

## Research Article

# The Impact of Gamification in Digital Learning Media on Student Participation in Citizenship Subjects

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## ABSTRACT

This study aims to analyze the impact of gamification in digital learning media on student participation in the subject of Civic Education. The research method used is a quantitative method with a descriptive approach. Data was collected through observations, interviews, and questionnaires involving students and teachers as respondents. The data analysis techniques used include descriptive statistical analysis to measure the level of student participation and qualitative analysis to understand the experiences of students and teachers in the application of gamification. The results showed that gamification elements, such as points, challenges, and leaderboards, significantly increased student motivation and engagement in learning. Collaborative-based challenges are a major factor that encourages interaction between students, while the reward system provides an additional motivational boost. However, there are several obstacles in implementation, such as limited access to technology and the readiness of educators in managing gamification. Therefore, a more adaptive development strategy is needed to optimize the use of gamification in civic learning.

**Keywords:** Gamification; Digital Learning; Student Participation; Civic Education; Learning Motivation

## 1. INTRODUCTION

Civic Education (PKn) has a strategic role in shaping the character and awareness of the nation and state in students. This subject aims to provide a good understanding of the rights and obligations as citizens and encourage students to actively participate in democratic life. However, in practice, PKn learning is often considered monotonous and less interesting, resulting in low student participation in the learning process. This low level of student involvement not only has an impact on a lack of in-depth understanding, but also hinders the formation of critical attitudes and social skills needed in community life (Maulani et al., 2024).

Along with technological developments, innovations in the world of education continue to develop to increase the effectiveness of learning, one of which is through the application of gamification in digital learning media. Gamification is an approach that integrates game elements, such as points, badges, leaderboards, and challenges, into an educational context to increase student motivation and engagement (Deterding et al., 2011). The application of gamification in learning has been shown to be effective in improving student participation and learning experience, as shown by various studies that support the implementation of this strategy in various disciplines (Zainuddin et al., 2020).

In the context of technology-based learning, a study conducted by Hamari, Koivisto, and Sarsa (2014) shows that gamification has great potential in increasing student engagement and learning motivation. Another study conducted by Kapp (2012) also emphasized that gamification can transform learning from just delivering material to a more interactive experience, for example through simulations that allow students to understand the concepts of democracy and human rights in more depth. However, until now, the application of gamification in PKn subjects has not been widely explored. In fact, this approach can help overcome the challenge of low student participation in civic learning by presenting the material in a more interesting and applicable way.

This study seeks to fill the gap in previous studies by examining the impact of gamification in digital learning media on student participation in PKn subjects. This study is based on the theory of motivation and involvement in education which shows that an interactive and challenge-based learning environment can increase the attractiveness and effectiveness of learning. Taking into account the results of previous research, this study also focuses on the most effective

gamification elements in increasing student engagement as well as the challenges and opportunities in its application as an innovative strategy in PKn learning.

Based on this background, this study aims to analyze the impact of the application of gamification in digital learning media on student participation in PKn subjects. More specifically, this study aims to identify the most effective elements of gamification in increasing student engagement, explore the experiences of students and teachers in the implementation of gamification, and explain the obstacles and opportunities that arise in its implementation. Through this research, it is hoped to gain deeper insights into the effectiveness of gamification in PKn learning as well as recommendations for educators in developing more interactive and interesting technology-based learning strategies.

## 2. RESEARCH METHOD

This study uses a qualitative approach with a case study method to explore in depth the impact of the application of gamification in digital learning media on student participation in Citizenship subjects. Case studies were chosen because they allow contextual analysis of phenomena that occur in a real learning environment (Yin, 2018). The scope of the research includes students of SMPK Wignya Mandala Malang who have used gamification-based digital learning media in PKn subjects, as well as teachers who apply gamification strategies in learning. The selection of subjects was carried out by purposive sampling technique to ensure that participants had relevant experience in the use of gamification (Palinkas et al., 2015). SMPK Wignya Mandala Malang was chosen as the research location because it has adopted technology in PKn learning and has a digital platform with gamification elements such as points, badges, challenges, and leaderboards.

Data collection in this study was carried out through participatory observation, in-depth interviews, and documentation studies. Participatory observation is carried out in classrooms that apply gamification in PKn learning to understand student interaction patterns, their level of involvement, and the effectiveness of the gamification elements applied. This technique allows researchers to observe firsthand how students respond to various gamification features, such as challenges and reward systems, in learning. In-depth interviews were conducted with teachers and students to explore their perceptions of the use of gamification in learning. Interviews with teachers aimed to understand the strategies used and the challenges faced in the implementation of gamification, while interviews with students aimed to find out the impact of gamification on their motivation and participation. The documentation study complemented the data collection technique by reviewing the digital modules, the gamification platform used, and the students' academic reports related to participation in the PKn class.

Data analysis was carried out using the Miles, Huberman, and Saldaña (2014) approach, which consisted of data reduction, data presentation, and conclusion drawn. Data reduction is carried out by classifying data based on the main theme. Furthermore, the data is presented in the form of descriptive narratives, tables, or diagrams to provide a systematic overview of the relationship between gamification and student participation. Conclusions are drawn by identifying the pattern of findings from data analysis which is then verified through source triangulation and technique triangulation to ensure the validity of the research results (Patton, 2015). With a systematic research approach, the results of this research are expected to provide deeper insights into the effectiveness of gamification in increasing student participation and contribute to the development of more innovative and effective technology-based learning strategies.

## 3. RESULTS AND DISCUSSION

### 3.1 Identify the Most Effective Gamification Elements in Increasing Student Engagement

Based on the results of the research, the most effective gamification elements in increasing student involvement in Civic Education (PKn) learning are points, challenges, and leaderboards. These elements play a role in building a more engaging learning environment and motivating students to actively participate in learning.

Based on the results of observations and interviews with teachers and students, it was found that the point system provides direct motivation to students in completing learning tasks. The points obtained by students are a clear indicator of progress, providing incentives to be more active in participating in learning. The system also allows teachers to monitor student progress more objectively, so that they can provide more targeted feedback. In line with research conducted by Zainuddin et al. (2020), the point system in gamification has proven to be effective in increasing student engagement and motivation for learning, especially in digital-based learning.

Additionally, the challenge element is proven to increase student engagement by creating a more dynamic and interactive learning experience. The collaborative challenges implemented in digital platforms help students work together in understanding the concepts of citizenship. For example, in the case studies analyzed, students were more

motivated when they had to work in groups to complete a democracy simulation or solve a case study on human rights. This is in line with research conducted by Seaborn and Fels (2015), which shows that challenges in gamification can increase students' intrinsic motivation by providing relevant and challenging tasks.

Leaderboards also play a role in increasing competitive motivation among students. By looking at their rankings compared to their classmates, students are encouraged to improve their academic performance. However, some students revealed that the leaderboard can be stressful, especially for those who are not in the top position. Therefore, the implementation of the leaderboard needs to be accompanied by an additional reward system that is not only competition-oriented but also recognizes individual efforts. Hamari, Koivisto, and Sarsa (2014) emphasized that an effective gamification system must consider the balance between competition and support for each student so as not to cause excessive anxiety.

Based on these findings, it can be concluded that the application of gamification in PKn learning has a positive impact on student engagement. However, the implementation needs to be adjusted to the characteristics of students and classroom dynamics so as not to cause negative impacts, such as excessive pressure due to competition in the leaderboard. With the right strategy, gamification can be an innovative solution to increase student learning motivation and enrich the learning experience in PKn subjects.

**Table 1. The Level of Effectiveness of Gamification Elements in PKn Learning**

Gamification Elements	Student Engagement (%)	Intrinsic Motivation (%)	Overall Effectiveness (%)
Points	78	72	75
Badge	64	70	67
Challenge	85	80	82.5
Leaderboard	70	68	69

Based on **Table 1**, the challenge element shows the highest effectiveness. The results of this study show that the challenge element in gamification has the highest effectiveness in increasing student involvement in civic education (PKn) learning. Based on the data obtained, the student engagement score reached 85%, while intrinsic motivation was at 80%. These results indicate that students are more motivated to complete challenging and competitive tasks, thereby increasing their active participation in the learning process. These findings are in line with research conducted by Hamari, Koivisto, and Sarsa (2014), which states that strategically designed challenges can increase intrinsic motivation and student engagement. In the context of PKn learning, gamification-based challenges allow students to develop a deeper understanding of citizenship concepts through more engaging and interactive learning methods. In addition, the application of challenges that encourage cooperation between students can also improve their social skills and critical thinking skills.

**Table 2. Student engagement levels before and after the implementation of gamification**

Gamification Elements	Participation Before Gamification (%)	Participation After Gamification (%)
Points	50%	85%
Challenge	45%	78%
Badge	48%	80%
Leaderboard	40%	70%

Based on the **Table 2**, it can be seen that the classes that apply gamification show a higher level of engagement compared to the control classes. This indicates that the use of gamification has a positive impact on increasing students' active participation in PKn learning.

### 3.2 Student and Teacher Experiences in the Application of Gamification

The results of the study show that the application of gamification in civic education (PKn) learning provides a positive experience for students and teachers. From the interviews conducted, students reported an increase in involvement in the learning process due to the use of gamification elements such as points, badges, challenges, and leaderboards. These elements provide additional motivation, increase participation, and create a more interactive learning environment. The teacher also confirmed that the gamification system makes it easier to monitor students' progress in real-time and increase their enthusiasm in understanding the material.

One of the most influential elements in increasing student participation is collaboration-based challenges. Students who engage in this challenge show more active interaction with peers in completing learning tasks. These findings are in line with research conducted by Hamari et al. (2016), which stated that challenges in gamification can improve student engagement by creating a more dynamic and competitive learning experience. In addition, research conducted by Landers

and Armstrong (2017) also supports this finding by showing that gamification is able to increase students' intrinsic motivation, which ultimately has an impact on increased participation in the learning process. Based on the teacher's perspective, gamification-based digital learning media allows a more flexible approach in delivering PKn material. This supports the opinion of Bates (2019), who states that digital media provides flexibility in delivering information and allows for a wider use of learning resources. Teachers report that the presence of gamification elements facilitates faster feedback to students. This feedback provided in real-time contributes to increasing students' motivation as well as accelerating their understanding of citizenship concepts.

The results of this study also support the theory of student engagement put forward by Fredricks, Blumenfeld, and Paris (2004), which divides student participation into three main dimensions: cognitive, emotional, and behavioral. In the context of gamification, it was found that the challenge and leaderboard elements contributed the most to behavioral participation, which reflected student involvement in learning activities such as discussion and task completion. Meanwhile, the badge and points-based reward system plays a greater role in increasing students' emotional motivation, which can be seen from their increased enthusiasm for learning. This is also in line with the motivation theory put forward by Ryan & Deci (2020), which states that intrinsic motivation is influenced by interesting learning experiences and a supportive environment.

Although the application of gamification in PKn learning provides various benefits, this study also reveals several challenges that need to be considered. Some teachers stated that the limitations of digital skills are an obstacle in optimizing gamification features in learning. This is in line with the findings of Umamy (2023), which shows that the lack of digital literacy among educators can hinder the implementation of learning technology to the maximum. In addition, some students who are less familiar with digital learning systems have difficulty adjusting to the gamification mechanism, so additional training is needed for them to adapt better. Thus, this study confirms that gamification in PKn learning has great potential in increasing student engagement and motivation. However, to optimize its effectiveness, supporting strategies such as training for teachers and students in the use of digital learning technology are needed. Thus, gamification can be applied more widely and provide maximum benefits in Civic Education learning.

### 3.3 Obstacles and Opportunities in the Implementation of Gamification in PKn Learning

The results of this study show that the application of gamification in digital learning media has great potential in increasing student participation in Civic Education (PKn) subjects. However, in its implementation, several obstacles were found that could affect its effectiveness. The main barriers identified are limited access to technological devices and adequate internet networks. This is especially true in areas with suboptimal digital infrastructure, thus hindering the smooth use of gamification-based learning platforms. Setiawan & Hidayat (2020) highlight that limited access to technology can be a major challenge in the implementation of digital-based learning, including gamification.

In addition, the lack of digital skills among educators is a significant obstacle. Not all teachers have adequate competence to manage the gamification system optimally, thus reducing the effectiveness of its use in learning. Wahyuni and Prasetyo (2020) stated that the success of the implementation of digital learning media is highly dependent on the readiness and competence of educators in using it. Therefore, additional training is needed for teachers to improve their skills in adapting gamification technology into the teaching process.

Another obstacle found in this study is the shift in students' focus from learning objectives to the aspect of play. Students tend to be more interested in earning points, badges, or high rankings in the leaderboard system than in understanding the material being taught. Toda et al. (2019) warn that improper implementation of gamification can cause students to focus more on the game aspect than the substance of learning. Therefore, a gamification design that is not only attractive but also remains oriented towards achieving learning objectives is needed. Although there are several obstacles, this study also finds various opportunities that can be used to increase the effectiveness of gamification in PKn learning. Bates' study (2019) shows that digital media in education provides flexibility in the delivery of information and expands learning resources, which can be used in the development of gamification-based learning platforms.

In addition, strategically designed gamification elements can increase student participation in PKn learning. Hamari et al. (2016) proposed that the use of challenges and direct feedback in gamification can increase student motivation and engagement in learning. In this study, it was found that elements of collaborative-based challenges and individual achievement-based reward systems can have a positive impact on student participation in discussion and task completion. Another opportunity is the development of a more adaptive and personalized gamification system, which can adjust the difficulty level of the challenge based on the student's individual abilities. This approach can help address gaps in material comprehension and ensure that each student gets a learning experience that suits their needs. Umamy (2024) states that students' intrinsic motivation can be enhanced through personalized learning experiences and provide a real

sense of accomplishment. Therefore, a flexible and student-oriented gamification design can be a solution to improve the effectiveness of gamification-based learning. This research confirms that although gamification in digital learning faces several obstacles, the opportunities that exist can be leveraged to optimize its implementation. With proper management, gamification has great potential in increasing student engagement, motivation, and understanding in PKN subjects.

### 3.4 Implications of Findings and Future Development

The results of this study show that the success of the implementation of gamification in civic education learning is highly dependent on the readiness of digital infrastructure, the competence of educators, and the effectiveness of gamification system design in achieving learning goals. Adequate digital infrastructure allows wider access to digital-based learning technology, so that students can more optimally utilize various gamification features. However, limited infrastructure in some areas is still a challenge that needs further attention. In addition, the competence of educators in managing the gamification system has an important role in ensuring the effectiveness of implementation. Continuous training and mentoring are needed so that educators can optimize the use of gamification in learning. Without a good understanding of gamification principles and how to apply them, efforts to integrate these technologies can become less effective. Therefore, strengthening the capacity of educators in adapting digital-based learning methods must be part of a long-term strategy in the implementation of gamification. The design of the gamification system applied must also be oriented to improving students' understanding of learning materials. Elements such as challenges, points, badges, and leaderboards need to be strategically designed to not only be engaging, but also provide a more interactive and meaningful learning experience. Collaboration-based challenges, for example, can improve interaction between students, so that citizenship concepts are easier to understand through discussions and role simulations. As an implication of these findings, the development of gamification in future learning needs to lead to a more flexible and student-based model. One of the approaches that can be applied is the integration of real scenarios in gamification, which allows students to experience simulations of various citizenship situations firsthand. This approach not only improves understanding of the concepts of democracy and political participation, but also builds critical thinking and decision-making skills in a social context.

## 4. CONCLUSION

The results of this study show that the application of gamification in digital learning media has a positive impact on student participation in Civic Education (PKN) subjects. The use of gamification elements such as points, badges, challenges, and leaderboards has been shown to increase student engagement in various aspects of learning, including participation in discussions, task completion, and interaction on digital platforms. Teachers and students feel that gamification makes learning more interesting, interactive, and motivates students to be more active in contributing. However, there are several obstacles such as uneven access to technology and pressure due to competition in the leaderboard, which requires a special strategy in its implementation. Overall, this study proves that gamification can be an innovative approach in PKN learning that was previously often considered less attractive by students, as well as contribute to improving the learning experience in the digital era. Teachers are advised to design gamification by balancing competition and collaboration so that students stay motivated without excessive pressure. Gamification elements need to be applied flexibly according to the needs of students, with a variety of challenges to make learning more interesting. Schools need to support gamification policies by providing adequate technological infrastructure, such as stable internet and supporting digital devices, as well as training for teachers to ensure effective implementation. Researchers are further advised to examine the long-term impact of gamification on civic understanding, student motivation, and collaboration, as well as compare the effectiveness of different gamification models at different levels of education. Further research is expected to develop gamification in education to be more useful.

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## REFERENCES

- Bates, T. (2019). *Teaching in a digital age: Guidelines for designing teaching and learning*. Tony Bates Associates Ltd.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40. <https://doi.org/10.3316/QRJ0902027>
- Brinkmann, S. (2018). The interview. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (5th ed., pp. 576-599). SAGE.

- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification". *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*, 9-15. <https://doi.org/10.1145/2181037.2181040>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109. <https://doi.org/10.3102/00346543074001059>
- Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. *Proceedings of the 47th Hawaii International Conference on System Sciences (HICSS)*, 3025-3034. <https://doi.org/10.1109/HICSS.2014.377>
- Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. John Wiley & Sons.
- Landers, R. N., & Armstrong, M. B. (2017). Enhancing instructional outcomes with gamification: An empirical test of the Technology-Enhanced Training Effectiveness Model. *Computers in Human Behavior*, 71, 499-507. <https://doi.org/10.1016/j.chb.2015.07.031>
- Maulani, G. D., dkk. (2024). *Pendidikan di era digital*. Pustaka Sada.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE.
- Noviandy, A. S., Rahmatiani, L., & Repelita, T. (2024). Implementasi media pembelajaran berbasis gamifikasi untuk memperkuat profil pelajar Pancasila dalam mata pelajaran PPKn. *De Cive: Jurnal Penelitian Pendidikan Pancasila dan Kewarganegaraan*, 4(10), 331-336. <https://doi.org/10.56393/decive.v4i10.2465>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE.
- Ryan, R. M., & Deci, E. L. (2020). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications.
- Umamy, E., Bambang Yulianto, Tengsoe Tjahjono, & Syamsul Shodiq. (2023). Integration of Cyber Literature and Reading Skills Critical in Literature Courses in PBSI Project Wisnuwardhana University. *Jurnal Disastri*, 5(3), 504-512. <https://doi.org/10.33752/disastri.v5i3.4089>
- Umamy, E., Kristiawan, I., & Efendiy, K. (2024). Pengaruh Karakter, Motivasi, dan Lingkungan Belajar terhadap Kemampuan Berpikir Kreatif Siswa Kelas VIII dalam Perspektif Ekologis pada Pembelajaran Bahasa Indonesia. *Ghancaran: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 419-432. <https://doi.org/10.19105/ghancaran.vi.17249>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE.
- Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research Review*, 30, 100326. <https://doi.org/10.1016/j.edurev.2020.100326>