phase of the research, which aims to determine the effectiveness of the developed product. Data were collected using a pretest administered to students before the treatment and a posttest administered after the treatment. The design used was a one-group pretest–posttest design, with class VIII A selected as the experimental sample based on the consideration that all students possessed smartphones. Figure 3 shows the pretest score results of class VIII A.



**Figure 3.** Pretest Score

Based on Figure 3, the range of pretest scores extends from 30 to 80, with an average score of 54.68. Out of a total of 32 students, 11 students (34%) obtained a score of 60; 6 students (19%) obtained a score of 40; 5 students (16%) obtained a score of 50; 5 students (16%) obtained a score of 70; 3 students (9%) obtained a score of 30; and two students (6%) obtained a score of 80.

After the pretest was completed, the researcher proceeded to administer the treatment during classroom learning activities by using the Genially learning media product that had previously been validated by subject-matter experts and media experts. Subsequently, after the learning activities were completed, students were asked to take the posttest. Figure 4 shows the posttest score results of class VIII A.

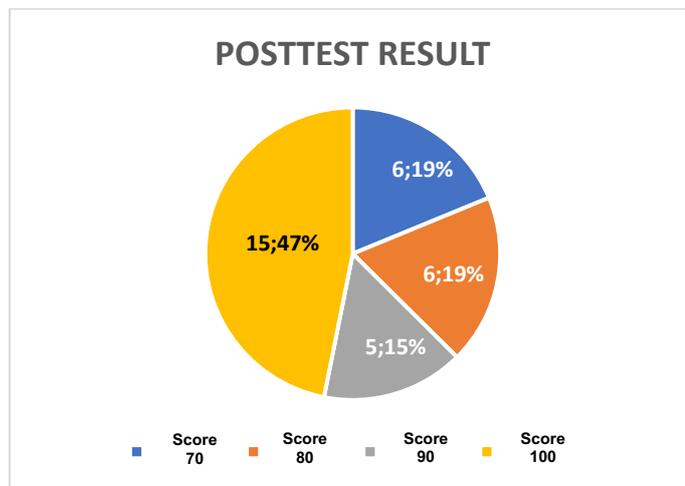


Figure 4. Posttest Score Results

Based on Figure 4, the range of posttest scores extends from 70 to 100, with an average score of 89.06. Out of a total of 32 students, 15 students (47%) obtained a score of 100; 6 students (19%) obtained a score of 80; 6 students (19%) obtained a score of 90; and 5 students (15%) obtained a score of 70.

After the pretest and posttest scores were identified, the next step was to calculate the N-Gain to determine the effectiveness of using the learning media in the classroom. In this regard, the researcher used SPSS 25 to perform the calculations. The results are presented in Table 3.

Table 3. N-Gain Calculation

| Test          | N  | Minimum | Maximum | Mean    | Std. Deviation |
|---------------|----|---------|---------|---------|----------------|
| NGain_Score   | 32 | 0.00    | 1.00    | 0.7005  | 0.34427        |
| NGain_Percent | 32 | 0.00    | 100.00  | 70.0521 | 34.42691       |

Based on the calculation shown in Table 3, the N-Gain score indicated in the mean column is 0.7005, which is greater than 0.7. To interpret the effectiveness level of the N-Gain value, the researcher converted it into a percentage to determine the effectiveness of the learning media. The results shown in Table 4.

Table 4. N-Gain Effectiveness Calculation

| Test                | Statistic   | Std. Error |
|---------------------|-------------|------------|
| Mean                | 70.0521     | 6.08588    |
| 95% CI for Mean     | Lower Bound | 57.6399    |
|                     | Upper Bound | 82.4643    |
| 5% Trimmed Mean     | 72.2801     |            |
| Median              | 80.0000     |            |
| Variance            | 1185.212    |            |
| Std. Deviation      | 34.42691    |            |
| Minimum             | 0.000       |            |
| Maximum             | 100.00      |            |
| Range               | 100.00      |            |
| Interquartile Range | 50.00       |            |
| Skewness            | -0.781      | 0.414      |
| Kurtosis            | -0.638      | 0.809      |

Based on the N-Gain effectiveness calculation shown in Figure 8, the mean value obtained is 70.05%. Based on Hake’s (1999) criteria, an N-Gain percentage of 70.05%

falls within the 56–75% range, indicating that the developed learning media is categorized as moderately effective in improving students' learning outcomes. This result demonstrates that the use of Genially-based Game-Based Learning media contributes meaningfully to students' understanding of the material, as reflected by the substantial improvement between pretest and posttest scores.

## **5. Discussion**

Based on the content validation, the subject-matter expert stated that the learning material designed by the researcher was classified as “Very Feasible” to be tested on students, obtaining a score of 93. Likewise, the media expert stated that the learning media designed by the researcher was also classified as “Very Feasible” to be tested on students, with a score of 85. The suggestions and feedback provided by the media expert included ensuring that the menus and in-game buttons are responsive, as well as adding a Google Forms link at the end of the game to allow students to share their experiences while playing the game. These high validation scores are consistent with previous studies that emphasize the importance of expert evaluation in ensuring the quality and usability of educational media (Riduwan, 2015).

The feasibility assessments from both the subject-matter expert and the media expert indicate that the Genially learning media meets the principles of instructional media use in learning communication, namely alignment with students' material needs, assistance in achieving learning objectives, suitability of the media to the content, compatibility with students' characteristics, effectiveness and efficiency, and the educator's ability to operate the media. The effectiveness of the Genially learning media is further supported by an N-Gain value of 70.05%, which according to Hake (1999) falls into the “Moderately Effective” category, and by students' responses to the learning media, which reached 85.5%, categorized as “Very Feasible” according to Riduwan (2015).

These findings are aligned with previous studies demonstrating the effectiveness of Genially and Game-Based Learning in enhancing student engagement and learning outcomes. Studies by Rindawati et al. (2024) and Salim (2024) report that Genially-based media effectively attract students' interest and learning motivation, while Ramadhani (2025) shows that Genially increases student engagement, conceptual understanding, and learning outcomes. Similarly, Mamonto (2025) found that the Game-Based Learning model helps overcome learning barriers, and Sibghatullah et al. (2025) reported that the implementation of Game-Based Learning using Genially receives positive student responses and significantly enhances learning motivation. Empirical evidence from Rahmawati and Yasa (2025) further supports this finding, as their N-Gain effectiveness test yielded a score of 71.8%, categorized as “Effective.” In addition, Sukmanasa et al. (2024) revealed significant differences in N-Gain scores between control and experimental classes, indicating that the use of Genially provides new learning experiences that positively influence students' motivation. These local findings are reinforced by international research, such as Estupiñán (2024), who emphasizes that Genially offers an innovative and dynamic learning approach that promotes active student participation and provides flexibility and ease of use for educators.

Thus, this study reinforces previous findings that game-based Genially learning media can effectively increase students' interest and learning outcomes, particularly in the 1945 Constitution material elements concerning the topics of the History, Functions, and Position of the 1945 Constitution of the Republic of Indonesia. These findings may also serve as a reference for future studies, indicating that Genially media can be an alternative learning medium, especially in the field of Pancasila Education, to improve the quality of learning in schools.

## 6. Conclusion

This study concludes that the development of Genially-based Pancasila Education learning media using a Game-Based Learning approach is feasible and effective in improving students' learning outcomes, particularly on the material of the 1945 Constitution of the Republic of Indonesia. The findings show that both subject-matter experts and media experts rated the developed media as highly feasible, indicating that the content accuracy, language use, presentation, visual design, interactivity, and ease of use met instructional standards. Product testing further demonstrated a substantial increase in students' learning outcomes, as evidenced by the improvement from pretest to posttest scores and an average N-Gain value of 70.05%, which falls into the "quite effective" category. These results confirm that interactive, game-based digital media can transform learning that was previously dominated by conventional methods into a more student-centered, engaging, and meaningful process. The use of narratives, missions, quizzes, and feedback successfully encouraged active participation, supported students' motivation, and helped them connect abstract concepts with more concrete representations, in line with the demands of the Merdeka Curriculum.

Despite these positive outcomes, this study has several limitations that should be acknowledged. The effectiveness of the Genially-based media is closely tied to the availability and stability of internet access, as well as the specifications of students' smartphones, which may vary and affect learning continuity. Additionally, the research employed a one-group pretest–posttest design without a control group, limiting broader generalization of the findings. Therefore, future research is recommended to involve comparative experimental designs with control groups to strengthen causal conclusions. Further studies may also explore the integration of offline features, automated assessment systems, or adaptive feedback mechanisms to enhance accessibility and personalization. Expanding the implementation to different schools, grade levels, or subject areas would also provide deeper insights into the scalability and long-term impact of Genially-based Game-Based Learning media.

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Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

### ***Data Disclosure Statement***

The data that support the findings of this study are available from the corresponding author upon reasonable request.



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