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Exploring Students' Engagement in Learning Comparison through AI-Assisted Canva Games

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Abstract
The integration of technology in education has expanded rapidly, including the use of digital learning media to create more interactive and enjoyable learning experiences. One of these media is Canva, which has become a popular educational design platform. The novelty of this study lies in the use of Canva AI features to develop interactive learning media and create simple educational games more efficiently. This study aimed to explore student engagement in learning comparison through the use of AI-Assisted Canva Games. The research was motivated by students' low interest and participation in conventional classroom learning. A descriptive qualitative method was employed, with data collected through observations, interviews, and documentation. The participants were 13 fifth-grade students from an elementary school in Simalungun Regency, North Sumatra, who participated in English learning using AI-Assisted Canva Games. The participants were selected purposively because they were directly involved in the implementation of the learning media. The findings revealed that AI-Assisted Canva Games enhanced student engagement by increasing students' interest, participation, and active involvement during learning activities. Students reported that the games helped them understand the learning material more easily while creating a more enjoyable classroom atmosphere. In addition, teachers found it easier to design engaging and effective learning activities using Canva AI features. Overall, the findings indicate that AI-Assisted Canva Games can promote more innovative, interactive, and student-centered English learning by improving students' engagement and supporting teachers in developing effective digital learning media.

Keywords: Interactive Learning media; Educational games; Canva AI

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INTRODUCTION

Advances in digital technology have had a broad impact on various aspects of education, including the English language learning process at the elementary school level. In the context of modern learning, the teacher's role is no longer limited to delivering material; it also encompasses integrating technology to create a more effective and engaging learning environment for students. In line with these developments, artificial intelligence (AI) is increasingly being applied in various educational platforms. The presence of AI technology offers new opportunities in learning activities by helping teachers develop teaching materials, produce visual content, and provide a more interactive learning experience tailored to students' needs (Denny et al., 2024). Therefore, the use of AI-based technology is a key issue in developing 21st-century learning.

In learning English, mastery of grammar plays a crucial role because it helps students understand and use the language appropriately in various situations. At the elementary school level, grammar is taught in stages according to students' developmental levels so they can communicate using simple expressions and sentence structures. One of the topics studied by fifth-grade students is degrees of comparison, which includes the use of comparative and superlative forms of adjectives to compare people, objects, and places. However, this topic often presents a challenge for students because they must understand the rules for changing adjective forms and apply them in correct sentence structure.

To help students better understand comparison material, teachers need to implement learning approaches that can increase their interest and engagement during the learning process. One approach widely used in education is gamification, which is the use of game elements in learning activities. The use of gamification is believed to increase motivation to learn because students engage in more enjoyable and challenging activities (Deterding et al., 2011). Several studies also show that using game elements in learning can positively impact student participation and learning outcomes (Hamari et al., 2014). In line with the development of digital technology, teachers now have the opportunity to create game-based learning activities using the Artificial Intelligence (AI) features available in Canva. This feature allows teachers to produce a variety of visual content and interactive activities that can be tailored to the learning material more quickly and creatively. Therefore, using Canva AI to develop educational games on degrees of comparison has the potential to be an alternative learning method that can increase engagement while helping students understand the concept of comparison in English. Previous research indicates that Canva can be used as an effective learning medium to support teaching and learning activities. Using this platform not only helps improve students' understanding of the material but also encourages their creativity and engagement throughout the learning process. With its Artificial Intelligence (AI) features, Canva offers a variety of conveniences in developing learning media that have the potential to increase student engagement and learning outcomes.

Although the use of Canva in education has been widely researched, most studies primarily examine it as a learning medium or instructional design tool. Limited attention has been paid to how AI-assisted gamification-based learning activities can enhance student engagement in grammar learning, particularly among elementary school students. Furthermore, studies exploring the pedagogical role of Canva's Artificial Intelligence (AI) features in supporting cognitive, behavioral, and emotional engagement during grammar instruction are scarce. This gap highlights the need to investigate how AI-assisted gamification can create meaningful learning experiences and encourage active student participation in learning degrees of comparison.

Based on these issues, this study explores the use of Canva's AI features in develop an educational game that teaches degrees of comparison to fifth-grade elementary school students. In addition to examining Canva's AI implementation, this study seeks to advance understanding of how AI-assisted gamification supports student engagement in grammar learning. These findings are expected to enrich the growing body of knowledge on technology-assisted language learning and provide insights into the relationship between AI-assisted gamification-based activities and student engagement in elementary school EFL classrooms.

RESEARCH METHODS

Research Design

This study uses a qualitative approach. The qualitative approach was chosen because it allows the researcher to explore and understand participants' experiences, perceptions, and responses regarding the use of Canva AI in teaching degrees of comparison to fifth-grade elementary students. Through this approach, the researcher gained an in-depth understanding of how Canva AI supports classroom learning activities and influences student engagement throughout the learning process.

The research took place at an elementary school in Simalungun Regency, North Sumat

ra, Indonesia, where English was taught as a local content subject. The learning activities using Canva AI were implemented in the fifth-grade classroom during the English lesson. Data collection was

conducted over a period of four weeks to allow sufficient observation of classroom interaction and learning activities.

Research Subject

The participants of this study were 13 fifth-grade students from an elementary school who participated in a learning activity involving Canva AI. Participants were selected through purposive sampling because they met criteria relevant to the study's objectives: students who had directly experienced the integration of Canva AI in grammar learning activities. The students had studied English as a school subject and possessed the basic digital literacy skills necessary to operate the learning application under teacher supervision. All participants had access to the digital devices provided during the learning activity, enabling them to engage effectively with the Canva AI-based game. Although their prior experience with Canva and AI-based educational media varied, all students received guidance and orientation before participating in the activity. The participant selection was intended to obtain rich, meaningful information about students' experiences, engagement, and perceptions of their comparative learning levels using the Canva AI feature.

Research Procedure

This research was conducted through several stages:

1. Preparation Stage
   The researcher obtained permission from the school and coordinated with English teachers to implement Canva AI in teaching the Degrees of Comparison. Learning materials and observation guidelines were also prepared.
2. Implementation Stage
   The teacher conducted learning activities using Canva AI as a teaching aid. The lesson focused on introducing and practicing the positive, comparative, and superlative forms of adjectives through interactive visual materials generated with Canva AI.
3. Data Collection Stage
   During the implementation process, the researcher observed classroom activities and documented student participation. Interviews were also conducted with selected teachers and students to gather information about their experiences and perceptions of using Canva AI in learning.
4. Data Organization Stage
   Data collected from observations, interviews, and documentation were organized and classified according to the research objectives.
5. Data Analysis and Reporting Stage
   The researcher analyzed the data, interpreted the findings, and presented the results in a research report.

Instruments and Data Collection Techniques

The main instruments used in this study were observation sheets, interview guides, and documentation notes.

1. Observations
   Classroom observations were conducted to examine the learning process, student engagement, and classroom interactions during the implementation of Canva AI. Field notes were taken to record important events and behaviors observed during the lessons.
2. Interviews
   Semi-structured interviews were conducted with the English teacher and several students. The interviews aimed to explore participants' perceptions, experiences, and opinions regarding the effectiveness and usefulness of Canva AI in teaching Comparative Degrees.
3. Documentation

Documentation was collected in the form of lesson plans, learning materials, student learning products, photographs of classroom activities, and screenshots of learning content generated by Canva AI. These documents were used to support and validate the findings obtained through the observations and interviews.

Data analysis technique

Data were analyzed using the interactive model proposed by Miles, Huberman, and Saldaña (2014), which consists of three stages: data reduction, data presentation, and conclusion drawing/verification. The analysis was conducted systematically through coding, theme development, and verification procedures.

1. Data Reduction

   The researcher selected, focused, simplified, and organized the collected data based on the research objectives. Interview transcripts, observation notes, and documentation were repeatedly reviewed to identify meaningful information on the use of Canva AI in teaching Comparative Degrees.

   The data were coded using a thematic coding process. Initial codes, such as student participation, attention during lessons, interaction with learning materials, motivation, and learning difficulties, were assigned to relevant statements and observations. Similar codes were then grouped into broader categories.

2. Data Presentation

   The reduced data were presented in descriptive narratives, tables, and thematic categories to facilitate interpretation. The coded data were organized into themes that represented student engagement in learning activities.

   Indicators of student engagement were identified across three dimensions: behavioral engagement (participation, attendance, and engagement in class), emotional engagement (interest, enjoyment, and motivation), and cognitive engagement (attention, understanding, and effort in completing tasks). These indicators were obtained from interview responses, classroom observations, and supporting documentation.

3. Conclusion, Drawing and Verification

   The researcher interpreted the findings and drew conclusions regarding the use of Canva AI in Comparative Degree teaching. Themes emerging from the coded data were continuously compared across data sources to ensure consistency.

To ensure the reliability of the findings, data triangulation was conducted by comparing information obtained from observations, interviews, and documentation. Additionally, member checking was conducted by confirming several interview results with participants to ensure that interpretations accurately reflected their experiences. Peer checking was also conducted through discussions with the research supervisor or colleagues to review the data-coding and interpretation processes.

RESULTS AND DISCUSSION

Results

Student Engagement in Canva AI-Assisted Learning

Data were analyzed using the interactive model proposed by Miles, Huberman, and Saldaña (2014), which consists of data reduction, data display, and conclusion drawing/verification. During the data reduction stage, interview transcripts, observation notes, and documentation were repeatedly reviewed and coded to align with the research objectives. Initial codes were generated from student statements and observed behaviors related to their experiences using the AI-based educational game Canva.

The coding process focused on indicators of student engagement adapted from the literature, including behavioral engagement (e.g., participation, attention, and task completion), emotional

engagement (e.g., interest, enjoyment, and enthusiasm), and cognitive engagement (e.g., effort, problem-solving, and learning engagement). Similar codes were then grouped into broader categories and refined into themes representing student engagement and perceived levels of comparative learning through Canva's AI features.

In the data display stage, the coded data and emerging themes were organized into descriptive narratives and a thematic matrix to facilitate interpretation. Finally, conclusions were drawn by identifying patterns and relationships across the data and were continuously verified through repeated examination of the data sources.

To enhance the credibility of the findings, data triangulation was employed by comparing information obtained from interviews, classroom observations, and documentation. Additionally, member checking was conducted by confirming key interpretations with participants to ensure that the findings accurately reflected their experiences.

Students' Understanding of Degrees of Comparison

This study also found that Canva AI helped improve students' conceptual understanding of Degrees of Comparison. Students demonstrated an improved ability to distinguish among positive, comparative, and superlative forms after learning from visual and contextual examples provided by Canva AI. Instead of memorizing grammar rules, students were guided to observe differences in images and describe them using the correct adjective form. This learning process helped students construct understanding in a more meaningful and contextual way. Similar findings were reported in a previous study, which stated that Canva-based visual media supported conceptual understanding by transforming abstract grammatical concepts into concrete visual representations (Suciati et al., 2024).

From a constructivist perspective, learning is more effective when students actively construct knowledge through meaningful experiences. The use of Canva AI enables students to engage in observation, comparison, and language production activities that strengthen their understanding of grammatical structures. This aligns with recent research highlighting that AI-assisted learning media improves cognitive learning outcomes in elementary education (Sartimah & Dalimunthe, 2025).

Student Perceptions of Canva AI

Findings indicate that students generally had positive perceptions of Canva AI as a learning tool. They described the learning experience as engaging, interactive, and easier to understand compared to traditional grammar lessons. The novelty of using AI-based learning media also increased their curiosity and motivation to participate in class activities. Students also reported feeling more confident when answering questions because visual cues helped them recall vocabulary and sentence structures more easily. This supports recent evidence that AI-integrated learning tools can increase student motivation and confidence in language learning environments (Astaño, 2025).

Furthermore, Canva AI fostered a more dynamic classroom atmosphere in which students were encouraged to interact, discuss, and collaborate. This suggests that digital learning tools not only support cognitive development but also contribute to affective aspects of learning such as motivation and engagement.

Discussion

The findings of this study indicate that Canva AI contributed in increased engagement, comprehension, and motivation among fifth-grade students learning about Degrees of Comparison. The integration of AI-based visual media provided a more interactive, meaningful, and student-centered learning environment. One possible explanation for the increased engagement is Canva AI's multimodal nature, which combines visual, textual, and contextual elements. According to recent educational technology studies, AI-powered learning tools increase attention and motivation by presenting information in visually stimulating formats that align with children's cognitive developmental levels (Astaño, 2025; Nurjanah et al., 2025).

Furthermore, the increased student comprehension can be explained through the principles of visual learning and constructivist theory. Students are more likely to grasp abstract grammatical concepts when

presented in a concrete and contextualized form. Canva AI facilitates this process by enabling teachers to design visual comparisons relevant to students' everyday experiences.

The uniqueness of this study lies in its focus on applying Canva AI specifically to teaching English grammar at the elementary level. Although previous studies have examined Canva as a general teaching tool, research on its integration of AI features for grammar instruction in early childhood education remains limited. Therefore, this study contributes to the growing literature on artificial intelligence in education, particularly in the context of elementary English language teaching.

Recent studies also confirm that AI-based educational tools are increasingly being adopted in Indonesian classrooms to support lesson preparation and enhance students' learning experiences (Sartimah & Dalimunthe, 2025). However, effective implementation still depends on teachers' digital competencies and the pedagogical design of learning activities. Overall, Canva AI should be seen as a complementary teaching tool that supports, rather than replaces, the teacher's role in classroom instruction. Its effectiveness lies in how it is integrated into the learning design and used to facilitate meaningful learning experiences.

CONCLUSION

This study concluded that using Canva AI in teach the Degrees of Comparison positively contributed to student engagement during English learning activities. Findings showed that integrating Canva AI created a more interactive and enjoyable classroom atmosphere, encouraging students to participate more actively in lessons. Students demonstrated higher levels of engagement through increased participation in class activities, greater interest in learning tasks, and stronger motivation to participate in discussions. They also demonstrated greater confidence in expressing their ideas and completing learning activities. These findings suggest that Canva AI can support behavioral, emotional, and cognitive engagement among elementary school students.

Furthermore, the study found that the use of visual and AI-assisted learning materials helped students grasp the concept of Degrees of Comparison more easily. Students were better able to distinguish between positive, comparative, and superlative forms through contextual and visual examples. However, this improvement in grammatical understanding emerged as a secondary finding and was not the primary focus of this study.

Overall, Canva AI can be considered a useful teaching tool for increasing student engagement in English learning at the elementary school level. However, its effectiveness depends on how teachers design and implement learning activities in the classroom. Therefore, Canva AI should be viewed as a complementary tool that supports teaching practices, not as a substitute for the teacher's role. Further studies are recommended to investigate student engagement in various English language skills, such as reading, writing, speaking, or listening, and involve a larger number of participants to obtain more comprehensive findings.

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