



## The Influence of Using Android-Based Educational Game Software on Software Modeling Learning for Grade VIII Students at SMPN 1 BPR Ranau Tengah

Richa Meyyolis<sup>1</sup>, Achmad Buchori<sup>2</sup>, Ade Ricky Rozzaky<sup>3</sup>, Wijayanto<sup>4</sup>.

PGRI University Semarang, Indonesia

E-mail: [meyricha82@gmail.com](mailto:meyricha82@gmail.com) \* [achmadbuchori@upgris.ac.id](mailto:achmadbuchori@upgris.ac.id) [zaqi@upgris.ac.id](mailto:zaqi@upgris.ac.id)  
[wijayanto@upgris.ac.id](mailto:wijayanto@upgris.ac.id)

Receive: 27/07/2025	Accepted: 01/08/2025	Published: 01/10/2025
---------------------	----------------------	-----------------------

### Abstract

*This study was motivated by the low interest and understanding of students toward Software Modelling lessons, particularly in Grade VIII at SMP Negeri 1 BPR Ranau Tengah. The identified issue is the lack of interactive teaching media that align with the characteristics of digital-generation students. The aim of this research is to the influence of using educational game-based learning media on Android (Kahoot) to enhance student engagement and comprehension of software modeling material. The study employs a descriptive qualitative approach with observation and interviews as data collection instruments. It was conducted at SMP Negeri 1 BPR Ranau Tengah during the even semester of the 2024/2025 academic year. The findings indicate that using Kahoot as a learning media significantly increases students enthusiasm and participation. Students become more active and competitive in understanding the material, and teachers find it easier to manage the classroom dynamically. It is recommended that teachers continue developing digital learning media relevant to technological advances and student's characteristics.*

**Keywords:** Learning Media, Kahoot, Software Modeling, Educational Games

### Abstrak

Penelitian ini dilatarbelakangi oleh rendahnya minat dan pemahaman siswa terhadap mata pelajaran Pemodelan Perangkat Lunak, khususnya di kelas VIII SMP Negeri 1 BPR Ranau Tengah. Masalah yang diidentifikasi adalah kurangnya media pembelajaran yang interaktif dan sesuai dengan karakteristik siswa generasi digital. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh penggunaan media pembelajaran berbasis game edukasi Android (Kahoot) dalam meningkatkan keterlibatan dan pemahaman siswa terhadap materi pemodelan perangkat lunak. Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan teknik observasi, wawancara, dan dokumentasi sebagai instrumen pengumpulan data. Penelitian dilaksanakan di SMP Negeri 1 BPR Ranau Tengah pada semester genap tahun ajaran 2024/2025. Hasil penelitian menunjukkan bahwa penggunaan Kahoot sebagai media pembelajaran mampu meningkatkan antusiasme dan partisipasi siswa secara signifikan. Siswa menjadi lebih aktif dan kompetitif dalam memahami materi, serta guru merasa terbantu dalam mengelola kelas secara lebih dinamis. Disarankan agar guru terus mengembangkan media pembelajaran digital yang relevan dengan perkembangan teknologi dan karakteristik siswa.

**Kata Kunci:** media pembelajaran, Kahoot, pemodelan perangkat lunak, game edukas



## **INTRODUCTION**

The development of digital technology in the era of the Industrial Revolution 4.0 has had a significant impact on various aspects of human life, including education. Technology is no longer merely a tool, but has become an integral part of the teaching and learning process. In the context of formal education, the integration of information and communication technology (ICT) has become a necessity to create a learning environment that is more adaptive to the characteristics of 21st-century students. Today's students are part of the digital native generation, a generation accustomed to the use of digital technology devices in their daily lives since birth. Therefore, conventional learning methods, which are one-way and monotonous, are starting to be perceived as less relevant and unable to fully capture students' learning interests.

Technical subjects like Software Modeling often present challenges for both teachers and students. The complex material, which requires logical and systematic thinking skills, and tends to be abstract, makes it difficult for students to grasp the concepts presented. As a result, student interest in learning declines, engagement in learning is low, and learning outcomes are suboptimal. This situation requires appropriate intervention in the form of the use of innovative learning media that can bridge the gap between complex teaching materials and students' varied learning styles.

Technology-based learning media is a potential alternative solution for improving the quality of learning. One interactive learning platform currently widely used by educators in various countries is Kahoot. Kahoot is an educational game-based quiz app accessible on Android devices and desktops. This app allows teachers to create interactive quizzes with engaging

visuals and a fun, competitive atmosphere for students. Through its features, Kahoot functions not only as an evaluation tool but also as a medium for delivering learning materials in an active and participatory manner.

Previous research has shown that the use of educational game-based learning media such as Kahoot has a positive impact on student learning outcomes. For example, research by Putra and Kurniawan (2021) revealed that students who learn using Kahoot have better memory retention compared to students who use conventional methods. Furthermore, Fitriani et al. (2020) stated that Kahoot media can increase student activeness in participating in learning and create a more conducive and enjoyable classroom atmosphere. However, these studies are generally limited to general subjects such as English or Science. There are not many studies specifically examining the effectiveness of Kahoot in learning Software Modeling at the junior high school level, especially in areas with limited access to digital education such as SMP Negeri 1 BPR Ranau Tengah.

Based on the results of initial observations conducted at SMP Negeri 1 BPR Ranau Tengah, it was found that eighth-grade students tended to experience difficulties in understanding the Software Modeling material delivered conventionally. Teachers acknowledged that lecture methods and assignments were not fully capable of building active student engagement. In conditions like this, a learning approach is needed that can increase students' intrinsic motivation and encourage them to actively participate in the learning process. The use of Kahoot as an interactive learning medium is expected to provide a different and enjoyable learning experience for students, so that

they can more easily understand and remember the material.

Theoretically, the use of interactive media in learning can be explained through the constructivist theory proposed by Piaget and Vygotsky. According to this theory, learning will be more meaningful when students are actively involved in the process of constructing their own knowledge. Media like Kahoot provide a space for students to explore, interact, and receive immediate feedback, thus encouraging the formation of new knowledge through enjoyable learning experiences. Furthermore, behaviorist theory is also relevant to explain how the competition and reward elements in Kahoot can reinforce positive stimulus-responses in learning.

From the explanation above, the main problem of this research can be formulated: how effective is the use of Kahoot-based learning media on student engagement and understanding in the Software Modeling subject in eighth grade at SMP Negeri 1 BPR Ranau Tengah? This question serves as the basis for further elaborating on appropriate learning strategies for implementation in the digital age, particularly in technical learning contexts that require a high level of logic.

This research aims to describe the implementation of the influence of Kahoot learning media in Software Modeling lessons and analyze its impact on student engagement and understanding. Another objective is to fill the research gap that has not yet explored the use of Kahoot in the context of technical subjects at the elementary level. This research is also expected to contribute to the development of technology-based learning strategies that are adaptive to the characteristics of students in rural areas.

The benefits of this research are divided into two aspects: theoretical and practical. Theoretically, this research enriches scientific studies in the field of educational technology, particularly regarding the implementation of digital media in competency-based learning. Practically, the results can serve as a reference for teachers, principals, and policymakers in designing interactive learning that is more effective, enjoyable, and tailored to student needs.

## RESEARCH METHODS

This study used a descriptive qualitative approach, aiming to deeply understand the implementation of Kahoot learning media in the learning process of the Software Modeling subject at SMP Negeri 1 BPR Ranau Tengah. This approach was chosen because it allowed researchers to explore teachers' perceptions, experiences, and responses to the use of Kahoot media in a natural and contextual manner (Moleong, 2019).

The research was conducted at SMP Negeri 1 BPR Ranau Tengah, South OKU Regency, South Sumatra Province. This location was chosen purposively, considering that the school had never systematically used Kahoot as a learning medium, but had a Software Modeling course in grade VIII. The research took place from February to April 2025, adjusting to the academic calendar and the readiness of teaching and learning activities.

### 1. Data Sources

The data sources in this study were primary data obtained from direct observations and in-depth interviews with teachers teaching Information Technology, specifically Software Modeling. In addition, secondary data was obtained from school documentation such as syllabi, lesson plans, and lesson notes.

### 2. Data Collection Techniques

Observations,  
Documentation

Interviews,

### 3. Data Analysis Techniques

Data were analyzed qualitatively using thematic analysis techniques. The analysis stages began with data reduction (filtering important information), presenting the data in narrative descriptions, and then drawing conclusions and verifying them. Data validity was maintained through source and technique triangulation, as well as member checking with sources to ensure the validity of the information (Sugiyono, 2019).

## RESULTS AND DISCUSSION

### Field Observation Results

Field observations were conducted during several learning sessions of Information and Communication Technology (ICT), specifically on Software Modeling, in the eighth grade of SMP Negeri 1 BPR Ranau Tengah. Observations focused on two learning situations: when the teacher used Kahoot as a learning medium and when learning was conducted conventionally without this interactive medium. The purpose of these observations was to identify direct learning dynamics, including student attitudes, teacher strategies, interactions during the learning process, and the general classroom atmosphere.

#### 1. Teacher Readiness and Strategies

Observations revealed that ICT teachers were not yet fully familiar with using Kahoot as a learning medium. This is understandable, given the limited training or outreach regarding digital learning media within the school. However, despite their unfamiliarity, teachers demonstrated a positive and enthusiastic attitude in trying out Kahoot. They made initial preparations by creating Kahoot accounts, developing

quiz questions based on Software Modeling material, and learning how to project the quiz live on the classroom screen.

The strategies used by teachers when using Kahoot differed from those used in conventional learning. Teachers divided the learning session into two parts: a brief introduction to the material, followed by an interactive quiz using Kahoot. Teachers also acted more as facilitators, assisting students during the quizzes, rather than acting as the sole resource person as in traditional learning.

#### 2. Student Attitudes and Responses

In general, students showed high enthusiasm when Kahoot was used in the learning process. Before the quiz began, students were already actively preparing their devices, accessing the Kahoot page, and scrambling to log in using the PIN code provided by the teacher. As the quiz progressed, the classroom atmosphere became more lively, with cheers and expressions of joy from students who answered correctly and quickly.

Students who had previously tended to be passive began to show greater engagement when using Kahoot. Some even displayed healthy competitiveness, striving to achieve the highest score. This contrasted with learning sessions without Kahoot, where only a few students actively asked questions or responded to the teacher's questions, while others appeared passive or disengaged.

However, some students also experienced difficulties participating in the quiz due to device or network issues. Some students did not have smartphones, requiring them to join small groups or simply watch the quiz without being able to participate live. The teacher recognized this and attempted to accommodate by allowing students to share devices.

### 3. Classroom Interaction and Atmosphere

The use of Kahoot significantly increased interaction between teachers and students. Teachers not only delivered the material but also provided immediate feedback when students answered correctly or incorrectly. Furthermore, students engaged in more discussions with their classmates about their chosen answers, despite limited time available. This created a more communicative and collaborative classroom atmosphere.

In contrast, in learning without Kahoot, interaction tended to be one-way. The teacher spent most of the time talking and explaining, while students took notes or listened. During these sessions, student interaction was limited, and the classroom atmosphere was quieter, even passive. Some students appeared unfocused, and some displayed bored expressions.

The following table illustrates a comparison of observation results between learning with and without Kahoot.

**Table 1** Comparison of Learning Observations With and Without Kahoot.

No	Observed Aspects	Learning to Use Kahoot	Learning Without Kahoot
1	Student enthusiasm	Very high, students are active and responsive	Low to moderate, only a few are active
2	The role of the teacher	Facilitator, guide, provide feedback	Information center, predominantly explaining
3	Student-teacher interaction	High, there is dialogue and spontaneous response	Low, one-way interaction
4	Interaction between students	Increased, a brief discussion occurred	Limited, rarely discussed
5	Class atmosphere	Dynamic, competitive, passionate	Passive, quiet, tends to be monotonous
6	Technical problems	There are, mainly device and network limitations.	Minimal, but less interactive atmosphere

### 4. Technical Issues

Although the use of Kahoot makes learning more engaging and interactive, observations noted several technical challenges. These included a limited number of student devices, not all students had compatible smartphones, and the school's unstable internet connection. This resulted in some students falling behind during the quizzes or being unable to participate at all.

Teachers attempted to address this by dividing students into small groups so they could work together to answer questions using a single device. However, this also reduced students' individual experience in accessing and answering questions independently.

### 5. Interim Conclusions from Observations

From field observations, it can be concluded that the use of Kahoot in Software Modeling learning has had a positive impact on student engagement and the overall classroom atmosphere. Despite technical challenges, the majority of students demonstrated a more active and motivated attitude when learning was conducted interactively using Kahoot. Teachers also began to develop more collaborative learning strategies, although further training and support are still needed for optimal implementation of digital learning.

### Interview Results with Teachers

To gain a more in-depth understanding of the use of digital learning media in the teaching and learning process, specifically the impact of Kahoot in the Information and Communication Technology (ICT) subject on Software Modeling, researchers conducted interviews with several teachers directly involved in learning activities at SMP Negeri 1 BPR Ranau Tengah. These interviews were conducted in a semi-structured manner, guided by open-ended questions

designed to explore teachers' perceptions, challenges faced, and expectations regarding the use of digital media to support the learning process.

The interviewees consisted of two ICT teachers classroom teacher who had used interactive media in their teaching. All three had different teaching backgrounds and experiences, providing diverse perspectives on digital media implementation in schools. Interviews were conducted in person in the school's staff room and lasted approximately 30 minutes for each teacher. The interview process was documented through field notes and facilitate data analysis.

The interviews were divided into three main themes: Teacher Perceptions of the Impact of Kahoot, Challenges Faced in Its Use, and Expectations for the Development of Digital Learning Media. The results of these interviews are expected to contribute to understanding teacher readiness and responses to technological innovation in education, particularly in junior high schools in rural areas.

**Table 2** Interview Questions Table.

No	Interview Questions
1	What do you think about the influence of using digital learning media such as Kahoot in classroom learning?
2	Have you ever used Kahoot before in your learning process?
3	How do students respond when you use Kahoot while teaching?
4	What are the advantages of Kahoot in your opinion in supporting ICT learning, especially Software Modeling?
5	What obstacles or challenges did you face when using Kahoot?
6	Do you feel Kahoot can increase student engagement in learning? Why?
7	How often do you use interactive media like Kahoot in a semester?
8	How do you rate the effectiveness of Kahoot compared to traditional learning methods?
9	Does the school provide support or training in the use of digital media such as Kahoot?
10	What are your hopes for the development of digital learning media in the future?

### How to Create an Account on the Kohoot App

To use Kahoot as an interactive and fun learning tool, the first step is to create a Kahoot account. This process is quite simple and can be done by anyone, both teachers and students, all you need is an internet connection and an active email address. Here are the systematic steps to follow to create a Kahoot account:

#### 1. Access the Kahoot Homepage

First, open your browser and visit the official Kahoot website at <https://kahoot.com>. Once the homepage opens, you'll see a homepage containing various information about the platform. At the bottom or center of the screen, there will be a "Next" button. Click it to begin the registration process.

**Figure 2** Main Page



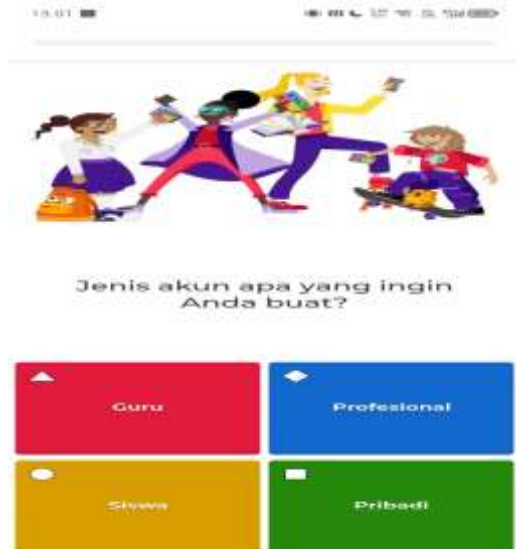
#### 2. Choose the Appropriate Account Type

The next step is to choose the type of account you will use. Kahoot offers several account types, including student, teacher, personal, and corporate accounts. For research and learning purposes at school, choose the teacher account option. This selection is important because it will determine what features you will have access to. A



teacher account provides flexibility in managing quizzes, sharing them with students, and analyzing results.

**Figure 3** Account Type Selection



### 3. Determine the Institution Type

After selecting your account type as a teacher, you will be prompted to select the category of institution you teach at. Select the "School" option, as this will simplify account configuration and align with the needs of primary and secondary education.

**Figure 4** Selection of Institution Type



### 4. Start Account Creation

After selecting an institution, you will be taken to the account registration page. Here, click the "Sign Up" or "Register" button, usually located in the top right or center of the page.

**Figure 5** Account Creation



### 5. Filling in Account Details

This step is the core of the account creation process. You can create an account by entering a valid email address and creating a password, or you can also choose to automatically log in through your Google (Gmail), Microsoft, or other integrated platform. Choose the method that's most convenient and accessible to you. Ensure the email address you use is active and secure, as it will be used for account confirmation and notifications.

**Figure 6** Filling in Account Data



### 6. Kahoot Homepage

After successfully registering and logging in, you will be directed to the Kahoot homepage. This is the control center where you can create, edit, or access quizzes you've previously created. On this screen, click the "Create your



first Kahoot" button to start creating a new quiz.

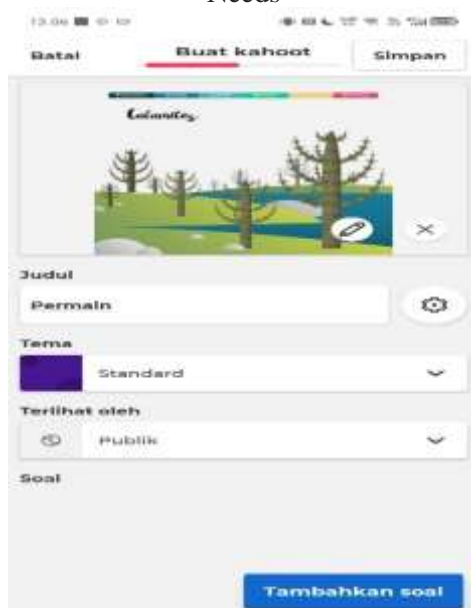
**Figure 7** Main View



#### 7. Determine Question Type and Filter

After choosing to create a new Kahoot, you will be asked to determine the desired quiz type or filter. Kahoot offers several quiz templates and styles to choose from, such as multiple-choice, true/false, puzzles, polls, and more. You can also select specific topics or categories as filters to make it easier to find or find inspiration for quiz content.

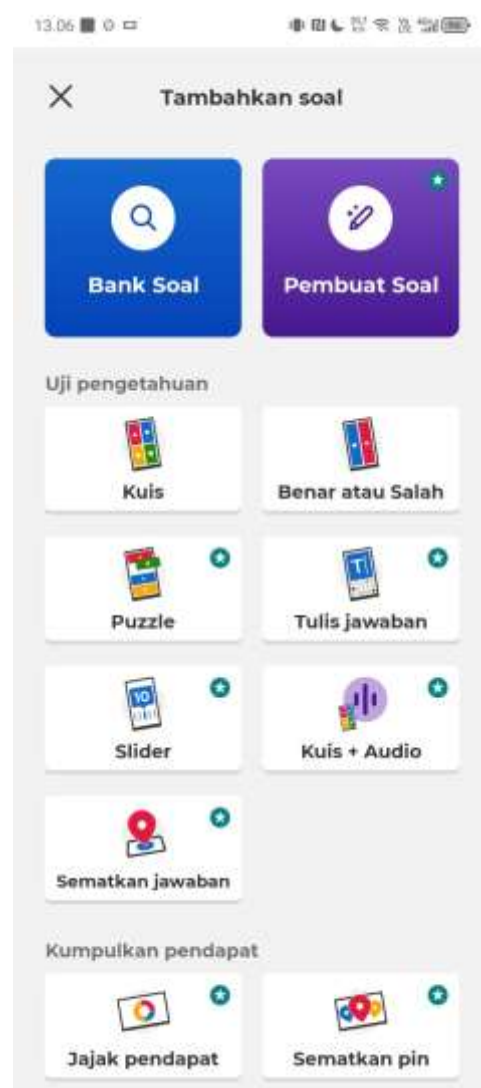
**Figure 8** Filter Selection According to Needs



#### 8. Adding Quiz Questions

After selecting the quiz type, it's time to add questions. Click the "Add Question" button to begin entering questions for use in the lesson. You can add more than one question, and each question can have a maximum of four answer choices.

**Figure 9** Addition of Learning Models



#### 9. Writing Questions and Answers

Type your question in the space provided, then enter several answer choices. You should also mark the correct answer so the system can automatically score the quiz. You can add images or supporting media to make the questions more engaging and contextual for students.

**Figure 10** Addition of Questions and Answers



#### 10. Finished and Ready to Use

Once all questions and answers have been entered, click the "Done" button. Congratulations! Your Kahoot account has been successfully created, and your first quiz is ready to use. You can now share the quiz with students via a game code or link. Quizzes can be accessed on Android, iOS, and laptops/PCs, making them highly flexible for use in a variety of learning situations.

By following the steps above, teachers can easily create a Kahoot account and begin designing more interactive, engaging, and digitally-responsive learning activities. Kahoot serves not only as an evaluation tool but also as a bridge to foster active student participation in understanding the subject matter.

#### Field Observation Analysis of Software Modeling Learning

Field observations of the Software Modeling course at SMP Negeri 1 BPR Ranau Tengah showed

significant differences between learning using Kahoot and learning without it. Observations were conducted in two different settings: class VIII-A as a control class using conventional learning methods, and class VIII-B as an experimental class using Kahoot digital learning.

In the class without Kahoot, student engagement was relatively low. Students tended to be passive, with only a few actively asking or answering teacher questions. Some students appeared to lack focus, and classroom interactions were more one-way: the teacher explaining and students taking notes. In contrast, in the class using Kahoot, student engagement increased significantly. When the interactive quiz session began, students showed high enthusiasm, scrambled to answer questions, and even provided spontaneous responses that demonstrated understanding of the material.

Teachers in the control class tended to use a lecture and open discussion approach. Explanations were delivered linearly, following the sequence of the material in the textbook. Meanwhile, in the experimental class, the teacher was more active as a facilitator, managing the class with short question-and-answer sessions between Kahoot games. This strategy made it easier for teachers to directly monitor student understanding, as the Kahoot results were displayed in real time. Although the use of Kahoot had a positive impact, some technical challenges arose. One teacher interviewed said:

"The internet signal is sometimes unstable. Some students are forced to share their phones with their friends due to limited devices. But so far, this has been overcome through collaboration among students." (Interview with ICT Teacher, 2025).

The school does not yet have a uniform distribution of digital devices. Some students use their own phones, while others share with friends. However, this does not diminish enthusiasm for learning; in fact, it fosters a collaborative spirit among students.

These observational findings align with Vygotsky's theory, which emphasizes the importance of social interaction in the learning process. In learning with Kahoot, students actively construct knowledge through interactions with teachers, peers, and digital media. Furthermore, this approach aligns with the principles of social constructivism, where students actively shape meaning from engaging and relevant learning experiences.

**Table 3** Comparison of Learning

Observed Aspects	Conventional Learning	Learning with Kahoot
Student Engagement	Low, passive	Tall, enthusiastic and active
Teacher Teaching Strategies	Lectures, general discussions	Interactive, digital quizzes
Class Atmosphere	Monotonous, less dynamic	Cheerful, competitive, exciting
Technical Issues	There isn't any	Limited signals & devices
The Role of Social Interaction	Minimal	Dominant, collaborative

Based on these observations, the use of learning media such as Kahoot has been proven to increase student engagement, enrich teacher teaching strategies, and create an interactive learning environment. Despite technical challenges, student enthusiasm and teacher support demonstrate that digital media is a viable option for learning innovation in today's digital age.

### Analysis of Teacher Perceptions of the Impact of Kahoot Use

The impact of using digital learning media such as Kahoot in teaching and learning activities is increasingly attracting the attention of educators, particularly in the context of

Information and Communication Technology (ICT) learning, including Software Modeling. Interviews with three ICT teachers at SMP Negeri 1 BPR Ranau Tengah revealed that teachers' perceptions of Kahoot were generally positive, although challenges remain in its implementation.

Teachers stated that Kahoot had a positive impact on student engagement and enthusiasm in learning. This medium was considered capable of breaking up the monotony of conventional learning and making the classroom atmosphere more lively. One teacher said:

“Kahoot is very helpful in making students more enthusiastic. Usually, when I explain the material, some of them are silent. But once the Kahoot session starts, everyone immediately focuses and enthusiastically answers.” (Teacher 1, interview April 25, 2025)

Another teacher also stated that Kahoot not only provides entertainment but also strengthens students' understanding of the material. According to her, the quiz concept in Kahoot helps students recall the material they have learned:

“I use Kahoot as a final assessment of the material. Without realizing it, they learn while playing. Even students who are usually passive participate in answering.” (Teacher 2, interview April 26, 2025)

However, teachers also acknowledged that Kahoot's effectiveness is maximized if supported by teachers' readiness in designing relevant question technical skills in operating the platform.

Teachers' primary motivation for trying Kahoot was to overcome boredom in learning and increase student participation. Several teachers stated that they were motivated to try this medium by seeing their students' enthusiasm for

technology. In an interview, one teacher stated:

"Kids these days are very attached to their phones and the internet. So I thought, why not take advantage of that? I learned how to use Kahoot myself and then tried it in class." (Teacher 3, interview April 26, 2025)

This demonstrates that teachers' motivation stems from a desire to adapt to current developments and the characteristics of today's students. Teachers feel the need to adopt more relevant methods to keep up with learning approaches.

Most teachers have a basic understanding of educational technology, but not all have truly mastered it in depth. Teacher 2 revealed that she is familiar with several digital media such as PowerPoint, instructional videos, and WhatsApp Groups, but only recently tried using quiz-based platforms like Kahoot.

Some of the obstacles faced included limited time for independent study and the lack of specific training from the school. Nevertheless, teachers expressed a willingness to learn and try new things as long as they improved the quality of learning. This indicates that teachers' attitudes toward technology are quite open, although they still need institutional support.

The findings from the interviews above can be analyzed using the Technology Acceptance Model (TAM) developed by Davis (1989). This model explains that two main factors influencing technology acceptance are Perceived Usefulness and Perceived Ease of Use.

Based on the interview results, it appears that teachers found Kahoot beneficial in increasing student engagement (perceived usefulness). They also considered Kahoot quite easy to learn, especially with the availability of online guides and short tutorials

(perceived ease of use). This combination of these two factors made teachers willing to try and integrate Kahoot into the learning process, although not yet routinely.

External factors such as school support and training were also mentioned by teachers as being less than optimal. This impacts long-term technology adoption. In this context, schools play an important role in providing facilities, training, and time for teachers to explore digital media more thoroughly.

**Table 4** Summary of Teachers' Perceptions of Kahoot

Aspect	Findings from Interviews
Learning Effectiveness	Increase activity, fun, strengthen understanding
Motivation for Use	Adapting to students' learning styles, innovation
Technology Understanding	The basics are pretty good, but need further training.
Challenge	Internet access, devices, teacher time constraints
Institutional Support	There is no official training yet, the initiative is still independent

From the above analysis, it can be concluded that teachers at SMP Negeri 1 BPR Ranau Tengah have a positive perception of Kahoot. They view it as a beneficial innovation in ICT learning, particularly in the Software Modeling subject. With adequate training and infrastructure support, Kahoot's use can be optimized to improve the overall quality of learning.

Challenges and Obstacles in Using Kahoot Although Kahoot offers many advantages in increasing student participation and creating an interactive learning environment, its implementation at SMP Negeri 1 BPR Ranau Tengah is not without challenges and obstacles. Based on field observations and interviews with teachers, several key factors hindered the optimal use of Kahoot in Software Modeling lessons.

One of the main obstacles faced by teachers was limited stable internet access and the limited availability of



devices for students. The school does not provide dedicated devices for students, so Kahoot use is highly dependent on whether students bring and have personal devices that can connect to the internet. Furthermore, the internet signal in the school's hilly environment is quite unstable, which often causes technical difficulties during interactive quizzes. An ICT teacher explained:

"Some students have their own phones, but not all of them. Sometimes the internet signal fluctuates, so when we start a Kahoot quiz, some of them get disconnected. That makes the learning experience less enjoyable." (Interview, April 27, 2025)

This situation requires teachers to prepare backup plans to keep the learning process going, such as displaying Kahoot questions on a projector and answering verbally. However, this, of course, diminishes the interactive nature of the medium.

The teachers interviewed admitted to not receiving formal training from their schools in using Kahoot or other digital learning media. Most learned independently through YouTube, articles, or recommendations from colleagues. When technical issues arose while using Kahoot, teachers had to resolve them themselves without the assistance of a dedicated technician. Another teacher said:

"I taught myself how to create quizzes on Kahoot. Luckily, my child at home can help me too. But when there are technical issues at school, I'm at a loss because there's no dedicated IT person who can help quickly." (Interview April 27, 2025)

The lack of technical support makes many teachers feel insecure about regularly integrating Kahoot into their lessons, despite their strong motivation to innovate.

The duration of classroom

instruction also presents a challenge. With relatively short face-to-face learning sessions and a dense curriculum, teachers must choose whether to spend time explaining concepts or interspersing them with quizzes. The process of logging in, dividing students into groups, and explaining how Kahoot works also takes time, especially for students who are unfamiliar with it. Another teacher also said that:

"If the time limit is 40 minutes, sometimes there's already a shortage of material to explain. If we add Kahoot, we often feel overwhelmed about where to insert it. But it's a shame not to use it, because students love Kahoot."

Teachers must balance the demands of the curriculum with innovative learning media, so Kahoot is often used as a distraction or used at the end of the lesson as an assessment.

One important finding from the observations was the disparity in students' abilities in operating devices or using digital applications. Some students still struggle to follow technical instructions when Kahoot is running. This can be due to background factors, lack of exposure to technology, or limited device usage at home.

This is exacerbated by the fact that teachers don't yet have specific strategies to support students who are digitally behind. As a result, some students become passive or fall behind during quizzes.

These obstacles align with the findings of research by Rahmat and Suryani (2021) in the *Journal of Educational Innovation and Technology*, which found that one of the main challenges in integrating digital learning media in secondary schools is the "digital divide" between students, minimal technical support, and the lack of a continuous training system for teachers.

Another study by Salsabila (2022) in the Journal of Interactive Education also states that the use of media like Kahoot in schools requires adequate infrastructure and digital literacy to be effective. Otherwise, the media becomes merely a momentary entertainment without significantly impacting conceptual understanding.

**Table 5** Summary of Constraints in Using Kahoot at SMP Negeri 1 BPR Ranau Tengah

No	Main Obstacles	Impact
1	Internet is unstable	Students are disconnected from quizzes, disrupting the flow of learning.
2	Student devices are not evenly distributed	Some students cannot participate actively
3	Lesson time is limited	The use of Kahoot is limited to final or interlude evaluations only.
4	No special training	Teachers have technical difficulties, lack confidence
5	Students are not familiar with Kahoot	Inequality of participation, passive students

Although Kahoot has been well-received by teachers and students as an innovative learning tool, its implementation still faces a number of technical and non-technical challenges. Suggested solutions include providing regular training by schools, improving technology infrastructure, and developing more flexible learning strategies to accommodate student diversity.

## CONCLUSION

Based on observations, interviews, and analysis of the impact of using Kahoot in the Software Modeling learning process, it can be concluded that interactive digital media such as Kahoot has a positive impact on increasing student engagement in class. Students demonstrated enthusiasm and active participation when using this media, especially during quizzes. The classroom atmosphere became more lively and competitive, compared to learning without interactive media, which tends

to be monotonous. This demonstrates that utilizing technology can be a solution to improve the quality of ICT learning in a fun and meaningful way.

On the other hand, teachers expressed a positive attitude towards the use of Kahoot. Although some were not yet fully familiar with the application, their enthusiasm for trying and exploring new learning methods remained high. They viewed Kahoot as a medium that can help capture students' attention, provide rapid feedback, and strengthen conceptual understanding. However, Kahoot's use remains limited due to various technical and non-technical obstacles that have not been fully addressed, such as limited internet access, a lack of student devices, and minimal teacher training.

The main challenge that emerged was the limited digital infrastructure in schools, such as unstable internet connections and not all students having adequate devices. Furthermore, limited learning time and students' unequal understanding of technology usage also posed obstacles. Teachers were required to be more creative in managing time and developing strategies to ensure effective learning, even though not all students could optimally engage in Kahoot sessions.

In relation to the Technology Acceptance Model (TAM) theory, the perceived usefulness and ease of use of Kahoot were already quite high among teachers. However, external factors such as supporting facilities, training, and school policies significantly influenced teachers' decisions to continue adopting this medium in their learning. Therefore, for optimal and sustainable use of digital media like Kahoot, synergy between teachers, students, schools, and education policymakers is needed.

## REFERENCE

- Ade Achmadi. (2024). Pemanfaatan Platform Kahoot sebagai Media Pembelajaran Interaktif di SMPN 2 Mandau. <https://www.smpn2mandau.sch.id/read/279/pemanfaatan-platform-kahoot-sebagai-media-pembelajaran-interaktif-di-smpn-2-mandau>
- Anggi Nurmahallani. (2021). Pengembangan Kuis Interaktif Berbasis Kahoot untuk Meningkatkan Hasil Belajar Peserta Didik Kelas VII. Skripsi tidak diterbitkan. Universitas Islam Negeri Raden Intan Lampung.
- Assegaf, Z. R., Susanti, W., Esi, N., & Yani, A. (2022). Aplikasi Kahoot pada Pembelajaran Matematika Materi Sistem Persamaan Linear Dua Variabel. *Adiba: Journal of Education*, 2(4), 507–516.
- Cahyanti, Y. R., Megasari, D. C., & Rofisian, N. (2023). Peran Kahoot sebagai Media Pembelajaran Interaktif dalam Mata Pelajaran IPAS Masa Kini. *Jurnal Teknologi Pendidikan dan Pembelajaran*, 1(1), 160–163.
- Cambridge English. (n.d.). Cambridge English Kahoots. Diakses dari <https://www.cambridgeenglish.org/teaching-english/resources-for-teachers/kahoot/>
- Hidayat, I., Supriani, A., & Setiawan, A. (2023). Implementasi Aplikasi Kahoot sebagai Media Pembelajaran Interaktif dengan Siswa SMP Negeri 1 Kunto Darussalam. *Journal on Education*, 6(1), 6933–6942.
- Ilmiyah, N. H., & Sumbawati, M. S. (2019). Pengaruh Media Kahoot dan Motivasi Belajar terhadap Hasil Belajar Siswa. *JIEET (Journal of Information Engineering and Educational Technology)*, 3(1), 46–50. <https://doi.org/10.26740/jieet.v3n1.p46-50>
- Januszewski, A., & Molenda, M. (2008). *Educational Technology: A Definition with Commentary*. New York: Routledge.
- Kahoot!. (n.d.). Interactive Lessons: How to Teach with Kahoot!. Diakses dari <https://kahoot.com/schools/interactive-lessons/>
- Kahoot!. (n.d.). Kahoot! for Schools. Diakses dari <https://kahoot.com/schools/>
- Kahoot!. (n.d.). Make Learning Awesome! Diakses dari <https://kahoot.com/>
- Kesler Science. (n.d.). 4 Ways To Use Kahoot in the Classroom. Diakses dari <https://keslerscience.com/4-ways-to-use-kahoot-in-the-classroom>
- Mattawang, M. R., & Syarif, E. (2023). Dampak Penggunaan Kahoot sebagai Platform Gamifikasi dalam Proses Pembelajaran. *Journal of Learning and Technology*, 2(1), 33–42.
- McLean, H. Y., Ramli, R., Sukmawati, S., Wahyudi, I., & Fadli, M. (2024). Sosialisasi dan Edukasi Media Kahoot sebagai Media Pembelajaran Interaktif Siswa pada SMP N 1 Konawe. *Dinamika Sosial: Jurnal Pengabdian Masyarakat dan Transformasi Kesejahteraan*, 1(2), 75–83. <https://doi.org/10.62951/dinsos.v1i2.275>
- Misnah, M. (2019). Pengaruh Media Pembelajaran Situs Lumpang Batu dan Motivasi Belajar Terhadap Hasil Belajar Siswa SMA. *JTP: Jurnal Teknologi Pendidikan*, 21(1), 42–55.
- Niemann, S., Greenstein, D., & David, D. (2004). Helping Children Who Are Deaf: Family and Community Support for Children Who Do Not Hear Well. [http://www.hesperian.org/publications\\_download\\_deaf.php](http://www.hesperian.org/publications_download_deaf.php)
- Pelatihan Penggunaan Platform Kahoot bagi Guru SMP dan SMA di Kota Ternate. (2023). *Jurnal Edukasi dan Pengabdian Kepada Masyarakat*, 3(1), 45–52.
- Pemanfaatan Media Pembelajaran Interaktif Berbasis Kahoot dalam Meningkatkan Minat Belajar Siswa. (2024). *Jurnal Riset Inovasi Pembelajaran*, 1(1), 10–20. Diakses



dari

<https://etdci.org/journal/jrip/article/view/1764>

- Ruliyani, F., Hamsi, M., & Mansur, A. D. (2023). Pemanfaatan Kahoot dengan Model Pembelajaran Inquiry untuk Meningkatkan Hasil Belajar Peserta Didik. *Jurnal Inovasi Teknologi Pembelajaran*, 5(2), 60–70.
- Sadid, A. (2014). Model Desa Terpadu PAUDNI Mewujudkan Masyarakat Pembelajar Sepanjang Hayat. *Jurnal VISI PPTK-PAUDNI*, 9(1), 56–67.