

Kahoot Utilization! To Support Game-Based Learning

Nor Ainah Rusliana¹, Susanti Sufyadi^{2*}, Qomario³

Universitas Lambung Mangkurat, Indonesia

Email: norainahrusliana2312@gmail.com¹, sufyadi.susanti@ulm.ac.id^{2*},
qomario@ulm.ac.id³

*Correspondence

ABSTRACT

Keywords: game-based learning; the use of Kahoot; student learning motivation.

The use of Kahoot in today's digital era is increasingly important in supporting an interactive and fun learning process. As a gamification-based learning platform, Kahoot allows educators to create quizzes and challenges that are accessible online, increasing student engagement and facilitating active learning. So this research aims to explain the use of Kahoot! to support Game-Based Learning. The method used in this study uses the SLR (Systematic Literature Review) method using the Preferred Reporting Items for Systematic Reviews and Meta-analyses method commonly called PRISMA. The results of the 11 articles used in this review literature show that activeness in the learning process makes learning interactive and interesting and becomes one of the learning media options for teachers. Conclusion After studying the use of Kahoot in ICE, interest arose in the potential of this platform in supporting learning through gamification. Kahoot creates interactive learning experiences with real-time quizzes and challenges, which increases student engagement. Research shows that the platform makes the learning atmosphere competitive and fun, and provides live evaluation for teacher feedback. Thus, Kahoot can motivate students and improve academic outcomes.



Introduction

Education is an important part of human life that must provide various kinds of changes for humans. The implementation of education must always develop with the development of the times because education is a provision that must be possessed by humans to live an increasingly advanced and developing life. (Romadanti, 2023). Education is a means to develop the character and quality of human resources, especially in the context of the Industrial Revolution 4.0, as well as its role in supporting the progress of society and the state. (Pratama et al., 2020).

The era of the Industrial Revolution 4.0 has the main need, namely achieving mastery of integrated literacy and numeracy materials (Rafiqoh, 2020). In maximizing this mastery, it is necessary to make a breakthrough in the field of education, one of which is the

Independent Learning – Independent Campus program. MBKM (Merdeka Belajar Kampus Merdeka) is a program from the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) that aims to encourage and improve academic and non-academic student achievement in higher education (HATIMAH, 2023).

Independent Independent Study Certified Independent Campus is a classroom learning that is specially designed and made based on real challenges faced by partners/industries (Director General of Higher Education of the Ministry of Education and Culture, 2020). Certified Independent Study aims to provide opportunities for students to learn and develop themselves through activities outside of the classroom, but still be recognized as part of the course. Therefore, the independent campus collaborates with partners who want to participate, one of the partner institutions that collaborate is the Indonesia Cyber Education (ICE) Institute.

Indonesia Cyber Education (ICE)-The Institute was inaugurated by the Director General of Higher Education, Research, and Technology on July 28, 2021. ICE-Institute was established to become a digital marketplace for quality bold courses, accredited by the Ministry of Education and Culture. ICE-Institute aims to facilitate the provision of quality education while ensuring the quality of online (online) or online (distance) learning services. (Fitri et al., 2021). During lectures at ICE-Institute, everything is done online with independent learning with a certain time limit (Speed Test). The speed test method is a test whose work has a certain time limit, in this case like the Kahoot application! Whose work has a duration of time in working on each question?

Therefore, this writing aims to explain the use of Kahoot! as a game-based learning to support the speed test method. The benefit of this writing is as a requirement for undergraduate graduation in Educational Technology and a reference for further understanding of the use of Kahoot! in learning.

The research has been conducted by (Sakdah et al., 2022) with the title "Implementation of Kahoot as a Game-Based Learning Media on Learning Outcomes in Facing the Industrial Revolution Era 4.0". The results of the study showed that Kahoot media had an effect on the learning outcomes of grade V students in the Ecosystem material at the Permata Cendekia Integrated Islamic Elementary School, Simalungun Regency. Research has been conducted by Nasikhah et al., 2021 with the title "The Effectiveness of the Speed Test Method Using Kahoot Media! In three-dimensional learning". The results showed that there was a significant average difference between the control class and the experimental class, the average final test of the experimental class was lower than that of the control class, based on the questionnaire that had been distributed, the majority of students did not approve of the effectiveness of the Kahoot application! as an interactive quiz medium. Then in the research of (Anggraeni & Elan Maulani, 2023) with the title "The Utilization of the Kahoot Application! As a Digital Game-Based Learning in Fiqh Subject at SMP Negeri 6 Singosari Malang". The results showed that the use of the pre-test and post-test group learning models showed a difference between the control class and the experiment so a significant result was obtained, which was 0.000. The analysis shows

that Kahoot! has a varied impact in the context of learning, with some studies showing positive effectiveness, while others show limitations in students' perception of the app.

Method

The research method used in this literature review uses the SLR (Systematic Literature Review) method using the Preferred Reporting Items for Systematic Reviews and Meta-analyses method commonly called PRISMA. To get maximum results in writing this literature is based on a Research Question (RQ). The purpose of this Research Question is to focus more on the review of the literature and can make it easier for the author to find related data.

Research Question

Table 1
Research Question

It	Question	Analyzed in search
1	What are the materials applied by previous research related to the use of Kahoot application studies? In the learning process?	At this stage, the author analyzes the articles about what materials have been applied to learning using Kahoot! Application.
2	What are the types of research used by previous researchers on Kahoot?	At this stage, the author analyzes articles about what types of research are often used using Kahoot!
3	How effective is Kahoot! in the learning process in high school?	At this stage, the author analyzes the effectiveness of Kahoot! In the learning process through the articles of the past.

In the selection of articles used in literature writing, inclusion and exclusion criteria are needed to select the main research. The results of the data search with these criteria will later be used by the author to review the article.

Inclusion and Exclusion Criteria

Table 2
Inclusion and Exclusion Criteria

Inclusion Criteria	<ol style="list-style-type: none"> 1) Research articles published in 2019-2024, 2) Research topics include Kahoot! as a game-based learning, 3) The research subjects in SD. Junior High School, High School, and Higher Education, 4) The research article method is in the form of experiments, literature reviews, qualitative and quantitative descriptive, and workshops.
Exclusion Criteria	<ol style="list-style-type: none"> 1) Research articles that cannot be accessed in full, 2) Literature in the form of a thesis/scientific journal.

After the inclusion and exclusion criteria are determined, then the selection of articles to be reviewed. Here's a chart of the article selection process.

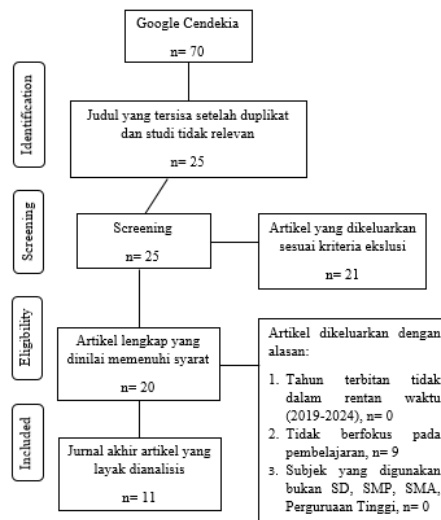


Diagram PRISMA: Tahapan Systematic Literature Review

Data Analysis Techniques

The data analysis technique used is the narrative method. The narrative method aims to describe the effectiveness of using Kahoot! as game-based learning in the learning process. The principle of learning effectiveness that is a reference refers to the opinions of (Nasution & Setiawan, 2024), which states that the effectiveness of learning media is not only measured by learning outcomes but must also pay attention to aspects of student motivation and involvement in the learning process. They argue that media that can increase student interaction and participation, such as Kahoot, are very effective in supporting the learning process.

Results and Discussion

Results of an Independent Study at the ICE Institute on Microcredential on Digital Evaluation

Universitas Pendidikan Indonesia joined the Association of Indonesian Educational Technology Study Programs (APS-TPI) to create courses on the ICE Institute program. There is one of the classes of this course developed by ICE Institute with the University of Education Indonesia, namely the Digital Evaluation class, this class will discuss the basics of evaluation, the role of assessment in learning, and evaluation tools and their types. This lecture consists of 8 (eight) meetings, students will be invited to learn several topics discussed and also given an assignment to measure how far their understanding of this course is.

The following is a table of subjects along with the assignments given in this digital evaluation class.

Table 3
Subject Matter and Assignment

It	Topics of Discussion	Indicator	Assignment	Value
1	Dasar Kahoot!	- Evaluation - Valuation - Measurement - Evaluation, assessment, and measurement relationships	Multiple choice questions	10/10
2	Learn digital tools	- Digital tool learning - The phenomenon of using digital learning tools	Multiple choice questions	10/10
3	Learn the types of evaluation tools	Know what it is - Kahoot - Wordwall - Google form	Multiple choice questions	10/10
4	Kahoot development steps	- Able to identify the basic elements of Kahoot in learning - Able to explain how Kahoot works - Be able to identify the menus in Kahoot	Multiple choice questions	10/10
5	Final Exam	- Able to make learning product evaluations - Final assignments are collected no later than one week before the end of lectures.	Practice creating quizzes using Kahoot and Assignments are collected in the form of links	10/10

The author uses the Learning Management System (LMS) at ICE Institute which includes material features, discussions, assignments, tests, and summaries to increase effectiveness in learning. Through the experience of studying at the ICE Institute, the author's experience not only applies the theoretical concepts that have been learned in online classes but is also directly involved in designing and implementing a solution to educational technology constraints in the learning environment. The following is a report of the author's activities when participating in the Digital Evaluation class.

Kahoot Utilization! to support Game-Based Learning

Based on the article used in this review literature, is an article that was developed using Google Scholar. The search for research literature relevant to this research topic was carried out with the keyword: "Kahoot, game-based learning". The literature search will be carried out in May 2024. The articles were then sorted according to the research topic so that 11 research articles were collected that were considered to represent the entire research

article on the use of Kahoot! to support game-based learning. The articles used are 11 articles published in the period (2019-2024). The table presents the results of the analysis of 11 articles.

Table 4
Analysis Results from 11 Articles

No	Heading	Writer	Material	Type of Research	Results of Literature Analysis
1	Implementati on of Kahoot as a Game- Based Learning Media on Learning Outcomes in Facing the Industrial Revolution 4.0 Era	(Maya Siti Sakdah et al., 2022)	Science with ecosystem materials	Experimental research with the quasi- experimental method	The results showed that Kahoot media was effective in student learning outcomes
2	The effectiveness of the speed test method using Kahoot! On Three- Dimensional Learning	(Malikatun Nasikhah et al., 2021)	Mathematic s in three- dimensiona l matter	Quantitative approach with the type of Pseudo- experiment	The results show that the lack of effectiveness of the Kahoot! as an interactive quiz medium
3	Utilization of the Kahoot! As a Digital Game Based Learning in Fiqh Subject at SMP NEGERI 6 SINGOSARI MALANG	(Rahmad Yoga Nugroho et al., 2022)	Fiqh	Quantitative approach with the type of Pseudo- experiment	The results show that the use of Kahoot applications as digital game- based learning influences student learning outcomes
4	Game-Based Kahoot- Assisted Learning! In Encouraging Student Activity in Mathematics Learning	(Erina Hannawita Br Sembiring et al., 2023)	Matematika	Descriptive qualitative research	The results show that the application of the game-based learning method assisted by Kahoot! Proven to encourage student activity in the learning process

5	Increasing Student Learning Motivation with Interactive Learning Media for Hypermedia-Based Kahoot Games	(Dwi Hartanti, 2019)	-	Quantitative and qualitative descriptive research	The results show that the Kahoot application can increase students' interest and motivation in learning.
6	The Use of Kahoot Application as Digital Game-Based Learning in the Subject of Al-Qur'an Hadith at Madrasah Aliyah Nu Maarif Assaadah Bungah Gresik	(Izza Safitri., 2024)	Al-Qur'an Hadits	Qualitative approach	The results showed that the use of Kahoot applications made learning interactive and engaging.
7	The Utilization of Educational Game-Based Learning Media Kahoot! On Physics Learning	(Rafika Andari, 2020)	Physics with magnetic force matter	Research and development (R&D)	The results show that the use of educational game-based learning media Kahoot! 34.6% better compared to using PowerPoint media
8	The Effectiveness of Using Kahoot! to Improve Student Learning Outcomes	(Irwan Irwan et al., 2019)	-	Quantitative approach with quasi-experimental method	The results show that Kahoot! Proven to be effective in improving learning outcomes
9	The Effect of Game-Based Learning-Based Kahoot Learning Media on Interest and Student	(Rina Puspitasari et al., 2022)	Chemistry with periodic system materials	Quantitative approach with quasi-experimental method	The results showed that there was an influence of game-based Kahoot learning media and learning

	Learning Outcomes				interests and outcomes learner learning
10	The Use of Kahoot Media as a Formative Assessment Instrument in Fiqh Learning at MA AL-BURHAN GEDAWAN G	(Qonita Sholihah, 2022)	Fiqh with worship materials	Descriptive qualitative approach	The results show that the use of Kahoot media is very effective and also affects student learning outcomes.
11	Use of the Kahoot! As Digital Game-Based Learning in Islamic Cultural History (SKI) Subject at Madrasah Aliyah Pembangunan UIN Jakarta	(Sahara Adjie Samudera, 2020)	History of Islamic Culture with the Material Strategy and Substance of Khulafar-Rasyidin da'wah	Descriptive qualitative research	The results show that the use of Kahoot! as a game-based learning suitable for use and can be an option for teachers to vary their learning scenarios.

The table above contains information about previous research that uses quantitative approach research methods with quasi-experimental methods, descriptive qualitative, R&D, qualitative, quantitative and qualitative descriptive, quantitative and qualitative approaches, quantitative approach with pseudo-experimental types, and experimental research with quasi-experimental methods in the subjects of Science, Mathematics, Physics, Chemistry, Fiqih, Al-Qur'an Hadith and Islamic Cultural History. In the table above, we will also inform you about some of the effectiveness of Kahoot! to support game-based learning, learning outcomes, motivation, interest in learning, activeness in the learning process, making learning interactive and interesting, as well as one of the learning media options for teachers.

In the table above, it can be seen that the subjects that are often used in the use of Kahoot! Namely mathematics and fiqh. This shows that both subjects have a high potential to increase student engagement and facilitate a more interactive learning process.

In this study, the types of research methods used are quantitative approaches with quasi-experimental methods, descriptive qualitative, R&D, qualitative, quantitative, and qualitative descriptive, quantitative and qualitative approaches, quantitative approaches with pseudo-experimental types, and experimental research with quasi-experimental methods. The research method used in the research was reviewed in the literature review. Researchers use a lot of Descriptive Qualitative research methods. This method was chosen

because it can provide a deep understanding of the phenomenon being researched, as well as allow the author to explore the subjective perspectives and experiences of the respondents. With a qualitative descriptive approach, the author can explore various aspects related to student interaction in learning, as well as identify factors that affect student engagement in the subject studied. This research focuses on how the application of educational games can improve the learning process among students.

Educational games are known as an effective tool to create a fun and interactive learning atmosphere. According to (Rafika, 2021), educational games not only entertain but also include educational elements that can support the understanding of important concepts. Echols (1996) stated that games are fun activities that are done voluntarily, which provides additional fun and motivation in learning.

In the context of the 21st century, where technology is increasingly dominant, there is an urgent need to develop educational games that are by the demands of the times. This is in line with the increasing interest of educators in technology-based products that can be integrated into the learning process. After reviewing the subjects and research methods, the effectiveness of Kahoot! Supports game-based learning. Take a look at the following picture.



From the image above, it can be concluded that Kahoot! can be used effectively in the learning process. With the implementation of Kahoot! It is proven to increase learning outcomes, motivation, interest in learning, and activeness in the learning process, make learning interactive and interesting, and one of the learning media options for teachers. By using these platforms, students can actively engage in learning activities, which in turn has a positive impact on their academic performance. This is in line with the phrase that game-based learning can create a more interesting and interactive learning experience, thus encouraging students to participate more actively in the learning process. As in (Aisyah, 2023) Research, game-based learning not only makes the learning atmosphere more fun but also increases student engagement. In this way, students are more motivated to learn and actively participate in the learning process.

Indonesia Cyber Education Institute (ICE-I) is an educational institution that focuses on the development and provision of cyber education in Indonesia. With accreditation from

the Ministry of Education and Culture, ICE-I demonstrates its commitment to providing quality education. The institution offers a wide range of programs, including online courses in various fields, training for teachers in educational technology, interactive learning content development, as well as an e-learning platform that is easily accessible to all groups.

During his studies at ICE Institute, he took the Digital Evaluation course. Learning at ICE Institute takes place online, and independently. Students are only facilitated with material that is presented through short-duration video media, power points, etc. In addition, at ICE Institute there is a platform for discussion, multiple choice, and a special assignment platform where other students can assess and give feedback on the assignments that have been done, at the end of the lecture there is a final project where the task is the practice of making questions in the Kahoot media! that can be accessed by other students. In the digital evaluation, there is material that discusses Kahoot, the material discusses how to make a Kahoot, the features of Kahoot, etc. With that, it makes the writer interested to know more about how to use Kahoot! In game-based learning. The use of Kahoot! As a game-based learning tool, it can create a more dynamic and fun learning atmosphere, which in turn can increase student motivation and learning outcomes.

By utilizing technology like Kahoot!, ICE-I shows that education doesn't have to be monotonous and can be done in innovative ways. As an interactive platform, Kahoot! Allowing teachers to hold engaging quizzes, support collaboration between students, and facilitate instant feedback. This is crucial in creating an active learning environment, where students feel engaged and participate directly.

Overall, learning at ICE-I, especially through digital evaluation courses, provides not only knowledge of theory but also practical skills in the use of digital tools to support the learning process. Through this approach, ICE-I contributes to the development of human resources who are ready to face the challenges of education in the digital era. By continuing to explore and apply technologies like Kahoot!, these institutions can help demonstrate the great potential of game-based learning in improving the quality of education.

The writing of this report is based on the article used in this review literature is an article obtained using Google Scholar. The search for research literature relevant to this research topic was carried out with the keyword: "Kahoot, game-based learning". In the analysis of the use of Kahoot! as a learning tool, it can be seen that the subjects that most often use this platform are Mathematics and Fiqh. This reflects the high potential of both subjects in increasing student engagement. Mathematics, which is often considered challenging by students, can be presented in a more engaging way through game elements, which can make it easier to understand complex concepts. On the other hand, Fiqih, which deals with values and norms, can also benefit from the interactive learning methods offered by Kahoot! Previous researchers tended to use the Descriptive Qualitative method, which allows researchers to delve into the phenomenon being studied and explore the subjective experiences of respondents. This approach is very useful in understanding how students interact in learning, as well as the factors that affect their engagement.

After reviewing the subjects and research methods, this study also leads to the evaluation of the effectiveness of Kahoot! in supporting game-based learning. The use of Kahoot! Can increase student engagement, which in turn can improve learning outcomes. By utilizing this tool, students not only learn in a more fun way but also participate more actively in the learning process, thus making their learning experience more meaningful and productive. Overall, the use of Kahoot! In education, it shows that educational games have great potential to change the way students learn and interact with subject matter. Further research is expected to explore more deeply the various aspects and benefits of using Kahoot! in various learning contexts.

Conclusion

ICE-I is committed to providing a comprehensive education by combining theoretical and practical learning. At ICE-I, students are not only taught academic concepts but also allowed to apply this knowledge in real situations through various practical activities. This approach allows students to develop practical skills that are in demand in the workforce, as well as deepen their understanding of the material studied. Through hands-on experience with the latest tools and technology, as well as collaboration on real-world projects, ICE-I ensures that learners are prepared to face professional challenges with confidence. Thus, ICE-I creates individuals who not only have theoretical knowledge, but also applicable skills that are relevant to the needs of today's industry.

ICE contributes significantly to the development of human resources through the application of gamification in education by utilizing interactive platforms such as Kahoot! With Kahoot, the learning process becomes more engaging and competitive, as learners can participate in quizzes, challenges, and game-based activities in real-time. This encourages higher engagement and makes learning an enjoyable experience. Additionally, the use of Kahoot also allows for hands-on evaluation, facilitating teachers to provide prompt and effective feedback. This helps improve students' understanding, skills, and motivation in achieving better learning outcomes.

After studying the use of Kahoot at ICE, there was interest in the potential of this platform to support learning through gamification. Kahoot offers a more interactive learning experience by utilizing game elements such as quizzes and challenges that can be followed in real-time. To understand more deeply about its positive impact, a literature study was conducted that examined the benefits of this platform in the context of education. The results of the study show that Kahoot is effective in increasing student engagement in the learning process because it presents a competitive but still fun learning atmosphere. In addition, Kahoot also provides direct evaluation, which allows teachers to provide feedback faster and support student understanding more deeply. Through this approach, students become more motivated and enthusiastic in participating in learning, thus having a positive impact on academic results and overall mastery of the material.

Bibliography

- Aisyah, A. (2023). *Analisis Penggunaan Literasi Digital Dalam Pembelajaran Bahasa Indonesia Pada Siswa Sdn 3 Sukarami Kabupaten Musi Banyuasin*. Universitas PGRI Palembang.
- Anggraeni, R., & Elan Maulani, I. (2023). Pengaruh Teknologi Informasi Terhadap Perkembangan Bisnis Modern. *Jurnal Sosial Teknologi*, 3(2), 94–98. <https://doi.org/10.59188/journalsostech.v3i2.635>
- Fitri, W., Octaria, M., Irvanaries, I., Suwanny, N., Sisilia, S., & Firnando, F. (2021). Tantangan dan Solusi terhadap Ketimpangan Akses Pendidikan dan Layanan Kesehatan yang Memadai di Tengah Pandemi Covid-19. *Era Hukum-Jurnal Ilmiah Ilmu Hukum*, 19(1).
- HATIMAH, K. (2023). *Implementasi Program Merdeka Belajar Kampus Merdeka (MBKM) dalam Meningkatkan Soft Skill dan Hard Skill Mahasiswa Teknologi Pendidikan Fakultas Ilmu Pendidikan Universitas Negeri Makassar*.
- Nasution, I. D. N., & Setiawan, H. R. (2024). Penerapan Media Flash Card dalam Peningkatan Penguasaan Kosakata Bahasa Arab Peserta Didik di Rumah Belajar Madani Yakesma. *Reslaj: Religion Education Social Laa Roiba Journal*, 6(9), 4386–4399.
- Pratama, L. D., Lestari, W., & Astutik, I. (2020). Efektifitas penggunaan media edutainment di tengah pandemi Covid-19. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 9(2), 413–423.
- Rafika, R. (2021). *Pengaruh penggunaan media game edukasi quizizz terhadap motivasi dan hasil belajar IPS siswa SMP Al-Rifa'ie*. Universitas Islam Negeri Maulana Malik Ibrahim.
- Rafiqoh, S. (2020). Arah kecenderungan dan isu dalam pembelajaran matematika sesuai pembelajaran abad 21 untuk menghadapi revolusi industri 4.0. *Jurnal MathEducation Nusantara*, 3(1), 58–73.
- Romadanti, L. (2023). Evolusi metode pembelajaran pendidikan agama islam. *GUAU: Jurnal Pendidikan Profesi Guru Agama Islam*, 3(5), 231–242.
- Sakdah, M. S., Prastowo, A., & Anas, N. (2022). Implementasi Kahoot Sebagai Media Pembelajaran Berbasis Game Based Learning Terhadap Hasil Belajar dalam Menghadapi Era Revolusi Industri 4.0. *Edukatif: Jurnal Ilmu Pendidikan*, 4(1), 487–497.