Exploring Fourth-Grade Students' Perceptions of Genially-Integrated Interactive Learning Media in Science Education

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Keywords	Abstract
Interactive Learning Media, Genially, Science Education	Interactive media can facilitate engaging and enjoyable learning experiences. One medium that meets these criteria is Genially-integrated interactive learning media. This study aims to explore students' perceptions of the use of Genially-integrated interactive learning media in science education. A descriptive quantitative approach was employed using a questionnaire distributed to 29 fourth-grade students. The questionnaire consisted of 12 statements covering aspects of student satisfaction, comfort, interest, and learning effectiveness. The collected data were analyzed using percentage criteria for perception scores. Results revealed that students responded positively to Genially-integrated interactive learning media, with a high level of agreement ranging from 83% to 90%. This favorable response is attributed to the media's various interactive features, which enhance its functionality as a learning tool. The findings suggest that Genially-integrated interactive learning media can serve as a reference for classroom learning, particularly to boost student motivation and engagement.

Introduction

21st-century learning emphasizes a student-centered approach. The 21st-century skills, commonly referred to as the 4Cs—critical thinking, creativity, collaboration, and communication—are essential for students (Septikasari & Frasandy, 2018). These skills prepare students to face future challenges, particularly in competing in the workforce of the

Industrial Era 4.0. Educational institutions must align their teaching strategies to meet these standards. The integration of 4C skills positively impacts students' personal development, ensuring they gain not only academic knowledge but also essential life skills (Lestari & Hindun, 2024).

One effective effort to prepare students for future challenges is transitioning from teacher-centered learning methods to student-centered learning (SCL). SCL focuses on nurturing students' talents, abilities, personalities, and needs while fostering their independence in the learning process (Salay, 2019). This approach encourages dynamic interaction in the classroom. Interactive learning, as supported by constructivist theory, helps students develop a deeper understanding (Hidayah et al., 2017; Solihin, Rachmadyanti, et al., 2024). Moreover, an interactive learning environment aids teachers in motivating and guiding students effectively. Interactive media not only enhances learning motivation but also fosters creativity and critical thinking (Doronina, 2021). It enables students to acquire knowledge independently and apply it in various contexts, contributing to problem-solving skills.

In Indonesia, Government Regulation No. 19 of 2005, mandates that teaching and learning processes must be interactive, inspiring, enjoyable, and challenging, encouraging active student participation. Furthermore, education should provide opportunities for the development of creativity, initiative, and independence based on students' interests, talents, and growth. Technology plays a critical role in modernizing education by enhancing interaction in the learning process (Solihin et al., 2024). Technological tools, including web-based platforms, allow teachers to deliver material more effectively and create engaging learning experiences. As noted by Yunita & Wijayanti (2017), computer-based teaching enables efficient content delivery and encourages meaningful learning for students.

The availability of internet-enabled smartboards in the fourth-grade classrooms of School of Indonesia-Riyadh for the 2024/2025 academic year presents opportunities and challenges for educators to maximize the use of these facilities. Teachers are tasked with leveraging these tools creatively and innovatively to enhance the learning experience. Genially, a web-based interactive media platform, offers various features suitable for educational purposes, including presentations, animations, videos, infographics, electronic posters, quizzes, and games (Rinjani, 2024). These features make it a promising tool for student engagement in digital-era learning.

In science education, several online platforms have been utilized, including Genially for topics like "Forces Around Us." However, feedback from students regarding the use of this media has not been systematically analyzed. Understanding students' perceptions is crucial in evaluating the effectiveness of Genially-integrated interactive learning media. This study seeks to investigate students' perceptions of the media to inform decisions on its implementation in teaching and learning processes.

Method

Research design

This study employed a descriptive quantitative research design to analyze students' perceptions of using Genially-integrated interactive learning media. The descriptive quantitative approach was selected to systematically describe and quantify students' perspectives on three key aspects: satisfaction and comfort, learning interest, and learning effectiveness. This design allowed for a clear understanding of how the interactive media influenced students' learning experiences.

Research sample

The study sample consisted of 29 fourth-grade students (15 male and 14 female) from Sekolah Indonesia Riyadh during the first semester of the 2024/2025 academic year. These students were chosen based on their direct exposure to interactive learning using Genially during their science lessons, particularly on the topic "Forces Around Us." This purposeful sampling ensured that the data collected was relevant and reflected the actual implementation of Genially in classroom activities.

Research procedure

The research procedure began with the preparation of a questionnaire designed to evaluate the three aspects of interest. The questionnaire consisted of 12 Likert-scale items, with response options ranging from "Strongly Agree" to "Strongly Disagree," following criteria adapted from (Firdiansyah & Pamungkas, 2021). To ensure the reliability and validity of the instrument, it was reviewed and validated by education experts. During data collection, the questionnaire was distributed to students, who were also provided with an open-ended question at the end to allow for more detailed and personalized feedback. Responses were gathered, organized, and prepared for analysis.

Data analysis

Data analysis was conducted in two stages. First, quantitative data from the Likert-scale responses were analyzed using percentage-based criteria for perception scores, applying the formula adapted from Astuti et al. (2024). This analysis provided a clear picture of students' overall perceptions across the three aspects. Second, qualitative data from the open-ended question were analyzed thematically to identify recurring patterns, unique insights, and additional feedback regarding the use of Genially as an interactive learning tool. This dual

approach ensured a comprehensive understanding of students' perceptions and experiences with the media.

Results and Discussion

Results

This study involved a survey consisting of 16 statements distributed to 29 fourth-grade students, yielding positive results. The statements were designed to evaluate three primary aspects of the Genially-integrated interactive learning media: student satisfaction and comfort, learning interest, and learning effectiveness.

Student Satisfaction and Comfort

Student satisfaction and comfort are critical factors in the learning process. Four statements assessed this aspect, focusing on how comfortable and satisfied students felt using the Genially-integrated interactive learning media during science lessons. The responses indicated a positive perception across all statements.
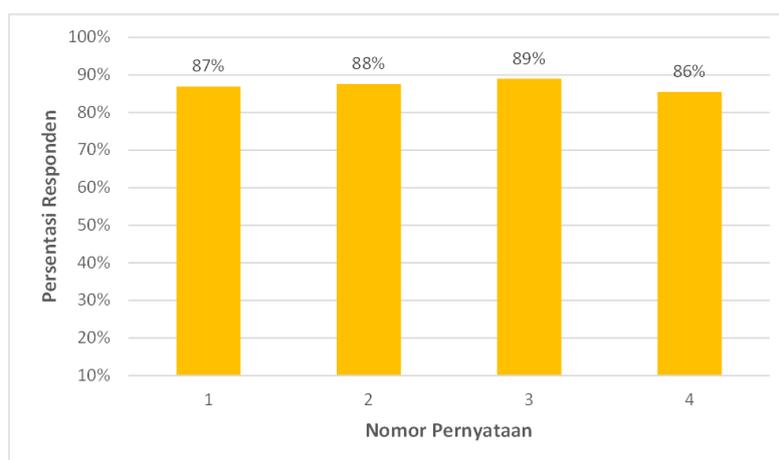

Figure 1. Presentation Chart of Student Responses on Satisfaction and Student Comfort

- **Statement 1:** "I feel comfortable using Genially-integrated interactive learning media in science lessons." Among the 29 students, 19 agreed, and 10 strongly agreed, yielding a percentage score of 87%, classified as "strongly agree." This finding reflects students' comfort with the media.

- **Statement 2:** "The user interface of the Genially-integrated interactive learning media is easy to understand and use." Here, 11 students strongly agreed, and 18 agreed, resulting in a score of 88%, indicating a "strongly agree" classification. Students appreciated the ease of use of the media.

- **Statement 3:** "I am satisfied with the learning experience using Genially-integrated interactive learning media." With 13 students strongly agreeing and 16 agreeing, the percentage score reached 89%, classified as "strongly agree." This highlights students' overall satisfaction.

- **Statement 4:** "The Genially-integrated interactive learning media provides quick and easy access to science learning materials." Eight students strongly agreed, and 21 agreed, achieving a score of 86%, also classified as "strongly agree." Students valued the accessibility offered by the media.

Learning Interest

Students' interest in learning was another crucial aspect evaluated through four statements. The responses showed positive perceptions, with students expressing increased motivation and enthusiasm for learning science.
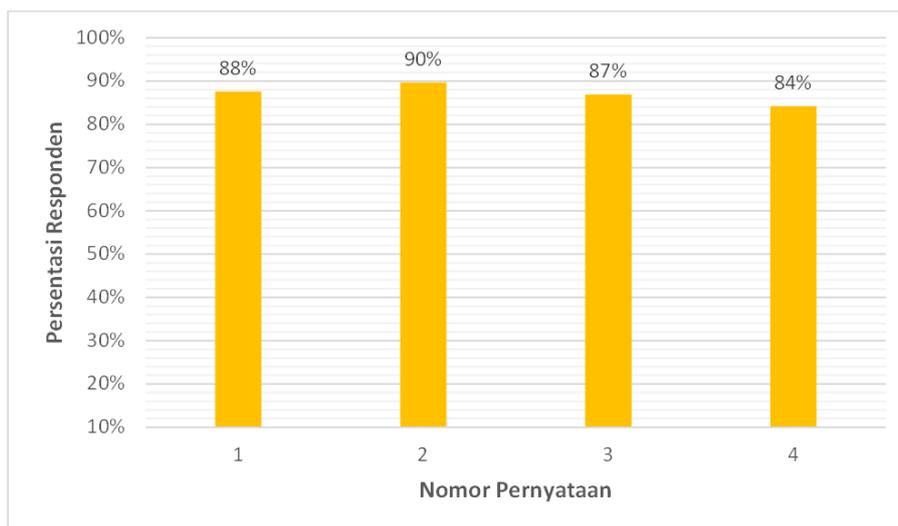

Figure 2. Presentation Chart of Student Responses on the Request to Learn Aspect

- **Statement 1:** "Using Genially-integrated interactive learning media makes me more interested in learning science." Eleven students strongly agreed, and 18 agreed, resulting in an 88% score, classified as "strongly agree." This indicates heightened interest.

- **Statement 2:** "I feel more motivated to learn science when using Genially-integrated interactive learning media." Fourteen students strongly agreed, and 15 agreed, leading to a 90% score, classified as "strongly agree." Students felt highly motivated.

- **Statement 3:** "The Genially-integrated interactive learning media increases my interest in actively participating in science lessons." Ten students strongly agreed, and 19

agreed, yielding an 87% score, classified as "strongly agree." This reflects active engagement.

- **Statement 4:** "I am more enthusiastic about studying science topics with Genially-integrated interactive learning media." Six students strongly agreed, and 23 agreed, achieving a score of 84%, classified as "strongly agree." Students expressed enthusiasm for the learning process.

Learning Effectiveness

The effectiveness of the Genially-integrated interactive learning media in enhancing learning efficiency and engagement was evaluated using four statements. Positive responses from students highlighted the media's effectiveness.
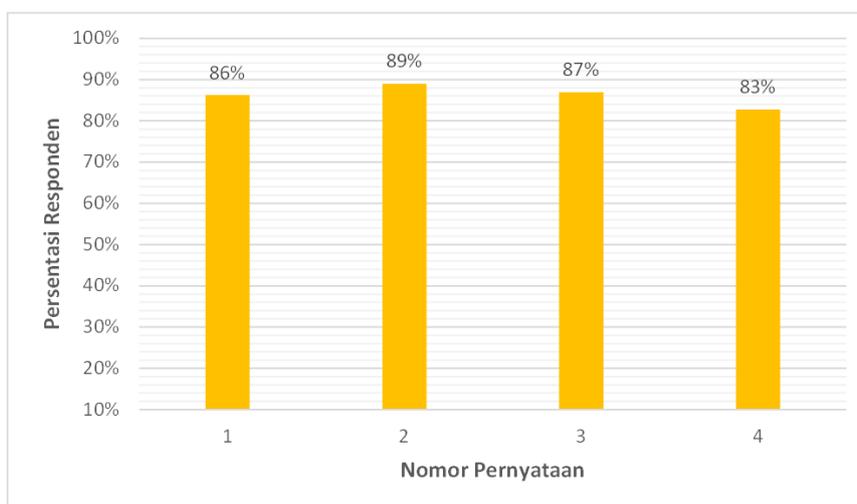

Figure 3. Presentation Chart of Student Response on Learning Effectiveness

- **Statement 1:** "I feel the Genially-integrated interactive learning media helps me understand science concepts more clearly." Nine students strongly agreed, and 20 agreed, producing an 86% score, classified as "strongly agree." This indicates improved concept comprehension.

- **Statement 2:** "The Genially-integrated interactive learning media makes it easier for me to remember the science materials I have learned." Thirteen students strongly agreed, and 16 agreed, resulting in an 89% score, classified as "strongly agree." Students found the media helpful for retention.

- **Statement 3:** "I feel more confident applying science concepts after using Genially-integrated interactive learning media." Ten students strongly agreed, and 19 agreed, yielding an 87% score, classified as "strongly agree." This demonstrates increased confidence.

- **Statement 4:** "I feel more confident applying science concepts after using Genially-integrated interactive learning media." Five students strongly agreed, and 24 agreed, achieving an 83% score, classified as "strongly agree." This shows consistent positive feedback on confidence-building.

The findings reveal that students perceive Genially-integrated interactive learning media positively across all evaluated aspects. High scores in satisfaction, interest, and effectiveness highlight the media's potential to enhance the learning experience. The user-friendly interface, engaging content, and accessibility contributed to students' satisfaction and comfort. Increased motivation and active participation suggest that the media effectively captured students' interest. Moreover, improved concept comprehension, confidence, and retention indicate the media's role in fostering effective learning outcomes.

These results align with previous studies emphasizing the importance of integrating technology into education to create interactive and meaningful learning experiences. The positive feedback from students underscores Genially's potential as a valuable tool for improving science education and promoting 21st-century skills. Future research could explore its long-term impact on academic performance and investigate its applicability in other subjects.

Discussion

The use of game-based learning media, such as the Genially-integrated interactive learning media, has shown significant potential in enhancing student satisfaction and comfort during the learning process. This aligns with previous research indicating that educational games can boost student motivation and engagement, contributing to a more positive learning experience (Abidin, 2023; Hamari et al., 2016; Sabirli & Çoklar, 2020). In this context, the interactive elements of Genially-designed learning media create an enjoyable and engaging learning environment, fostering greater student involvement and comfort.

A study by Hamari et al. (2016) highlighted how challenging games enhance students' learning experiences by increasing their engagement and fostering positive feelings during the learning process. Consequently, using Genially-integrated interactive media not only makes learning enjoyable but also improves students' comprehension. Similarly, Acquah & Katz (2020) found that digital games enhance students' learning outcomes in terms of both motivation and perceptions of the learning process. The interactive and competitive elements in Genially can encourage students to participate more actively and collaborate, increasing their satisfaction with the applied learning methods (Mulhem & Almaiah, 2021). Furthermore, visually appealing learning media like Genially allow direct and interactive engagement with content, which enhances student comfort.

Interactive learning media also prove effective in boosting students' interest in learning. By providing engaging and enjoyable experiences, such media encourage students to

participate actively in the learning process. Studies suggest that interactive media reduce the monotony of traditional lecture-based methods, thus improving student motivation and interest (Solihin et al., 2024; Vivianingsih et al., 2023). Hence, integrating interactive media like Genially offers a solution for enhancing students' engagement and learning enthusiasm.

One of the primary advantages of interactive learning media is their ability to present material in an attractive and easily digestible manner. For instance, using interactive videos and visual elements helps students grasp complex concepts more effectively (Vivianingsih, 2023). Research by Luma'ul'adilah (2023) demonstrates that students actively using interactive learning media exhibit better engagement and understanding of the taught material. Additionally, such media enable independent and creative learning, crucial for fostering students' interest in learning. Interactive media also promote classroom participation, as found by Wulandari et al. (2021), who observed a significant positive impact of interactive media on students' learning processes, including heightened interest and motivation.

Interactive media help mitigate misconceptions and enhance students' understanding of concepts. For example, Nurhafidhah & Hasby (2018) showed how Microsoft Excel-based interactive learning media reduced misconceptions and improved concept comprehension. This indicates that interactive media not only boost interest but also contribute to deeper understanding of taught concepts. Genially, therefore, serves as an effective tool for increasing student interest and comprehension in various subjects.

A key benefit of Genially is its ability to present visual and interactive information, aiding students in intuitively understanding complex concepts. For instance, animations, graphics, and videos in interactive media can clarify natural phenomena, enabling students to connect theory and practice (Biantoro, 2024). Research by Novanto et al. (2023) demonstrated how interactive learning media enhance students' understanding of science concepts by allowing virtual exploration and experimentation.

The motivational impact of interactive media is significant. By offering engaging and interactive formats, students are more likely to actively engage in the learning process, which improves their learning outcomes. Wahyuni (2022) confirmed that interactive and enjoyable science learning methods motivate students to participate actively, facilitating easier comprehension of concepts. Interactive media also empower students with the flexibility to access materials anytime, anywhere, promoting independent learning (Biantoro, 2024).

Integrating Genially into science learning supports differentiated instruction, enabling students to learn according to their individual styles and needs. This ensures that all students, regardless of background and abilities, can understand science concepts effectively (Wahyuni, 2022). Sandiwarno's research highlights how interactive learning models enhance students' conceptual understanding, especially when they can actively explore materials (Siahaan & Sihotang, 2023).

Finally, designing effective educational games requires careful consideration of learning objectives, game mechanics, and interactivity (Lameras et al., 2017). By integrating interactive learning media into Genially, educators can create learning experiences that are both enjoyable and educational, ensuring student satisfaction and comfort throughout the learning process. This is consistent with findings that educational games improve students' cognitive and social skills while promoting active learning (Kwak et al., 2018).

In summary, the study confirms that integrating Genially-interactive learning media effectively enhances satisfaction, motivation, and comprehension among students. Its engaging and accessible features make it a valuable tool for creating dynamic, student-centered learning environments. This approach can be extended to other subjects, offering opportunities for broader application and further research.

Conclusion

The integration of Genially-interactive learning media enhances the effectiveness of learning by creating engaging experiences, increasing student participation, and providing immediate feedback. This technology fosters a dynamic and collaborative learning environment, contributing to improved learning outcomes. By presenting material in an interactive and visually appealing manner, Genially significantly boosts student interest, reduces monotony, and facilitates a clearer understanding of concepts. This approach ensures learning is both enjoyable and effective, supporting better comprehension and academic performance.

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