



The Development of Interactive Media Based on the Quizizz Application for Science Subject

Heri Supriyadi^{1(*)}, Yusuf Hartono², and Riswan Jaenudin³

^{1,2,3}Sriwijaya University, Palembang, Indonesia

Received : November 15, 2025
Revised : March 20, 2026
Accepted : April 21, 2026

Abstract

This study aims to produce interactive media based on the Quizizz application that is valid, practical, and effective for fifth-grade science subjects at SD Negeri 7 Lahat. This study involved 15 fifth-grade students. The study uses the Hannafin and Peck development model consisting of three stages: needs analysis, design–development, and implementation–evaluation. Based on the results of the needs analysis, it shows that the limitations of learning media mean that teachers need media that can support the learning process. Meanwhile, students are less motivated and have difficulty understanding science lesson concepts when delivered using conventional methods. The results of validation by experts show that this media is very valid, with a score of 98% for material, 94% for media, and 84% for language. The practicality test was carried out through one-to-one and small group tests with a score of 96.22%. The effectiveness test results showed an increase in learning outcomes from an average pretest score of 53.67 to 88.00 in the posttest, with an N-Gain value of 0.78, which is considered high. Thus, the Quizizz app-based interactive media was declared feasible and effective for improving fifth-grade elementary school students' science learning outcomes.

Keywords:

Interactive Learning Media; Quizizz Application; Science Education, Elementary School; Educational Technology

(*) Corresponding Author:

herisupriadi991@gmail.com

How to Cite: Supriyadi, H., Hartono, Y., & Jaenudin, R. (2026). The Development of Interactive Media Based on the Quizizz Application for Science Subject. *JTP - Jurnal Teknologi Pendidikan*, 28(1), 299–311. <https://doi.org/10.21009/jtp.v28i1.62103>

INTRODUCTION

Education in Indonesia continues to adapt to the rapid advancement of technology (Dai et al., 2020; Fatikhasari et al., 2024). This development brings its own challenges in maintaining students' interest and motivation to learn, especially in the subject of Science. In this context, science learning at the elementary school level requires the use of instructional media that integrates technology to support students' understanding and skill development. Interactive media is considered effective when it provides opportunities for students to practice and receive immediate feedback. Such media can present learning content in a more engaging and interactive way by combining elements such as images, audio, video, and animation into a single platform, making it easier for students to understand abstract concepts.

The use of technology in education opens up great opportunities for teachers and students to access various internet-based learning media (Putri Supriadi et al., 2022; Sofiyani et al., 2019; Yani, 2024). One of the innovations that is now widely



used is interactive media. This type of media not only serves to deliver information but also encourages students to think, practice, and receive immediate feedback (Kasman & Lubis, 2022). The integration of various elements such as images, sound, video, and animation within a single medium makes the learning process more enjoyable and easier to understand (Lestari et al., 2024). This approach aligns with the principles of Educational Technology, which emphasize the importance of systematic design, implementation, and evaluation of learning to create an effective and efficient learning process (Sarah et al., 2023).

One of the interactive media platforms that has great potential to be applied in science learning is Quizizz. This platform combines elements of games and learning through interactive quizzes equipped with animations, images, and direct feedback features (Tirtadewi et al., 2021). The use of Quizizz allows teachers to create a fun and competitive learning atmosphere while helping students better understand the material (Zhao, 2019). Through features such as the scoring system, leaderboard, and image- and animation-based quizzes, Quizizz can stimulate learning enthusiasm and enhance students' active engagement in the classroom (Wati et al., 2025).

Observations at SD Negeri 7 Lahat show that teachers still face challenges in designing and delivering science lessons in an engaging way. Learning activities are still dominated by the use of textbooks, PowerPoint slides, and YouTube videos, which have not been fully effective in capturing students' attention. Yet, the school has adequate technological facilities such as Chromebook devices and a stable internet connection.

This situation presents a great opportunity to develop more interactive technology-based learning media, one of which is by integrating instructional videos into the Quizizz application. The combination of videos, game elements, and quizzes is believed to create a more dynamic learning experience, motivate students, and help teachers improve teaching effectiveness.

Based on this background, the development of interactive media based on the Quizizz application integrated with instructional videos becomes essential to implement in science learning for Grade V students at SD Negeri 7 Lahat. Through this medium, students are not only encouraged to learn actively and enjoyably but also to strengthen their understanding of science concepts more deeply. Thus, the use of interactive media such as Quizizz has great potential to enhance students' motivation, participation, and learning outcomes in today's digital era.

METHODS

This study employs a descriptive developmental research approach, which aims to gain a deep understanding of the needs for science learning media as well as the readiness of technological facilities and infrastructure at the school (Moleong, 2018; Sugiyono, 2014). This approach was chosen because it allows the researcher to explore phenomena comprehensively and naturally within the context that occurs in the field (Creswell, 2014; Twycross, 2004). The main focus of this research is directed toward understanding how teachers and students perceive current science learning, including the challenges faced, the teaching strategies

used, and the potential for integrating technology-based interactive media. SD Negeri 7 Lahat was selected as the research site because the school already possesses adequate digital support facilities but has not yet utilized them optimally in the science learning process.

This study employs the Hannafin and Peck development model, which consists of three main phases: needs analysis, design–development, and implementation–evaluation. First, the needs analysis stage focuses on identifying learning problems, as well as teachers’ and students’ needs, characteristics, and curriculum alignment. Second, the design–development stage involves planning and producing the instructional media, including content preparation, visual design, and integration into the Quizizz platform. Third, the implementation–evaluation stage refers to the application of the developed media in the classroom, followed by evaluation through testing, observation, and feedback to assess its effectiveness and make necessary revisions.

The research subjects consisted of one Grade V science teacher and 15 fifth-grade students at SD Negeri 7 Lahat. The teacher serves as the primary source of information to explore the needs for learning media and to understand the difficulties in delivering the material, while the students provide perspectives on their learning interests and experiences with the media used so far. Data were collected through in-depth interviews with the science teacher using a structured guide that covered aspects such as curriculum, school facilities, computer laboratory conditions, and the need for technology-based media. In addition to interviews, participatory observations were conducted during classroom activities to directly observe student engagement, media usage, and the utilization of technological facilities such as Chromebooks and the school’s internet network.

The data obtained from interviews and observations were analyzed using a qualitative descriptive analysis method, which consists of three main stages: data reduction, data presentation, and conclusion drawing. The data reduction stage involved filtering important information and grouping findings based on emerging patterns (Oviliani & Susanto, 2023). The reduced data were then presented in narrative form to make them easier to understand and interpret. Finally, conclusions were drawn based on the analysis of the organized data, focusing on identifying the needs and urgency of developing interactive media based on Quizizz for science learning.

RESULTS AND DISCUSSION

Technological Infrastructure as the Foundation of Digital Learning

Based on the results of the questionnaire distributed to Grade V students of SD Negeri 7 Lahat, it was found that the school’s infrastructure conditions have already supported the implementation of technology-based learning. Most students gave positive responses regarding the availability of facilities and infrastructure such as the electrical network, computer laboratory, and digital learning support devices. The analysis results showed that 66.7% of students stated that the school’s electrical network is always available and functions well, while the remaining 33.3% also provided positive assessments of this aspect. This condition indicates

that the stability of the electricity supply serves as a key foundation that enables the smooth implementation of interactive digital-based learning (Atika et al., 2024). The computer laboratory facilities were also rated as being in good to excellent condition, allowing them to be optimized to support the science learning process (Kim et al., 2019). Thus, in general, the school already has adequate technical readiness for integrating digital learning media (Mustikasari et al., 2023).

In addition, the availability of devices such as Chromebooks, LCD projectors, active speakers, and WiFi networks also received highly positive assessments from students. A total of 80% of respondents stated that these devices function very well and help make the learning process more engaging. Meanwhile, 20% of students rated these facilities as good, meaning that no respondents gave a poor assessment of the available technological facilities. This finding indicates that SD Negeri 7 Lahat possesses a strong foundation for optimally implementing technology-based learning. The good quality of the internet network further strengthens this readiness, as 60% of students rated the network as very good and 33.3% as good. With such infrastructural support, teachers have a significant opportunity to continuously introduce interactive media, such as the Quizizz application, into science learning activities.

These findings demonstrate that the school's infrastructure readiness is no longer the main obstacle in implementing technology-based learning. Instead, the emerging challenge lies in how teachers can utilize these facilities effectively and innovatively (Fakhrudin et al., 2024; Hidayati et al., 2025). This result is consistent with previous studies, which emphasize that the availability of adequate technological devices must be accompanied by teachers' creativity in designing meaningful and engaging learning experiences (Saddad et al., 2025). In line with this, Darne et al. (2024) and Novia et al. (2024) argue that the mere presence of technological tools without pedagogical innovation will only position them as supplementary instruments rather than as drivers of improved learning quality.

The Effectiveness of Quizizz in Digital-Based Science Learning

In developing the interactive learning media, the researcher utilized Quizizz as the main platform due to its capability to facilitate active student engagement through digital-based quizzes. To support the instructional design, Canva was used to create visually appealing and well-structured learning videos aligned with the Grade V science curriculum. These visual elements were then integrated into Quizizz, which offers features such as animations, automatic scoring, and interactive quiz formats. This integration creates a dynamic learning environment that not only enhances the attractiveness of the media but also promotes students' participation and engagement during the learning process.

The effectiveness of Quizizz is reflected in its gamification features, which enable students to learn in a more enjoyable and interactive manner. Features such as instant feedback and quiz repetition help students better understand the material and reinforce their learning. This approach supports deeper conceptual understanding, particularly in science subjects that often involve abstract concepts. Through a systematic development process, the resulting media is not only engaging but also pedagogically relevant, demonstrating that the integration of interactive quizzes and multimedia elements can significantly improve the quality

of digital-based science learning.

To further ensure the effectiveness of the developed media, a validation process was conducted involving three expert domains. Material validation was carried out by Dr. Sardianto Markos Siahaan, M.Pd., M.Si., focusing on the alignment of content with the curriculum, learning objectives, and the accuracy of the material. Media validation was conducted by Dr. Erna Retna Safitri, M.Pd., who evaluated the visual design, animation, and interactivity to ensure the media was engaging, effective, and user-friendly. Lastly, language validation was performed by Dr. Ernalida, Ph.D., to assess the clarity, readability, and appropriateness of the language used, ensuring that the content is easily understood by students.

First, material experts analyzed various aspects of the prepared Quizizz application, including the alignment of content with the curriculum, learning objectives, level of difficulty, and the accuracy of the material. Based on the validation results, the percentage obtained indicates that the material is highly feasible to be applied in the learning process, although minor revisions may still be needed. For further review, see Table 1 on the results of material expert validation.

Table 1. Material Expert Assessment of the Quizizz Application

| Aspect | Actual Score | Ideal Score | Percentage |
|--|--------------|-------------|------------|
| Content alignment with learning outcomes | 5 | 5 | 100 |
| Alignment with learning objectives | 5 | 5 | 100 |
| Appropriateness of difficulty level | 5 | 5 | 100 |
| Content accuracy | 24 | 25 | 96 |
| Instructional support | 19 | 20 | 95 |
| Content currency | 10 | 10 | 100 |
| Presentation technique | 5 | 5 | 100 |
| Presentation support | 10 | 10 | 100 |
| Presentation feasibility | 15 | 15 | 100 |
| Total | 98 | 100 | 98 |

Source: Processed data, 2025.

Second, media experts analyzed various aspects of the Quizizz application that had been developed, including layout design, typography, visual elements, audio, video, and its effectiveness in enhancing students' understanding and participation. Based on the validation results, the percentage obtained indicates that the media is highly feasible to be applied in the learning process, although several aspects still require minor improvement. For further review, see Table 2 on the results of media expert validation.

Table 2. Media Expert Assessment of the Quizizz Application

| Aspect | Actual Score | Ideal Score | Percentage |
|---------------|--------------|-------------|------------|
| Layout design | 9 | 10 | 90 |

| | | | |
|--|----|----|-----|
| Text/typography | 10 | 10 | 100 |
| Images | 14 | 15 | 93 |
| Audio | 10 | 10 | 100 |
| Video | 10 | 10 | 100 |
| Packaging | 10 | 10 | 100 |
| Student engagement | 5 | 5 | 100 |
| Enhancement of students' understanding | 9 | 10 | 90 |
| Enhancement of students' participation | 4 | 5 | 80 |
| Depth of material | 4 | 5 | 80 |
| Total | 85 | 90 | 94 |

Source: Processed data, 2025.

Third, language experts analyzed various aspects of the Quizizz application, including clarity, sentence structure, readability, and language consistency. Based on the validation results, the percentage obtained indicates that the language used is feasible to be applied in the learning process, although some improvements are still needed to enhance clarity and effectiveness. For further review, see Table 3 on the results of language expert validation.

Table 3. Language Expert Assessment of the Quizizz Application

| Aspect | Actual Score | Ideal Score | Percentage |
|----------------------|--------------|-------------|------------|
| Clarity of language | 22 | 25 | 88 |
| Sentence structure | 12 | 15 | 80 |
| Language consistency | 12 | 15 | 80 |
| Total | 46 | 55 | 84 |

Source: Processed data, 2025.

The results of this questionnaire provide a strong foundation for the development of interactive media based on the Quizizz application (Bindiya & Fediyanto, 2023). By utilizing the existing school facilities, interactive media can be developed to strengthen students' motivation and conceptual understanding in science learning (Singh & Manjaly, 2022). However, this study further demonstrates that the effectiveness of such media is not solely dependent on technological availability, but also on how the media is designed to integrate interactive features and instructional content that align with students' learning needs.

Furthermore, the questionnaire results show that 94% of students feel the need for additional media to help them understand science material, which they consider quite difficult (Sari et al., 2024). This figure indicates a high level of student awareness of the importance of varied and engaging learning media. In addition, 93.3% of students stated that technology-based media make the learning process more enjoyable. This finding is consistent with Ruhsoh Triyani (2023), who found

that features such as animation, sound, and interactive elements can help students understand learning material more effectively.

The results, as presented in Table 4, indicate a substantial improvement in students' understanding of the science material following the implementation of Quizizz-based interactive media. The average pretest score of 53.67 reflects a moderate initial level of conceptual comprehension, while the posttest average increased significantly to 88.00, demonstrating enhanced learning outcomes. Furthermore, the average N-Gain score of 0.78, categorized as high, confirms that the learning gains achieved are considerable. These findings highlight the effectiveness of Quizizz-based interactive media in improving students' conceptual understanding and overall performance in science learning.

Table 4. Students' Pretest, Posttest, and N-Gain Results

| Students | Pretest | Posttest | N-Gain | Category |
|----------|---------|----------|--------|----------|
| AFR | 55 | 80 | 0.56 | Moderate |
| APN | 75 | 100 | 1 | High |
| AND | 80 | 100 | 1 | High |
| DKR | 30 | 75 | 0.64 | Moderate |
| DMS | 30 | 80 | 0.71 | High |
| KEA | 35 | 80 | 0.69 | Moderate |
| LPS | 45 | 75 | 0.55 | Moderate |
| MCA | 50 | 90 | 0.8 | High |
| MY | 65 | 95 | 0.86 | High |
| MRK | 55 | 90 | 0.78 | High |
| MRP | 60 | 100 | 1 | High |
| NKP | 80 | 100 | 1 | High |
| RKR | 30 | 80 | 0.71 | High |
| TNA | 55 | 85 | 0.67 | Moderate |
| KNS | 60 | 90 | 0.75 | High |
| Average | 53.67 | 88.00 | 0.78 | - |

Source: Processed data, 2025.

These findings indicate that students prefer a learning model that is not only informative but also stimulates curiosity through interactive and experiential learning (Firmansyah R et al., 2023). Students' enthusiasm for using technology-based learning applications is also reflected in their responses to Quizizz. A total of 73.3% of students stated that this application helps them understand the material and enhances their learning motivation. Meanwhile, 26.7% of students rated it as fairly good, indicating that most students have already experienced its benefits, albeit to varying degrees.

Students also noted that Quizizz has an appealing and engaging interface, as it combines elements of games and education, making the learning process enjoyable rather than boring. Hidayati et al. (2025) also stated that the integration of game elements in learning media can create a more engaging and enjoyable learning atmosphere for students. Through features such as scoreboards, ranking

systems, and immediate feedback, students feel more challenged and motivated to answer questions correctly. This condition indicates that integrating game elements into the learning process can create a competitive and enjoyable atmosphere without diminishing the educational value.

Integrating Quizizz in Elementary School Science Learning

Based on the results of interviews with the Grade V teacher, it was found that the teacher has indeed made efforts to use various media to enrich science learning. The media used include images, textbooks, YouTube videos, and PowerPoint presentations designed to explain the material visually (Kumalasani et al., 2025). However, the teacher admitted that these media have not been fully able to capture students' attention. Conventional media remain passive, where students act only as recipients of information with limited opportunities for interaction. The teacher also mentioned that the lecture and discussion methods currently used are less effective in stimulating active participation. This situation causes students to easily lose focus and experience a decline in learning motivation in science lessons.

The teacher recognizes that science learning should not only emphasize the delivery of theory but also foster active and contextual learning experiences. In the interview, the teacher emphasized that students become highly enthusiastic when lessons involve hands-on activities or educational games. Interactive media that allow students to experiment and receive immediate feedback are considered an effective solution. The teacher also noted that the implementation of Quizizz is very suitable for the characteristics of elementary school students, who tend to enjoy visual-based learning activities and competitive elements (Amalia, 2020). Therefore, the development of interactive media that combines video elements and game-based quizzes is viewed as an appropriate strategy to enhance students' learning motivation. This condition underscores the importance of media innovation in improving the quality of learning at the elementary school level.

The results of participatory observation during classroom activities further support the findings from the questionnaires and interviews. The researcher observed that most students showed high interest when the teacher used media involving visual elements or game-based activities. When the teacher relied solely on lecture methods and textbooks, the classroom atmosphere became monotonous and less interactive. In contrast, when digital media were introduced, students appeared more active in responding and answering questions. This indicates that their learning style is better suited to approaches that combine technology and engaging visualizations. Therefore, the development of Quizizz-based learning media can be an effective alternative to enhance student engagement and concentration.

From the data collected, it can be concluded that the demand for interactive learning media at SD Negeri 7 Lahat is very high. Students not only require variety in material presentation but also media that can create an enjoyable learning environment. Teachers also need support in the form of practical and easy-to-use media to help deliver material more effectively. Application-based media such as Quizizz are considered to meet all these criteria because they present learning in an interactive quiz format with multimedia elements. With the integration of video, animation, and sound, this media can increase the appeal of science learning.

Therefore, the development of Quizizz-based interactive media becomes a strategic solution to meet the demands of 21st-century learning.

These findings are further discussed in relation to theories and concepts in educational technology. Technology-based learning requires infrastructure readiness, teacher competence, and student learning motivation. Based on the results of this study, SD Negeri 7 Lahat has met the first aspect, namely the availability of adequate facilities and supporting infrastructure. However, the second and third aspects still need to be strengthened through media development and teacher training in their utilization. Thus, this study not only highlights the school's physical readiness but also emphasizes the importance of pedagogical readiness. Interactive media like Quizizz serve as a bridge between technology and pedagogy, enhancing the effectiveness of science learning.

From the perspective of the Technology Acceptance Model (TAM), infrastructure readiness directly influences the perceived ease of use and perceived usefulness of technology by both teachers and students (Wati et al., 2025). When facilities are available and easily accessible, the likelihood of adopting technology-based media increases. In this context, SD Negeri 7 Lahat has shown great potential for the sustainable implementation of interactive media. Both teachers and students have had positive experiences using digital devices during learning. However, for optimal implementation, the media must be contextual and relevant to the curriculum as well as the characteristics of elementary school students. Therefore, Quizizz, which is flexible and easily adaptable to various needs, becomes a suitable choice for further development.

Meanwhile, constructivist theory emphasizes that students build their own knowledge through active learning experiences. Technology-based interactive media provides opportunities for students to explore material in a more meaningful way. This is especially relevant in science learning, where concepts are often abstract and require concrete visualization. With the inclusion of animations and videos in Quizizz, students can understand scientific processes that are difficult to explain through text or static images alone. Such learning experiences not only enhance conceptual understanding but also foster curiosity and critical thinking skills. Thus, interactive media can serve as a bridge between theory and practice in science learning.

Furthermore, students' positive responses to Quizizz features can also be explained through the concept of gamification in education. Gamification uses game elements to increase engagement and motivation. In Quizizz, elements such as scores, rankings, and instant feedback provide a more engaging learning experience. Students feel challenged to achieve the highest scores, naturally boosting their learning motivation. Additionally, appealing visualizations through animations and sound make the learning environment more dynamic and stimulating.

In addition to the cognitive aspect, gamification also has a positive impact on students' affective domain. They experience satisfaction when they answer questions correctly and achieve high scores. Their self-confidence also increases, as they can immediately see their learning progress through the instant quiz results. This supports the concept of Self-Determination Theory, which explains that intrinsic motivation arises when students feel a sense of control over their own

learning process (Prayunisa & Mahariyanti, 2022). Quizizz provides students the opportunity to learn at their own pace and receive immediate feedback on every attempt they make. Thus, this application not only offers external motivation but also fosters intrinsic learning drive within the students themselves.

The integration of instructional videos into Quizizz, as desired by the majority of students, will significantly enrich the learning experience. Videos can simplify complex science concepts into visual forms that are easier to understand (Muis, 2022). When visual and auditory elements are combined, students can process information more efficiently. This principle aligns with Multimedia Learning theory, which emphasizes that learning is more effective when information is presented through multiple sensory channels. Therefore, the combination of instructional videos and the interactive features of Quizizz can create a deeper learning experience (Tirtadewi et al., 2022). This approach also supports students with diverse learning styles, helping them understand the material more effectively.

From this study, it is clear that the use of interactive media is not merely a trend but a genuine necessity to improve the quality of science learning in elementary schools (Hidayati et al., 2025). Today's students live in a digitally rich and fast-changing environment, making conventional approaches less capable of meeting their needs. Teachers are required to adjust their teaching strategies to the characteristics of this generation to remain relevant and engaging. Quizizz serves as a solution by combining technology, gaming, and education within a single platform. Consequently, learning becomes not only informative but also transformative for students. Through enjoyable learning experiences, motivation and learning outcomes are expected to increase significantly.

Overall, the results of this study show a strong alignment between students' needs, school infrastructure readiness, and the potential of technology-based learning media. These three factors are key components in building a modern, effective, and sustainable learning system (Wati et al., 2025). The implementation of Quizizz-based interactive media not only addresses low learning motivation but also provides new opportunities for teachers to innovate. Technology in education is no longer seen as merely supplementary but as an integral part of the teaching and learning process. With adequate facilities and positive student responses, the development of this media can be a concrete step toward more meaningful learning.

The discussion also highlights the importance of teacher training and guidance in maximizing the use of interactive media. Even though school infrastructure is ready, pedagogical competence in using technology still needs to be strengthened for optimal media utilization. Teachers need to understand how to design learning content suitable for students' characteristics and effectively use interactive features. With ongoing training, teachers will gain confidence in using digital media as part of their teaching strategy. This will create a more dynamic, participatory, and technology-adaptive learning environment. Therefore, the success of implementing interactive media depends on the synergy between technological readiness and teachers' ability to manage it effectively.

CONCLUSION

The results of this study confirm that the development of interactive media based on the Quizizz application is a strategic step in enhancing the quality of science learning in Grade V at SD Negeri 7 Lahat. The school's technological infrastructure readiness serves as a key asset that should be optimized to provide more innovative and meaningful learning experiences. On the other hand, the limited effectiveness of the conventional media still in use highlights a gap between the potential of technology and actual classroom practice. The strong support and enthusiasm from both teachers and students toward the use of interactive media demonstrate that Quizizz is capable of meeting the demands of modern learning, which requires active engagement and enjoyable learning experiences.

This study has several limitations that should be acknowledged. First, the research was conducted in a single elementary school, which may limit the generalizability of the findings to broader educational contexts. Second, the sample size was relatively small, involving only 15 students, which may not fully represent diverse student characteristics. Therefore, future studies are recommended to include larger, more diverse samples to strengthen the external validity of the results. Additionally, although the developed media show promising results, their optimal implementation requires stronger technological infrastructure and the integration of complementary instructional strategies. Future research may also explore the long-term effects of Quizizz-based interactive media on students' retention and the sustainability of learning.

ACKNOWLEDGEMENTS

Gratitude is expressed to all parties who have provided support, assistance, and motivation throughout the course of this research. May all the kindness extended be rewarded and bring meaningful blessings.

REFERENCES

- Amalia, D. F. (2020). Quizizz Website as an Online Assessment for English Teaching and Learning: Students' Perspectives. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, 7(1), 1. <https://doi.org/10.33394/jo-elt.v7i1.2638>
- Bindiya, A., & Fediyanto, N. (2023). *EFL Students' Perceptions Towards Quizizz Usage in English Subject Formative Assessment* (Vol. 4, Issue 2, pp. 167–182). <https://doi.org/10.21070/ups.2015>
- Creswell, J. W. (2014). *Penelitian Kualitatif dan Desain Riset*. Pustaka Pelajar.
- Dai, Y., Chai, C. S., Lin, P. Y., Jong, M. S. Y., Guo, Y., & Qin, J. (2020). Promoting students' well-being by developing their readiness for the artificial intelligence age. *Sustainability (Switzerland)*, 12(16), 1–15. <https://doi.org/10.3390/su12166597>
- Darme, M., Kurniawati, & Marta, N. A. (2024). Museum Balaputra Dewa sebagai Sarana Pembelajaran Interaktif bagi Guru Sejarah di Kota Palembang. *Fajar Historia: Jurnal Ilmu Sejarah Dan Pendidikan*, 8(1), 78–92.

- <https://doi.org/10.29408/fhs.v8i1.24927>
- Fakhrudin, M., Darne, M., Andhifani, W. R., & Utami, L. S. (2024). Utilization Balaputra Dewa Museum as an Implementation of the Merdeka Curriculum for Learning History at SMAN 18 Palembang. *Naditira Widya*, 18(1), 49–64. <https://doi.org/10.55981/nw.2024.3010>
- Fatikhasari, D., Haq, M. M., Rosyidi, O. J., Sadieda, L. U., & Avivah, N. (2024). Penerapan Media Interaktif Quizizz untuk Mengembangkan Minat Belajar Siswa pada Materi Barisan dan Deret Aritmetika. *ELIPS: Jurnal Pendidikan Matematika*, 5(2), 232–241. <https://doi.org/10.47650/elips.v5i2.1429>
- Firmansyah R, Kholidin, N., Pariyem, P., & Enggar Kencana Dewi, S. (2023). Pengaruh Media Pembelajaran Interaktif Berbasis Game Edukasi Quizizz terhadap Hasil Belajar Siswa MIN. *Finger: Journal of Elementary School*, 2(2), 57–64. <https://doi.org/10.30599/finger.v2i2.658>
- Hidayati, N., Aripin, S., & Hina, S. (2025). Gamified Formative Assessment with Quizizz to Enhance Learning Outcomes at Madrasa. *Journal of Islamic Education Research*, 6(3), 303–314. <https://doi.org/10.35719/jier.v6i3.492>
- Kasman, & Lubis, S. K. (2022). Teachers' Performance Evaluation Instrument Designs in the Implementation of the New Learning Paradigm of the Merdeka Curriculum. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 8(3), 760–775. <https://doi.org/10.33394/jk.v8i3.5674>
- Kim, S., Im, D., Lee, J., & Choi, H. (2019). Utility of Digital Technologies for the Sustainability of Intangible Cultural Heritage (ICH) in Korea. *Sustainability*, 11(21), 1–19. <https://doi.org/10.3390/su11216117>
- Kumalasani, M. P., Suwandayani, B. I., & Pramusti, R. A. (2025). Digital Media Preferences for Differentiated Learning: A Study of PowerPoint and Video Use in the Merdeka Curriculum. *AL-ISHLAH: Jurnal Pendidikan*, 17(2), 3452–3463. <https://doi.org/10.35445/alishlah.v17i2.6873>
- Lestari, E., Basukiyatno, B., & Suriswo, S. (2024). Quizizz dalam Modul ajar IPAS untuk Meningkatkan Literasi Sains Siswa Sekolah Dasar. *Journal of Education Research*, 5(4), 6391–6397. <https://doi.org/10.37985/jer.v5i4.2063>
- Moleong, L. J. (2018). *Metodologi Penelitian Kualitatif* (38 edit). PT Remaja Rosda Karya.
- Muis, A. (2022). Pembelajaran Sains menggunakan Lab Riil dan Virtuil ditinjau dari Kemampuan Proses Sains dan Pengaruhnya terhadap Hasil Belajar. *Jurnal Kewarganegaraan*, 6(1), 195–201.
- Mustikasari, A. A., Yusuf, M., & Rejekiningsih, T. (2023). Gamification Based on Android to Improve Comprehension Civics for Deaf Student. *International Journal of Elementary Education*, 7(1), 8–18. <https://doi.org/10.23887/ijee.v7i1.58383>
- Nabila Atika, & Ngurah Ayu Nyoman Murniati. (2024). Penerapan Model PBL Berbantuan Media Wordwall Untuk Meningkatkan Hasil Belajar IPAS Kelas IV SDN Rejosari 01. *Inovasi Sekolah Dasar: Jurnal Kajian Pengembangan Pendidikan*, 11(1), 201–210. <https://doi.org/10.36706/jisd.v11i1.27>
- Novia, L., Wardani, H. K., & Nasim, S. M. (2024). Developing Web-Based Media for Teaching Writing through Wordwall. *Journal on Education*, 06(03), 16344–16358. <https://doi.org/10.31004/joe.v6i3.5329>
- Oviliani, T. M., & Susanto, R. (2023). The effect of wordwall educational game-based learning media on interest in learning natural sciences. *Education and Social Sciences Review*, 4(1), 27–33. <https://doi.org/10.29210/07essr322200>
- Prayunisa, F., & Mahariyanti, E. (2022). Analisa Kesulitan Siswa Sma Kelas X Dalam Pembelajaran Kimia Pada Pendekatan Contextual Teaching And Learning Berbasis Two Tier Multiple Choice Instrument. *Jurnal Ilmiah Global Education*, 3(1), 24–30.

- <https://doi.org/10.55681/jige.v3i1.167>
- Putri Supriadi, S. R. R., Haedi, S. U., & Chusni, M. M. (2022). Inovasi pembelajaran berbasis teknologi Artificial Intelligence dalam Pendidikan di era industry 4.0 dan society 5.0. *Jurnal Penelitian Sains Dan Pendidikan (JPSP)*, 2(2), 192–198. <https://doi.org/10.23971/jpsp.v2i2.4036>
- Ruhsoh Triyani. (2023). Penggunaan Game Interaktif Berbasis Wordwall sebagai Media Pembelajaran Matematika pada Siswa SMP. *Intellectual Mathematics Education (IME)*, 1(1), 40–49. <https://doi.org/10.59108/ime.v1i1.24>
- Saddad, R. B. M., Vera Risti Desvani, Indriana Dwi Saputri, & Lutfha Nugraheni. (2025). Penguatan Pendidikan Karakter melalui Cerita Rakyat Berbasis Media Flibook untuk Siswa Sekolah Dasar. *Morfologi : Jurnal Ilmu Pendidikan, Bahasa, Sastra Dan Budaya*, 3(4), 203–212. <https://doi.org/10.61132/morfologi.v3i4.1886>
- Sarah, M. M., Munawaroh, N., & Usman, A. T. (2023). Inovasi Media Pembelajaran Bahasa Arab dengan Aplikasi Quizizz di Era New Normal (Penelitian Pengembangan Aplikasi di Kelas XI MAN 1 Garut). *Jurnal Wahana Pendidikan*, 10(1), 117–136. <https://doi.org/10.25157/jwp.v10i1.8886>
- Sari, R. D., Murtafiah, W., & Hartanto, H. Y. Y. (2024). Penerapan Model Problem Based Learning Berbantuan Wordwall Untuk Meningkatkan Hasil Belajar Peserta Didik. *SIGMA*, 10(1), 8. <https://doi.org/10.53712/sigma.v10i1.2330>
- Singh, A., & Manjaly, J. A. (2022). Using Curiosity to Improve Learning Outcomes in Schools. *SAGE Open*, 12(1), 1–15. <https://doi.org/10.1177/21582440211069392>
- Sofiyani, S., Aksa, F. I., & Saiman, S. (2019). An analysis climate change of the curriculum in Indonesia. *Journal of Physics: Conference Series*, 1321(2). <https://doi.org/10.1088/1742-6596/1321/2/022121>
- Sugiyono. (2014). *Metode Penelitian Kuantitatif, Kualitatif, dan R & D* (Cet-20). Alfabeta.
- Tirtadewi, N. K. A., Agustiana, I. G. A. T., & Ujianti, P. R. (2022). Media Pembelajaran Interaktif Mandiri melalui Aplikasi Quizizz pada Materi Pernapasan pada Manusia dan Hewan. *Mimbar Pendidikan Indonesia*, 2(3), 324–335. <https://doi.org/10.23887/mpi.v2i3.50972>
- Twycross, A. (2004). Research design: qualitative, quantitative and mixed methods approaches. *Nurse Researcher*, 12(1), 82–83. <https://doi.org/10.7748/nr.12.1.82.s2>
- Wati, E. D. S., Fiqry, R., Nurgufriani, A., Yulianci, S., & Hakim, A. R. (2025). Efektivitas Media Pembelajaran Interaktif Berbasis Quizizz dalam Meningkatkan Minat Belajar Siswa Kelas V pada Materi Hidup dan Bertumbuh. *JagoMIPA: Jurnal Pendidikan Matematika Dan IPA*, 5(2), 585–593. <https://doi.org/10.53299/jagomipa.v5i2.1687>
- Yani, A. (2024). Peran Artificial Intelligence sebagai Salah Satu Faktor dalam Menentukan Kualitas Mahasiswa di Era Society 5.0. *Journal of Education Research*, 5(2), 1089–1096. <https://doi.org/10.37985/jer.v5i2.963>
- Zhao, F. (2019). Using Quizizz to Integrate Fun Multiplayer Activity in the Accounting Classroom. *International Journal of Higher Education*, 8(1), 37–43. <https://doi.org/10.5430/ijhe.v8n1p37>