

Gamified Canva-Based Learning with Deep Learning Pedagogy for Teaching Diversity in Pancasila Education

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ABSTRACT

Diversity education is a central component of Pancasila Education, requiring students not only to understand diversity concepts but also to develop reflective awareness and the ability to apply Pancasila values in real-life situations. However, classroom instruction often remains teacher-centered and content-focused, limiting meaningful engagement with diversity issues. This study aimed to develop and evaluate gamified Canva-based learning media grounded in deep learning pedagogy to support meaningful, reflective, and engaging diversity learning among senior high school students. This study employed a research and development approach using the ADDIE model, consisting of the Analyze, Design, Develop, Implement, and Evaluate stages. The product was implemented in a public senior high school in Surabaya, Indonesia. Participants included 34 Grade X students and one Pancasila Education teacher. Data were collected through expert validation sheets, teacher and student practicality questionnaires, pretest-posttest learning outcome tests, and classroom engagement observations. Data were analyzed using descriptive statistics, percentage scores, mastery learning analysis, and normalized gain (N-Gain). Expert validation indicated that the media was highly feasible, with scores ranging from 90% to 94% across content, design, and language aspects. Teacher and student practicality scores reached 93.3% and 89.4%, respectively. Students' average learning outcomes improved from 56.18 on the pretest to 83.82 on the posttest, producing an N-Gain score of 0.63 and increasing learning mastery from 29.4% to 85.3%. Observation data also revealed higher levels of participation, attention, and reflective engagement with diversity issues. The findings suggest that integrating gamification with deep learning pedagogy through Canva-based media can support meaningful and engaging diversity learning. The study highlights the potential of accessible digital platforms to promote reflective understanding and value internalization in Pancasila Education.

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1. INTRODUCTION

Pancasila Education in senior high schools has a strategic role in strengthening students' national character and their appreciation of Indonesia's diversity (Parhan & Sukaenah, 2020; Rahadian, 2018). However, classroom practices in this subject are still frequently dominated by teacher-centred instruction and memorisation-oriented activities. As a result, Pancasila values are often treated as information to be recalled rather than as principles to be understood, reflected upon, and applied in daily life (Fajriah, 2025; Rahadian, 2018; Rahayu, 2025). This condition creates a gap between the ideal function of Pancasila Education as a medium for forming critical and responsible citizens and the reality of learning that often provides limited space for active participation, contextual dialogue, and value internalisation (Nisa et al., 2023; Noptario et al., 2024).

The challenge becomes more complex because senior high school students are largely part of Generation Z, a generation that has grown up in a digital and multimodal information environment. These students are accustomed to visual content, fast feedback, interactive platforms, and personalised learning experiences (Kayyali, 2025). Conventional teaching methods that rely heavily on lectures and memorisation may therefore reduce students' attention and engagement, especially when learning topics such as diversity that require reflection, empathy, and contextual understanding (Damayanti, 2024; Magtublo & Santoso, 2024). For this reason, Pancasila Education requires learning media that are not only visually attractive but also pedagogically structured to support deeper understanding and meaningful engagement.

Previous studies have shown that interactive and contextual learning media can improve students' understanding of Pancasila values. Problem-Based Learning has been found to encourage students to analyse social issues related to Pancasila and diversity in a more contextual manner (Prastiawati, 2023). The Garuda Board media, Value Clarification Technique supported by multimedia, flashcards, Educaplay, and culturally responsive pop-up media have also been reported to improve motivation, learning outcomes, and students' ability to connect values with real-life situations (Adriannuh et al., 2023; Fernanda et al., 2024; Fillah et al., 2025; Fitrianingrum & Irianto, 2024; Sutrami & Amrullah, 2023). These studies indicate that learning media can become more effective when they provide opportunities for discussion, reflection, and contextual application.

At the theoretical level, deep learning pedagogy offers a relevant foundation for improving Pancasila Education because it emphasises conceptual understanding, metacognition, reflection, and the application of knowledge in real-life contexts (Mahpudz, 2025; Wiandani, 2025). This approach encourages students not only to know civic and moral concepts but also to examine their relevance to social realities and personal experiences. Deep learning is also supported by social and emotional learning conditions, including teacher autonomy support and peer interaction, which can strengthen students' confidence and motivation to engage with complex social values (Zhao & Qin, 2021). Thus, deep learning pedagogy aligns with the aim of Pancasila Education to develop students' reflective awareness and civic disposition.

Gamification has also been widely discussed as a strategy for increasing motivation and learning engagement. Game elements such as points, badges, levels, challenges, and direct feedback can encourage active participation when they are aligned with instructional objectives (Khattoon, 2023; Limantara et al., 2023; Setyoadi & Patmanthara, 2024). However, gamification may become superficial if it only focuses on rewards and competition without supporting reflection and knowledge construction. Therefore, gamified learning media should be designed not merely to make learning enjoyable but also to guide students toward deeper interpretation of the learning content.

Canva provides a practical platform for developing such media because it allows teachers to design visual, interactive, and accessible learning materials. Its templates, graphic elements, collaborative features, and flexibility across devices support the development of multimodal content suitable for Generation Z learners (Ratnawati, 2025; Zahri & Rahmawati, 2024). Previous studies have shown that Canva can improve students' creativity, engagement, and learning outcomes in various subjects (Hadana et al., 2023; Hasmalia et al., 2025; Kosilah, 2025; Mudinillah & Rizaldi, 2021; Syahrir

et al., 2023; Thanos et al., 2023; Uba et al., 2022). Nevertheless, its use as a gamified learning platform explicitly grounded in deep learning pedagogy remains limited, particularly in Pancasila Education and diversity learning.

Based on the literature, several research gaps can be identified. First, studies on gamification in Pancasila Education at the senior high school level remain limited, even though adolescents require learning approaches that are relevant to their digital habits and identity development (Putri & WalDI, 2024; Sakdiah et al., 2025). Second, many gamified media still emphasise points and rewards rather than structured reflection, contextualisation, and value internalisation (Barriga et al., 2025; Trinh et al., 2023). Third, Canva has not been widely examined as a platform for developing gamified media for diversity topics in Pancasila Education. Fourth, previous studies have tended to focus on motivation and cognitive outcomes, while the connection between gamification, deep learning, and reflective understanding of diversity values has received less attention (Caliston, 2025; Maharani, 2025; Parwati et al., 2023; Wulandari et al., 2024).

To address these gaps, this study developed and tested gamified Canva-based learning media designed with a deep learning pedagogical approach for diversity topics in Pancasila Education at the senior high school level. The novelty of this study lies in the integration of Canva-based visual media, structured gamification elements, and deep learning activities that guide students to analyse diversity cases, reflect on personal experiences, and connect Pancasila values with real social contexts. Specifically, this study was guided by the following research questions: (1) How can gamified Canva-based learning media be developed by integrating deep learning pedagogical principles for diversity topics in Pancasila Education? (2) How feasible and practical is the developed media according to expert validators, teachers, and students? (3) How effective is the media in improving students' learning outcomes and engagement in diversity learning? Through these questions, the study is expected to contribute theoretically to the development of deep gamification in civic education and practically to the provision of accessible digital learning media for Pancasila Education teachers.

2. METHODS

This study employed a research and development (R&D) design using the ADDIE instructional development model and a one-group pretest-posttest quasi-experimental approach. The R&D design was used to produce gamified Canva-based learning media, while the one-group pretest-posttest design was used to obtain limited empirical evidence of the media's effectiveness after implementation.

The research was conducted in a public senior high school in Surabaya, East Java, Indonesia. The participants consisted of 34 Grade X students and one Pancasila Education teacher involved in the limited field trial. The sample size followed the intact-class format commonly used in school-based development research and was considered sufficient for a limited product trial because the study focused on feasibility, practicality, and initial effectiveness rather than broad population generalisation. The participants were selected purposively based on the relevance of the diversity topic, availability of digital learning facilities, and the school's willingness to participate.

The ADDIE procedure consisted of five stages. In the analysis stage, classroom observation, teacher interviews, student needs analysis, and curriculum analysis were conducted to identify learning problems, student characteristics, and the learning outcomes related to diversity. In the design stage, the researchers developed learning objectives, storyboards, flowcharts, learning missions, quizzes, case studies, reflection activities, and gamification elements such as points, badges, levels, and feedback. In the development stage, the storyboard was transformed into an interactive Canva-based digital module and validated by material, media, and language experts. In the implementation stage, the media was used in Grade X Pancasila Education learning. In the evaluation stage, formative feedback from experts, teachers, and students was used to revise the product, while summative evaluation was used to assess feasibility, practicality, and effectiveness.

The instruments included expert validation sheets, teacher and student response questionnaires, a learning outcome test, and a learning engagement observation sheet. The validation sheets assessed

content relevance, curriculum alignment, conceptual accuracy, media design, navigation, gamification consistency, readability, and language clarity. The response questionnaires measured ease of use, clarity of instructions, visual attractiveness, relevance to learning needs, and perceived engagement. The learning outcome test was administered as a pretest and posttest to measure students' understanding of diversity concepts and their ability to apply Pancasila values in contextual situations. The observation sheet recorded students' attention, participation in discussion, enthusiasm for completing missions, and reflective responses to diversity cases.

Instrument validity was established through expert judgement before use. The validators reviewed the instruments in terms of content relevance, construct alignment, language clarity, and suitability for Grade X students. Instrument reliability was strengthened through consistent scoring rubrics, the use of the same pretest and posttest indicators, and the application of structured observation indicators during implementation. Statistical reliability coefficients were not reported because the study was conducted as a limited development trial; therefore, future studies should test the reliability of the instruments using a larger sample and item-level data.

Data were collected through expert validation, teacher and student questionnaires, pretest and posttest scores, classroom observation, and open-ended comments. Quantitative data were analysed descriptively using percentages, mean scores, N-Gain, and mastery percentages. The percentage of feasibility and practicality was calculated by comparing the obtained score with the maximum possible score. Scores were interpreted using five categories: 0-20% (very poor), 21-40% (poor), 41-60% (fair), 61-80% (good), and 81-100% (very good). The mean score was used to summarise validation and response data.

The effectiveness of the media was examined using the normalised gain formula, namely $g = (\text{posttest score} - \text{pretest score}) / (\text{maximum score} - \text{pretest score})$. The N-Gain result was interpreted as high ($g \geq 0.70$), medium ($0.30 \leq g < 0.70$), or low ($g < 0.30$). Student mastery was calculated by comparing the number of students who achieved the minimum mastery criterion of 75 with the total number of students. Because the available dataset used in this manuscript contained aggregated class-level scores rather than individual paired scores, a paired-sample t-test was not conducted. Therefore, the effectiveness findings should be interpreted as descriptive evidence from a limited field trial rather than as causal proof.

Qualitative data from observations and open-ended responses were analysed descriptively through data reduction, theme grouping, and narrative interpretation. The themes included ease of use, technical constraints, motivation, participation, and reflection on diversity values. Ethical considerations were addressed by obtaining permission from the school, informing the teacher and students about the purpose of the study, ensuring voluntary participation, maintaining participant confidentiality, and using the collected data only for research purposes. The learning activities did not negatively affect students' regular grades.

3. FINDINGS AND DISCUSSION

3.1 Findings

This section integrates the findings and discussion to explain how the developed media performed in terms of product design, feasibility, practicality, learning outcomes, engagement, and pedagogical contribution. The findings are interpreted in relation to previous studies and the theoretical basis of deep learning pedagogy and gamification.

The final product was an interactive digital module developed with Canva. The module consisted of a home screen, competency map, learning objectives, gamified missions, reflective quizzes, diversity case studies, feedback pages, and teacher-student usage guidance. The gamification elements were not designed as separate entertainment features but were embedded in the learning flow to direct students toward reading, discussing, choosing solutions, and reflecting on diversity-related problems.

Figure 1 presents the home screen of the media, while Figure 2 presents the quiz and diversity case-study activities used to guide students through the gamified learning process.

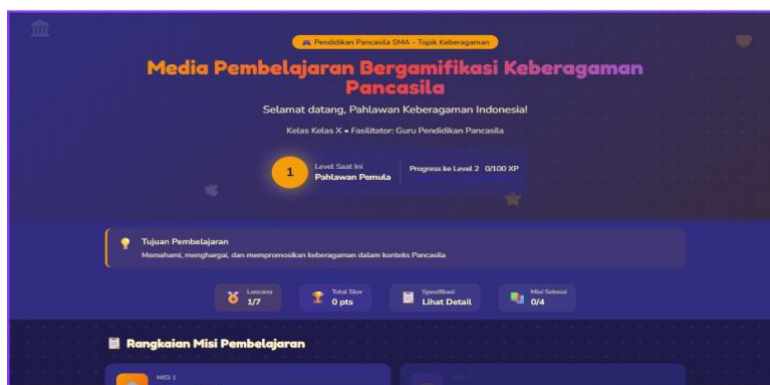


Figure 1. Home Screen of Gamified Learning Media Based on Canva



Figure 2. Display of Quiz Activities and Case Studies on Diversity in Canva Media

As shown in Figure 1 and Figure 2, the media used visual missions, avatars, quizzes, and case-based activities to support both cognitive engagement and reflective learning. The design is consistent with the characteristics of Generation Z learners, who tend to respond positively to visual, interactive, and feedback-oriented learning environments (Kayyali, 2025; Magtublo & Santoso, 2024). More importantly, the media attempted to connect gamification with deep learning by using challenges and feedback as entry points for discussion and reflection rather than merely as reward mechanisms.

Table 1. Expert Validation Results for Gamified Learning Media Based on Canva

Aspect	Validator	Average Score (1-5)	Percentage (%)	Category
Material	Material Expert	4.6	92.0	Very good
Media	Media Expert	4.7	94.0	Very good
Language	Language Expert	4.5	90.0	Very good

Note: The percentage is obtained from the conversion of scores to a scale of 0-100% based on a maximum score of 5.

Table 1 shows that all expert validation scores were within the very good category. The material expert gave a score of 92.0%, the media expert gave 94.0%, and the language expert gave 90.0%. These results indicate that the developed media met the expected standards of content relevance, visual design, interactivity, and readability.

The high material validation score suggests that the diversity content was aligned with the curriculum and appropriate for Grade X students. The media validation result indicates that Canva was effectively used to organise navigation, visual hierarchy, missions, and feedback. The language validation score shows that the media used accessible wording for senior high school students. These findings strengthen previous studies showing that interactive and visual media can make Pancasila Education more contextual and engaging when they are designed according to learning objectives (Adriannuh et al., 2023; Fitrianingrum & Irianto, 2024; Sutrami & Amrullah, 2023).

Table 2. Results of the Media Practicality Test by Teachers and Students

Respondents	Number of Respondents	Average Score (1-5)	Percentage (%)	Category	General Description
Teachers	1	4.7	93.3	Very practical	Easy to use, clear instructions, fits the time allocation
Students	34	4.5	89.4	Practical-very practical	Attractive display, easy to follow, activities feel challenging

Note: The average score and percentage are aggregates of several aspects, including ease of use, clarity, attractiveness, and relevance.

Table 2 presents the practicality results from the teacher and students. The teacher's practicality score reached 93.3%, while the students' score reached 89.4%. These scores indicate that the media was easy to use, visually attractive, and relevant to the learning process.

The teacher's response suggests that the media could be implemented within the available time allocation and does not require complex technical preparation. Student responses indicate that the point, badge, level, and mission systems helped maintain attention and encouraged them to complete the learning activities. This finding is in line with previous gamification research, which shows that game elements can increase motivation and engagement when they are meaningfully connected to instructional goals (Khatoon, 2023; Limantara et al., 2023; Setyoadi & Patmanthara, 2024). However, the positive response should not be interpreted as the effect of game elements alone. The reflective quizzes and contextual diversity cases also contributed to student engagement because they required students to explain, justify, and connect their choices with real social situations.

Table 3. Average Pretest and Posttest Scores of Student Learning Outcomes

Test Phase	N	Maximum Score	Average Score	Description
Pretest	34	100	56.18	Before using the media
Posttest	34	100	83.82	After using the media

Note: The normalised N-Gain score obtained from this data is 0.63, which is in the medium category and close to the high category.

Table 3 shows an increase in the mean learning outcome score from 56.18 in the pretest to 83.82 in the posttest. The calculated N-Gain score was 0.63, which falls within the medium category and approaches the high category. This result indicates that the media provided meaningful support for students' conceptual understanding of diversity and their ability to apply Pancasila values in contextual situations.

Table 4 further shows that student mastery increased from 29.4% before using the media to 85.3% after implementation. The increase suggests that the media helped a larger proportion of students reach the minimum mastery criterion. Nevertheless, because the study used a one-group design without a control group and did not include inferential testing, the result should be interpreted as descriptive evidence of practical effectiveness rather than definitive causal evidence. The improvement may have

been influenced by the combination of visual scaffolding, structured missions, teacher facilitation, peer discussion, and reflective activities.

Table 4. Student Learning Achievement Before and After Learning with Media

Stage	N	Minimum Mastery Criterion	Number of Students Who Achieved Mastery	Percentage of Mastery (%)	Category
Before	34	75	10	29.4	Low
After	34	75	29	85.3	High

Note: The increase in the mastery rate from 29.4% to 85.3% indicates a substantial practical improvement after media implementation.

Table 5. Summary of Qualitative Findings on Learning Engagement

Engagement Indicators	Key Findings from Observations and Questionnaires
Attention to material	Most students focused on following the mission flow, reading the material, and paying attention to the explanations on each screen.
Participation in discussions	Students actively discussed diversity case studies and justified their choice of action in small groups.
Enthusiasm for completing missions	The point and badge system encouraged students to complete all missions and try to achieve the highest score.
Reflection on diversity values	Students were able to relate situations in case studies to their personal experiences at school and in their surroundings.

Table 5 summarises the qualitative findings from observations and open-ended responses. Students showed stronger attention to the learning material, more active participation in small-group discussion, enthusiasm for completing missions, and greater willingness to reflect on diversity values.

The qualitative findings help explain why the quantitative scores improved. The mission structure gave students a clear learning path, while the diversity cases encouraged them to analyse concrete situations instead of memorising abstract concepts. Reflection activities also supported the principles of deep learning because students were guided to connect the material with their personal experiences and school environment (Mahpudz, 2025; Wiandani, 2025). This finding supports Zhao and Qin (2021), who emphasised that social support and learning autonomy can strengthen students' confidence in using deeper learning strategies.

3.2 Discussion

The findings indicate that the gamified Canva-based learning media developed through a deep learning pedagogical approach demonstrated high levels of feasibility, practicality, and initial effectiveness in supporting diversity learning within Pancasila Education. Expert validation results showed that the media met quality standards in terms of content relevance, instructional design, visual presentation, and language clarity. These findings suggest that the integration of Canva's interactive visual features with structured gamification elements can produce learning resources that are pedagogically appropriate and technically accessible for senior high school students. Previous studies have similarly reported that Canva-based learning media can enhance instructional quality by providing multimodal representations that support students' engagement and understanding (Mudinillah & Rizaldi, 2021; Syahrir et al., 2023; Zahri & Rahmawati, 2024). In the present study, the positive validation results indicate that the media successfully aligned curricular objectives, learning activities, and assessment components within a coherent instructional framework.

The practicality findings further demonstrate that both teachers and students perceived the media as easy to use, attractive, and relevant to classroom learning. The high teacher practicality score suggests that the media can be implemented without extensive technical preparation, an important consideration for sustainable adoption in school settings. Meanwhile, students reported that the

missions, badges, feedback mechanisms, and visual design increased their interest and encouraged them to complete learning activities. These findings support previous research indicating that gamification can increase motivation and participation when game elements are meaningfully connected to learning objectives rather than functioning solely as reward systems (Khatoon, 2023; Limantara et al., 2023; Setyoadi & Patmanthara, 2024). The practical value of the developed media is therefore not limited to its technological features but also derives from its ability to structure learning experiences that maintain students' attention and participation throughout the instructional process.

The improvement in students' learning outcomes provides additional evidence regarding the educational potential of the developed media. The increase in mean scores from pretest to posttest, accompanied by a moderate N-Gain score and a substantial increase in learning mastery, suggests that the intervention supported students' understanding of diversity concepts and their application of Pancasila values in contextual situations. Although the study did not employ a control group and therefore cannot establish definitive causal relationships, the observed improvement is consistent with findings from previous studies demonstrating that gamified learning environments can enhance conceptual understanding by promoting active engagement, repeated practice, and immediate feedback (Abu-Hammad & Hamtini, 2023; Maharani, 2025; Wulandari et al., 2024). The results suggest that students were not merely memorizing concepts related to diversity but were increasingly able to analyze situations and connect abstract values to real-life contexts.

A particularly important contribution of this study lies in the integration of gamification with deep learning pedagogy. In many educational settings, gamification is often criticized for emphasizing external rewards while neglecting higher-order thinking and meaningful understanding (Barriga et al., 2025; Trinh et al., 2023). The present study attempted to address this limitation by embedding game elements within reflective and contextual learning activities. Points, badges, and missions were used primarily to attract attention and sustain engagement, while diversity case studies, reflective questions, and collaborative discussions functioned as mechanisms for deeper cognitive processing. This instructional design aligns with the principles of deep learning pedagogy, which emphasize conceptual understanding, reflection, metacognitive awareness, and the application of knowledge in authentic situations (Mahpud, 2025; Wiandani, 2025).

The qualitative findings further support this interpretation. Observation data indicated that students actively participated in discussions, justified their responses to diversity-related cases, and connected learning content with their personal experiences and social environments. Such behaviors reflect characteristics commonly associated with deep learning, including active meaning-making, critical reflection, and the integration of new knowledge with prior experiences (Zhao & Qin, 2021). Rather than functioning as passive recipients of information, students were encouraged to evaluate alternative perspectives, discuss social issues, and formulate reasoned responses grounded in Pancasila values. This finding is particularly significant because diversity education requires not only cognitive understanding but also reflective awareness and civic disposition.

The results also highlight the pedagogical potential of Canva as a platform for civic and character education. Previous research has largely examined Canva as a tool for improving creativity, presentation skills, or general academic achievement (Hadana et al., 2023; Uba et al., 2022). In contrast, the present study demonstrates that Canva can serve as a platform for designing structured gamified learning experiences that support reflection and value internalization. The platform's visual and interactive capabilities enabled the integration of missions, feedback systems, case studies, and reflection prompts within a single learning environment. This integration may help teachers move beyond traditional lecture-based approaches toward more participatory and student-centered learning experiences.

Nevertheless, several limitations should be acknowledged when interpreting these findings. First, the study employed a one-group pretest-posttest design without a comparison group, limiting the ability to attribute learning gains exclusively to the intervention. Second, the sample was restricted to one class in a single school, which constrains the generalizability of the findings. Third, the study

primarily measured cognitive learning outcomes and classroom engagement, while constructs such as civic disposition, empathy, value internalization, and long-term retention were not assessed directly. Future studies should therefore employ more rigorous experimental designs, larger and more diverse samples, validated reliability measures, and additional instruments capable of capturing affective and reflective dimensions of diversity learning. Such investigations would provide stronger evidence regarding the role of deep gamification in promoting meaningful civic education and reflective understanding of diversity in contemporary classrooms.

4. CONCLUSION

This study developed gamified Canva-based learning media using deep learning pedagogy for teaching diversity in Pancasila Education at the senior high school level. The media was designed through the ADDIE model and combined visual learning materials, gamified missions, diversity case studies, reflective quizzes, points, badges, and levels to support students' conceptual understanding and reflection. The expert validation results showed that the media was highly feasible in terms of content, media design, and language. Teacher and student responses also indicated that the media was practical, easy to use, visually attractive, and relevant to the learning needs of Grade X students. Descriptive effectiveness data showed that the average learning outcome score increased from 56.18 to 83.82, with an N-Gain score of 0.63, while student mastery increased from 29.4% to 85.3%. Observation data further indicated stronger attention, participation, and reflection on diversity values.

Theoretically, this study contributes to the development of deep gamification in civic education by showing how game elements can be combined with reflective and contextual learning activities. Practically, the study offers Pancasila Education teachers an accessible model for designing Canva-based digital media that can make diversity learning more meaningful and engaging. The findings should be interpreted with caution because the study used a small sample, was conducted in a single school context, did not include a control group, and did not conduct inferential significance testing or statistical reliability analysis. Future studies should involve larger samples, use experimental or comparison-group designs, apply paired-sample statistical testing with complete individual data, examine instrument reliability, and investigate long-term effects on students' civic disposition and attitudes toward diversity.

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