

Analysis of the Use of Interactive Quizzes in Elementary Schools

Submitted:
May 19, 2025

Accepted:
July 15, 2025

Published:
July 31, 2025

Retno Wulandari ¹, Farida Nurlaila Zunaidah ²,
Tutut Indah Sulistiyowati ³

retnoowlndr@gmail.com, farida@unpkdr.ac.id,
tututindah.team@gmail.com

(Elementary School Teacher Education, Faculty of Teacher
Training and Education, Universitas Nusantara PGRI Kediri) ^{1,2,3}

Abstract: This study aims to analyze the use of interactive quizzes in the learning process in elementary schools. The approach used was descriptive qualitative. The research stages included planning, conducting observations, interviews with teachers and students, distributing needs questionnaires, and reviewing literature from online journals during the 2020–2024 period. Data collection techniques included direct classroom observation, structured interviews, questionnaires, and literature review. The data obtained showed that interactive quizzes such as Bamboozle, Wordwall, and Quizizz have been used in learning, particularly in Indonesian and science subjects. The quizzes were presented in both group and individual formats, with an attractive display that stimulated active student engagement. Teachers stated that interactive quizzes facilitated the delivery of material and improved student understanding. Meanwhile, students felt more enthusiastic and less bored during the learning process. The results of observations and interviews showed that average student grades increased, with scores ranging from 75–95. This finding is supported by literature studies that confirm that interactive media has a positive impact on motivation and learning outcomes. In conclusion, the use of interactive quizzes is an effective and enjoyable learning strategy that can improve the quality of learning in elementary schools.

Keywords: Interactive quiz, Learning, Elementary school

PRELIMINARY

In the modern era, technological advances are developing rapidly and influencing various aspects of life, including education. Technology plays a crucial role in advancing education to become more dynamic and interactive. One impact is on learning media. The emergence of various new media enables more engaging and varied learning methods. Students can now learn through simulations, educational videos, and interactive games, rather than just textbooks and blackboards. According to Rasyid Karo-Karo et al. (2018), with media, teachers can deliver lesson material in a more engaging and easily understood way, thereby making the teaching and learning process more effective and efficient.

As facilitators of modern learning, teachers are required to be technology-savvy. Innovation and creativity in designing engaging and interactive learning media are necessary for effective learning activities. This aligns with the opinion of Wicaksono (2016), who stated that learning media plays a crucial role in helping students understand material quickly and thoroughly. Therefore, teachers need learning media that is easy to create and use to make the teaching and learning process more effective. Maximizing technology utilization can be a solution to facilitate teachers in creating and implementing appropriate learning media.

One use of technology in the development of learning media is the creation of interactive media. According to Rahma & Nurhayati (2021), interactive media is carefully designed to present information and enable students to actively interact with it. Interactive media can provide an engaging and interactive learning experience for students, helping them understand the material more easily and enjoyably (Husna et al., 2022). The use of interactive media allows students to have an in-depth and memorable learning experience, making them more engaged and enthusiastic in participating in the teaching and learning process (Rahma & Nurhayati, 2021). According to Meryansumayeka et al. (2018), interactive learning media that can be utilized and developed in learning include Quizziz, Kahoot, Bamboozle, and Wordwall, among many others. These media are free and paid applications or websites provided to assist teachers in the learning process. These applications or websites serve as a platform for teachers to create interactive media in the form of quizzes that can later assist teachers in improving student learning outcomes. In line with the opinion of Dimas Virgiawan et al., (2018), interactive quizzes are an innovative solution to enrich students' insights and knowledge. Unlike traditional lecture methods, interactive quizzes present lesson material in the form of engaging and interactive questions or problems. This not only helps students understand the material better but also stimulates their curiosity and motivation to learn.

Through observations, researchers discovered that interactive quizzes have been widely implemented in classrooms at SDN Burengan 4. Students are very enthusiastic when teachers use interactive quizzes in their lessons. The attractive presentation and enjoyable learning create a lasting impression on students. Technologically literate teachers are a plus point here. Teachers can easily utilize interactive quiz websites or applications, thus encountering no challenges in creating quizzes. In teaching several

subjects, teachers frequently use interactive quizzes as an alternative. Interactive quizzes serve as a tool for evaluating learning outcomes, filling classroom gaps, and providing games. The use of interactive quizzes has demonstrated positive results. When used as an evaluation tool, students' scores average above or equal to the minimum competency criteria (KKM), with a range of 75-95.

Interviews revealed that most students enjoy using interactive quizzes as a learning evaluation tool. They are enthusiastic and enthusiastic about completing interactive quizzes, which significantly impacts their results. The use of interactive quizzes to fill classroom gaps has also received positive feedback. This is because interactive quizzes can be completed individually and in groups. This further increases student enthusiasm, fostering strong communication and collaboration through interactive quizzes. The use of interactive quizzes as games has also received positive feedback. For students, these games provide a new experience, allowing them to experience the thrill of learning while playing. Furthermore, interactive quizzes provide new insights into current and evolving technologies.

These research findings are supported by previous research. Indra Sukma et al. (2022) found that classes using interactive media based on Wordwall Quiz demonstrated better learning outcomes than classes that did not. This was evidenced by the high level of student interest and engagement in the experimental class. They were more confident in expressing their opinions, both in front of the class and during group discussions. Interaction between students also increased, resulting in improved understanding of the material, positively impacting learning outcomes. On the other hand, the control class that did not use the Wordwall Quiz showed a lower level of participation. Students tended to be passive and less confident in expressing their opinions. In conclusion, the use of interactive media based on the Wordwall Quiz proved effective in improving science learning outcomes in fourth-grade students at SDN Pasir Putih 03.

Based on observations at SDN Burengan 4, interactive quizzes have shown significant potential in improving their learning outcomes. However, further research is needed to empirically test the effect of interactive quizzes on student learning outcomes. This study aims to determine which interactive quizzes are frequently used in elementary school learning. This study analyzes the use of interactive quizzes in elementary schools, sourced from online journal articles accessed through Google Scholar between 2020 and

2024. Therefore, this research is expected to contribute to the development of more effective and engaging learning practices for students.

METHOD

This study uses a qualitative research approach, meaning the data is collected in the form of descriptions, both written and oral, from the people being observed. The resulting data is not in the form of numbers, but rather words, sentences, or images. The research stages include planning, conducting observations, interviews with teachers and students, distributing needs questionnaires, and literature studies from online journals in the 2020–2024 period. This study uses a descriptive approach, meaning the data is analyzed by describing and explaining what is found, without intending to draw general conclusions or generalizations. The data sources in this study were students in grades 1–6 and their class teachers. Data collection techniques in this study include observation, interviews, and literature studies. The data analysis technique in this study is the data analysis technique according to Miles and Huberman, namely, stating that activities in qualitative data analysis are carried out interactively and continuously until complete, so that the data is saturated. Activities in data analysis, namely data reduction, data display, and conclusion drawing/verification Sugiyono, (2010).

Tabel 1. Kisi-kisi pedoman observasi

No	Data	Indicators
1	Implementation of Learning with Interactive Quizzes Facilities and Infrastructure	Learning planning process with interactive quizzes
		Learning implementation with interactive quizzes
		Learning outcomes with interactive quizzes
2	Data	Available facilities and infrastructure such as laptops/computers, internet, LCD, projectors, sound systems

The observation grid functions as a guide in conducting observations in the classroom to find out the implementation and facilities and infrastructure used in learning with interactive quizzes.

Table 2. Outline of interview guidelines with class teachers

No	Data	Indicators
1	Preparation for Learning Implementation with Interactive Quizzes	Mapping the use and types of interactive quizzes
		Design for creating interactive quizzes
2	Implementation of Learning with Interactive Quizzes	Interactive quiz implementation system
3	Impact of Interactive Quizzes on Learning	Impact of using interactive quizzes on students
4	Reasons for Using Interactive Quizzes	Teachers' reasons for using interactive quizzes

The teacher interview grid serves as a guide in conducting interviews with teachers to find out the preparation, implementation, impact, and reasons for using interactive quizzes in learning.

Table 3. Outline of interview guidelines with students

No	Data	Indicators
1	Preparation for Learning Implementation with Interactive Quizzes	Mapping the use and types of interactive quizzes
		Design for creating interactive quizzes
2	Implementation of Learning with Interactive Quizzes	Interactive quiz implementation system
3	Impact of Interactive Quizzes on Learning	Impact of using interactive quizzes on students

The student interview grid serves as a guide in conducting interviews with students to find out the preparation, implementation, and impact of using interactive quizzes in learning.

Table 4. Teacher needs analysis questionnaire

No.	Aspects You Want to Know	Questions	Answer Options		
			Yes	No	Another Answers
1.	Potential Factors Supporting the Use of Interactive Quizzes	The average student learning outcomes in each subject have not been achieved optimally.			
2.	Use and Development of Interactive Quizzes	Teachers are not yet proficient in using the internet.			
3.	Need for the Use of Interactive Quizzes	Teachers are not yet familiar with interactive quizzes.			

Table 5. Student needs analysis questionnaire

No.	Questions	Answer
1	Have you ever taken a quiz?	
2	If so, what kind of quizzes have you taken?	
3	Have your teachers ever used interactive quizzes like Quizziz, Kahoot, Bamboozle, or wordwalls during teaching?	
4	Do your teachers use interactive quizzes in all subjects?	
5	Are you enthusiastic about taking interactive quizzes?	
6	Do you experience any difficulties when taking interactive quizzes?	
7	Do you agree with the use of interactive quizzes in learning?	
8	Do you agree that learning outcomes with interactive quizzes are much better?	
9	Are there any interactive quizzes that you enjoy?	

RESULTS

Based on data obtained through observation, interviews, literature studies, the following information was obtained:

Table 6. Observation results

No	Observation Aspects	Observation Results
Learning planning process with interactive quizzes		
1.	Use and types of interactive quizzes in learning	Using an interactive quiz like Bamboozle.
2.	Design for creating interactive quizzes	Created via the website, it uses a random-question quiz format. Students select the question they want and then provide their answer.
Implementation of learning with interactive quizzes		
1.	Forms of implementation of interactive quizzes in learning	On a projector screen, students are divided into groups. A representative from each group rolls the dice; the highest score goes first. Each correct answer automatically earns a point.
2.	Student responses during learning	Enthusiastic, passionate, and active.
Learning outcomes with interactive quizzes		
1.	Results obtained by students after learning	Understanding the material, and additional value.
Facilities and infrastructure		
1.	Use of facilities and infrastructure	LCD, projector screen, laptop, marker, whiteboard, dice

Table 7. Results of interviews with class teachers

No	Questions	Interview Results
1.	Have you ever used interactive quizzes in your learning?	I have used interactive quizzes in my teaching. My experience implementing interactive quizzes in the learning process has been very interesting.
2.	What types of interactive quizzes have you used?	I've tried various platforms, but Wordwall and Quizizz are my favorites. I often rely on Wordwall, especially for topics that students find challenging.
3.	What types of interactive quizzes have you used?	I often use multiple-choice, matching, and short-answer quizzes on Wordwall. Topics like history, science, and Indonesian are particularly well-suited to this method.
4.	In what subjects have you used interactive quizzes?	This is usually done in science and Indonesian subjects, as I believe these subjects are well-suited to interactive quizzes.
5.	How have you implemented these interactive quizzes?	I usually implement it in class and from home. In class, students usually work in groups due to limited devices. At home, I use an individual system. It's also quite easy to use; students simply need to share a link and start working.
6.	In your opinion, what impact have these interactive quizzes had?	The concept of quizzes, presented in a fun, game-like way, has proven effective in motivating students to learn. They appear more enthusiastic and focused when participating in lessons interspersed with interactive quizzes. The results are quite significant. With the interactive quizzes, students'

		understanding of the subject matter significantly improved. This was reflected in the improvement in their test scores. Besides enhancing understanding, interactive quizzes also made students more actively involved in the learning process. They not only listened to the teacher's explanation but also interacted directly with the material.
7.	What are your reasons for using interactive quizzes in your learning?	I chose these quizzes because they are my strong points. I haven't implemented the others yet because I'm still learning. Furthermore, I found these two quizzes easy to create and not too complicated to implement.

Table 8. Results of interviews with students

No	Questions	Interview Results
1.	Have you ever studied using interactive quizzes?	I remember playing an interactive quiz once.
2.	What types of interactive quizzes have you tried?	It was called Bamboozle, because I was bored with lectures at the time.
3.	What format did the interactive quizzes take?	It was like a multiple-choice game, but you choose a question, then answer it, and the teacher checks your answers.
4.	In what subjects were they used?	The game was used in Indonesian language classes.
5.	How did you feel after studying with the interactive quizzes?	The first time I played, I really enjoyed it because it was fun to solve problems while playing. Plus, it made studying less boring. Because I usually just listened and answered the questions, not using puzzles.

Table 9. Results of the teacher needs analysis questionnaire

No.	Aspects You Want to Know	Questions	Answer Options		
			Yes	No	Others Answer
1.	Potential Factors Supporting the Use of Interactive Quizzes	The average student learning outcomes in each subject have not been achieved optimally.		v	
2.	Use and Development of Interactive Quizzes Need for the Use of Interactive Quizzes	Teachers are not yet proficient in using the internet.		v	
		Teachers are not yet familiar with interactive quizzes.		v	
		Teachers cannot yet create interactive quizzes		v	
3.	Aspects You Want to Know	Teachers are not yet able to create interactive quizzes.	v		

Table 10. Results of the student needs analysis questionnaire

No.	Questions	Answer
1	Have you ever taken a quiz?	Ever
2	If so, what kind of quizzes have you taken?	Online quiz
3	Have your teachers ever used interactive quizzes like Quizziz, Kahoot, Bamboozle, or wordwalls during teaching?	Ever
4	Do your teachers use interactive quizzes in all subjects?	No
5	Are you enthusiastic about taking interactive quizzes?	Yes
6	Do you experience any difficulties when taking interactive quizzes?	No
7	Do you agree with the use of interactive quizzes in learning?	Yes
8	Do you agree that learning outcomes with interactive quizzes are much better?	Yes
9	Are there any interactive quizzes that you enjoy?	Yes

Table 11. Results of literature study via Google Scholar

No	Title	Author	Year	Result
1	Analysis of the Role of Kahoot-Based Interactive Learning Media on Student Learning Motivation in Online Learning	Karin Widya Ayuningtyas, Nadhirotuz Zulfah	2021	The use of Kahoot media in learning can raise students' interest in learning to understand learning because learning is designed through games. Students can be motivated because they feel happy, excited, and not bored while learning. If previously learning was carried out using conventional methods and did not involve technology, making students quickly feel bored because of monotonous, one-way learning and minimal interaction, then by using Kahoot media, students will be more motivated to follow the learning. This is in accordance with what was conveyed by the research subjects in the journal Increasing Student Learning Motivation with Interactive Kahoot Game-Based Learning Media, namely the results of student responses and responses after using Kahoot, including students wanting Kahoot to be given at every meeting, Kahoot can increase self-confidence, Kahoot increases interest and motivation in learning, in the process students are always enthusiastic in solving questions and want to always be in the top ranking, Kahoot evaluation feels more fun and not boring, and with Kahoot students find it easier to remember the lesson material that has been given. This is also supported by the results of research in other journals where

				the average student chooses to agree with the statement that Kahoot media is very fun, students are more enthusiastic about doing Kahoot quizzes than oral or written quizzes, students do not feel bored when learning using Kahoot media, and Huseyin Bicen & Senay Kocakayun also prove that Kahoot is a popular application as a learning medium.
2	Analysis of the use of wordwall applications in science learning for grade iv at sdn ciracas 05 pagi	Nur Aidah, Nurafni	2022	The discussion of the use of this media is that wordwall media is able to increase students' interest in learning. This can be seen from the aspect of student activity, the observation assessment criteria are measured through several indicators, including: (a) Student activity when participating in online teaching and learning activities (online) as evidenced by filling in attendance, (b) Student activity when collecting assignments on time, (c) Asking questions about material that is not yet understood. This situation is clearly different from the online learning process if the teacher only gives instructions to children to read. Or the teacher only tells children to re-note the material in the theme book. Based on this, it can be seen that after using wordwall media, children's interest and motivation increased, seen from the attitude of children who are willing to ask in the WhatsApp group if they have difficulty answering questions, children's activeness in filling in daily attendance and also seen student activity when collecting assignments. In line with Azizah, in her research which states that the use of wordwall media can improve students' mastery of vocabulary in subjects. In addition, Bachry's research also states that wordwall media can improve the ability of connected writing in deaf students. This research is limited to the materials used and the media used to process them. This research can serve as a benchmark and a source of knowledge regarding media that other educators can use in their teaching. Furthermore, this research can serve as a reference source for future researchers.

3	Analysis of learning outcomes in using quizizz in science learning	Ega Nurliana , Oktian Fajar Nugroho	2021	Using Quizizz provides students with a learning experience that impacts their learning outcomes. This is because the quizzes offer many engaging features, keeping students engaged in the learning process. Using Quizizz makes learning fun and interactive. Based on figure 1.1 above, there are differences in values located in Theme 1 subtheme 1 with an average value of 80, subtheme 2 with a value of 84 and subtheme 3 with a value of 83. Furthermore, for Theme 2, the average value for subtheme 1 is 87, subtheme 2 with a value of 85, subtheme 3 with a value of 89. For Theme 3 subtheme 1 with an average value of 99, subtheme 2 with a value of 76 and subtheme 3 with a value of 99. Furthermore, in Theme 4 subtheme 1 has an average value of 85, subtheme 2 with a value of 82 and subtheme 3 with a value of 94. After calculating the average per theme in science lessons, it can be seen in figure 1.2, it can be concluded that Theme 2 has a low value with a percentage of 24% with an average value of 87.1. Therefore, there is an increase in learning outcomes in science learning for grade V students.
---	--	---	------	--

DISCUSSION

According to observations, teachers have been using interactive quizzes like Bamboozle. These quizzes are created through a website and use a random-question quiz model. Students select their desired questions and then provide their answers. The quiz is displayed on a projector screen, and students are divided into groups. A group representative rolls the dice, and the highest score goes first. Each correct answer automatically earns a point. Students are enthusiastic, eager, and engaged, which contributes to increased understanding of the material. Furthermore, students also receive additional credit.

Interviews with classroom teachers indicate that they are already using interactive quizzes in their lessons. The types of interactive quizzes used include wordwalls and Quizizz. The quizzes vary in format, from matching to short answer questions. Topics

such as History, Science, and Indonesian are particularly well-suited to this method. These quizzes can be implemented both in class and at home. In class, students typically work in groups due to limited equipment. At home, the system is individual. The concept of quizzes, presented in a fun, game-like manner, has proven effective in motivating students to learn. They appeared more enthusiastic and focused during the learning process, interspersed with interactive quizzes. The results were quite significant. With the interactive quizzes, students' understanding of the subject matter significantly improved. This was reflected in the improvement in their test scores. In addition to improving understanding, interactive quizzes also made students more actively involved in the learning process. They not only listened to the teacher's explanation but also interacted directly with the material.

Interviews with students indicated that they had previously engaged in learning with the aid of interactive quizzes. The quizzes used were multiple-choice Bamboozle quizzes integrated into Indonesian language lessons. The implementation of interactive quizzes received a positive response, with students appearing to enjoy the learning process and reducing boredom. According to the teacher needs analysis questionnaire, interactive quizzes can be a solution for teachers in addressing low student understanding, inactivity, and enhancing the classroom atmosphere. This aligns with the opinion of Rahma & Nurhayati (2021), who stated that interactive media is carefully designed to present information and enable students to actively interact with it. Interactive media can provide an engaging and interactive learning experience for students, helping them understand the material more easily and enjoyably (Husna et al., 2022). This solution resulted in a maximum average student score in each subject, as teachers were already internet savvy, understood interactive quizzes, and could create and implement them in their lessons.

According to the student needs questionnaire, they had previously taken online quizzes. These types of online quizzes included Quizzz, Kahoot, Bamboozle, and Wordwall. The implementation results showed that students were very enthusiastic and experienced no difficulties during the process. This resulted in good learning outcomes, however, the use of interactive quizzes was not implemented in all subjects. Literature studies have shown that the use of interactive learning media such as Kahoot, Wordwall, and Quizzizz has been proven effective in increasing student interest and motivation in

learning. Kahoot, with its game format, makes students feel happy, enthusiastic, and not bored, thus increasing their motivation to understand the material and increasing their self-confidence. Wordwalls increase students' interest in learning through their active participation in online learning, timely submission of assignments, and questions about unclear material. Meanwhile, Quizizz provides a fun and interactive learning experience, positively impacting student learning outcomes. Overall, utilizing these media can overcome the boredom that often arises in conventional learning and make the learning process more engaging and effective.

CONCLUSION

Based on observations, teacher and student interviews, teacher and student needs analysis questionnaires, and literature studies, it can be concluded that the use of interactive quizzes such as Bamboozle, Wordwall, and Quizizz has a positive impact on learning. These quizzes can increase student enthusiasm, passion, and activeness, which ultimately impacts better understanding of the material and improved learning outcomes. Teachers have utilized various types of interactive quizzes in various formats, both in groups in class and individually at home, and students have responded positively and have not experienced difficulties in completing them. Interactive quizzes are believed to be an effective solution for teachers in overcoming the problems of low student understanding, lack of activity in class, and creating a more lively and enjoyable learning atmosphere. However, the implementation of interactive quizzes has not been applied evenly across all subjects.

REFERENCES

- Dimas Virgiawan, M., Marlini, S., & Studi Pendidikan Matematika, P. (2018). Pengembangan Kuis Interaktif Berbasis E-Learning Dengan Menggunakan Aplikasi Wondershare Quiz Creator Pada Mata Kuliah Belajar dan Pembelajaran Matematika. *Journal Pendidikan Matematika*, 12(1), 29–42. www.e-learning.unsri.ac.id
- Husna, L., Zunaidah, F. N., & Primasatya, N. (2022). Pengembangan Multimedia Interaktif Materi Ekosistem pada Kelas V Sekolah Dasar. *Jurnal Pendidikan Tambusai*, 6(1), 388–396.

- Indra Sukma, K., Handayani, T., & Muhammadiyah Hamka, U. (2022). Pengaruh Penggunaan Media Interaktif Berbasis Wordwall Quiz Terhadap Hasil Belajar IPA di sekolah dasar. *Jurnal Cakrawala Pendas*, 8(4). <https://doi.org/10.31949/jcp.v8i2.2767>
- Meryansumayeka, Virgiawan, M. D., & Marlini, S. (2018). *Pengaruh model pembelajaran terhadap hasil belajar matematika siswa*. Jurnal Pendidikan Matematika, 12(1), 5094-11943.
- Rahma, R., & Nurhayati, N. (2021). Pengembangan Media Interaktif Berbasis Game Edukasi Pada Pembelajaran Matematika. *Jemas: Jurnal Edukasi Matematika Dan Sains*, 2(1), 38–41.
- Wicaksono, L. (2016). Bahasa Dalam Komunikasi Pembelajaran Luhur Wicaksono. In *J P P Journal of Prospective Learning* (Vol. 1, Issue 2). <http://jurnal.untan.ac.id/index.php/lp3m>