



Training and Mentoring on the Use of Kahoot to Increase Student Engagement and Motivation at SMAN 1 Kefamenanu

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Abstract

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This Community Service Activity aims to increase the engagement and motivation of students at SMAN 1 Kefamenanu through training and mentoring using Kahoot as an interactive gamification-based learning medium. The activity was carried out in three main stages: training, mentoring, and evaluation, involving 50 teachers and 50 students. The training focused on improving teachers' abilities in designing and managing Kahoot quizzes, while mentoring was provided to ensure that teachers could implement the use of Kahoot in the classroom learning process. Evaluation was carried out through observation, questionnaires, interviews, and analysis of quiz results to obtain quantitative data. The results of the activity showed a very high level of participant enthusiasm with an attendance rate of 97%. 93% of teachers were able to create and manage quizzes well and 86% were able to implement them in the classroom learning process. From a student perspective, 95% said Kahoot could increase their engagement in learning and 96% experienced increased learning motivation and 82% were able to answer quiz questions correctly. The level of participant satisfaction reached 85% and 78% of teachers expressed a commitment to using Kahoot continuously. Based on these results, it can be concluded that training and mentoring on the use of Kahoot are effective in improving teacher competence, student engagement, and learning quality, and have good potential for sustainability if supported by continued mentoring and school policies that support the use of learning technology.

Abstrak

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Kegiatan Pengabdian Kepada Masyarakat ini bertujuan untuk meningkatkan keterlibatan dan motivasi belajar siswa SMAN 1 Kefamenanu melalui pelatihan dan pendampingan dengan menggunakan pemanfaatan Kahoot sebagai media pembelajaran interaktif berbasis gamifikasi. Kegiatan dilaksanakan dalam tiga tahapan utama yakni pelatihan, pendampingan dan evaluasi dengan melibatkan 50 guru dan 50 siswa. Pelatihan difokuskan untuk meningkatkan kemampuan guru dalam merancang dan mengelola kuis Kahoot sementara pendampingan diberikan untuk memastikan bahwa guru dapat menerapkan penggunaan Kahoot dalam proses pembelajaran di kelas. Evaluasi dilakukan melalui observasi, angket, wawancara dan analisis hasil kuis untuk mendapatkan data kuantitatif. Hasil kegiatan menunjukkan tingkat antusiasme peserta sangat tinggi dengan Tingkat kehadiran mencapai 97%. Sebanyak 93% guru mampu membuat dan mengelola kuis dengan baik dan 86% dapat menerapkannya di dalam proses pembelajaran di kelas. Dari perspektif siswa, sejumlah 95% mengatakan Kahoot dapat meningkatkan keterlibatan mereka dalam pembelajaran dan 96% mengalami peningkatan motivasi belajar serta 82% dapat menjawab soal kuis dengan tepat. Tingkat kepuasan peserta mencapai 85% dan 78% guru menyatakan komitmen untuk menggunakan Kahoot secara berkelanjutan. Berdasarkan hasil tersebut, dapat disimpulkan bahwa pelatihan dan pendampingan pemanfaatan Kahoot efektif dalam meningkatkan kompetensi guru, keterlibatan siswa, dan kualitas pembelajaran, serta memiliki potensi keberlanjutan yang baik apabila didukung oleh pendampingan lanjutan dan kebijakan sekolah yang mendukung pemanfaatan teknologi pembelajaran.

1. INTRODUCTION

In the era of the Industrial Revolution 4.0 and the transition to Society 5.0, the education system is required to adapt to the quick development of information and communication technology (ICT). The learning process can no longer rely solely on conventional methods but must integrate digital technology to create a more engaging, interactive, and meaningful learning experience for students. One of the main challenges facing education today is how to increase student engagement and motivation amidst the rapid flow of information and digital distractions that permeate their daily lives.

The use of technology in education has become a major focus in various academic studies. According to Gikas and Grant (2013), integrating digital technology into learning can increase student engagement by enabling more dynamic interactions between teachers, students, and learning materials. Digital technology provides opportunities for students to learn actively through direct experience (experiential learning), making the learning process more meaningful. Siahaan (2022, 2024) found out that the implementation of technology helped students on their understanding towards vocabulary.

Learning motivation is an internal factor that plays a crucial role in determining the success of the learning process. Students with high learning motivation tend to be active, enthusiastic, and eager to participate in teaching and learning activities. Conversely, students with low learning motivation tend to exhibit passive behavior, become bored easily, and are less engaged in learning activities. This situation is frequently encountered in various schools, including SMAN 1 Kefamenanu, where some students demonstrate low levels of engagement during the learning process, especially when the learning method is still one-way and monotonous.

One popular approach to technology-based learning is game-based learning (GBL), a learning method that utilizes game elements to achieve educational goals. Plass, Homer, and Kinzer (2015) stated that GBL can increase students' intrinsic motivation because it presents elements of competition, challenges, and rewards that stimulate curiosity and enthusiasm for learning. In this

context, Kahoot has become one of the most widely used applications globally due to its ease of access and ability to create a fun learning experience. Studies conducted by Fahada (2022, 2023) also shows that implementing games in language teaching successfully improved students' understanding on language components such as vocabulary as well as enhanced their listening ability.

Based on initial observations and discussions with teachers at SMAN 1 Kefamenanu, it was found that most learning processes still utilize conventional approaches such as lectures, assignments, and simple discussions. While these methods remain relevant, in the context of Generation Z, who are highly familiar with the digital world, they tend to be less effective in stimulating active student participation. Teachers also revealed that one of the main obstacles to integrating technology into learning is limited knowledge and skills in utilizing engaging and easy-to-use digital-based learning applications.

One solution that can be implemented to address these issues is through the use of Kahoot, a game-based learning platform that can be used to create interactive quizzes, surveys, and digital classroom discussions. Kahoot enables teachers to design fun and competitive learning, thereby increasing student motivation and engagement in the learning process. Several studies have shown that using Kahoot can improve student attention, participation, and knowledge retention because learning is packaged with exciting and challenging game elements.

Kahoot is an online learning platform that allows teachers to create interactive quizzes that students can access through devices such as smartphones, tablets, or computers. In their research, Licorish et al. (2018) found that using Kahoot can improve student focus, emotional engagement, and learning outcomes compared to conventional methods. This is because Kahoot combines game elements and immediate feedback, allowing students to see their results in real time and be motivated to improve their performance.

Besides increasing student motivation, Kahoot is also beneficial for teachers as a formative evaluation tool. Teachers can easily gauge students' understanding of the material taught and adjust future teaching strategies accordingly. Bicen and Kocakoyun (2018) stated that Kahoot helps teachers create an active, competitive, and enjoyable classroom atmosphere, thereby increasing the effectiveness of communication between teachers and students.

In the context of Indonesian education, various studies have shown similar results. Tanjung, et al. (2024) reported that using Kahoot in senior high school learning increased student learning outcome by up to 70% compared to lecture methods. Meanwhile, Tampubolon, et al. (2025) emphasized that Kahoot not only increases learning motivation but also strengthens students' engagement and collaborative skills because the process encourages interaction and discussion among participants.

However, optimal implementation of Kahoot in schools like SMAN 1 Kefamenanu requires training and mentoring for both teachers and students. Teachers need to understand how to create, manage, and utilize Kahoot creatively according to the characteristics of the subjects they teach. Meanwhile, students also need to be introduced to how to use the application as part of their learning activities. Therefore, this community service activity was carried out with the aim of providing training and mentoring on Kahoot utilization for teachers and students of SMAN 1 Kefamenanu so that they are able to apply innovative digital learning technology to increase student engagement and motivation.

This activity is expected to contribute to improving the quality of learning in schools and inspire other educational institutions in the North Central Timor Regency to integrate digital technology into their teaching and learning processes. Therefore, this community service activity focuses not only on improving technical skills in using applications but also on transforming the learning culture toward more interactive, creative, and collaborative learning.

The main objective of this community service activity is to increase student engagement and motivation at SMAN 1 Kefamenanu through training and mentoring for teachers and students on the use of Kahoot. Specifically, the objectives of this activity are as follows:

1. Provide technical training to teachers and students on how to create, manage, and use Kahoot as an interactive learning medium.
2. Assist teachers in integrating Kahoot into the planning and implementation of classroom teaching and learning activities.
3. Increase student active participation and motivation through the implementation of game-based learning using Kahoot.
4. Build a creative, collaborative, and innovative digital learning culture within SMAN 1 Kefamenanu.
5. Evaluate the impact of Kahoot implementation on student engagement and motivation and on improving teachers' pedagogical skills.

2. IMPLEMENTATION METHOD

This community service activity was held at SMAN 1 Kefamenanu, located in North Central Timor Regency, East Nusa Tenggara. This school was chosen because it is one of the leading public high schools in the area, with a large student population and a high level of readiness to adopt technology-based learning innovations. The activity lasted for three months, from the preparation stage to the final evaluation.

Table 1. Timetable Schedules

No	Activities	Sept		October				November				
		3	4	1	2	3	4	1	2	3	4	
1	Preparation and Coordination	█										
2	Training			█								
3	Intensive Classroom Mentoring						█					
4	Evaluation									█		

The activity was conducted offline (face-to-face), while still taking into account school conditions and policies, and supported by available technological devices such as computers/laptops, the school's internet connection, and projectors.

The primary target audience for this community service activity is teachers and students of SMAN 1 Kefamenanu which consists of 45 teachers from various subjects (especially subjects with the potential to use interactive quizzes, such as Indonesian, English, Mathematics, and Science) and 45 students selected from various grade levels (10th, 11th, and 12th) participated in the training and implementation of Kahoot in their classrooms. Participants were selected based on the principal's recommendation, subject representation, and readiness to actively participate in the activity.

This community service activity was implemented using a participatory and experiential learning approach, where participants (teachers and students) were actively involved in every stage of the activity. This approach was chosen because it aligns with the principle of community empowerment, which places participants as the primary subjects in the learning process, not merely objects of training. The activity implementation method consists of four main stages:

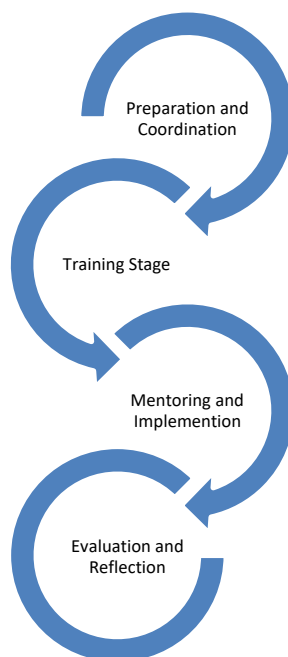


Figure 1. Stages of Activity Implementation Method

1. Preparation Stage

In the initial phase, the community service implementation team coordinated with the school principal and the teaching staff to explain the objectives, benefits, and implementation plan for the activity. After obtaining permission and support, the team conducted a needs assessment through observations and interviews with several teachers and students.

The results of the needs analysis indicated that:

1. Some teachers were familiar with digital learning applications, but had never used Kahoot in their learning process.
2. Teachers' skills in integrating digital media were still limited to the use of PowerPoint and WhatsApp groups for learning communication.
3. Students showed enthusiasm for using technology in learning, but rarely had interactive game-based learning experiences.

Based on the analysis, a training and mentoring plan was developed, covering an introduction to Kahoot, training on creating interactive quizzes, and practical application in the classroom.

2. Training Stage

The training phase was conducted over two intensive days, each lasting six hours. The training was divided into two main sessions: theory and practice.

a. Theory Session

In this session, participants received introductory material on the urgency of technology integration in 21st-century learning, the concept of game-based learning (GBL) and its benefits for student learning motivation, an introduction to the Kahoot platform: features, advantages, and types of activities that can be created (quizzes, surveys, discussions, and challenges), and strategies for integrating Kahoot into teaching and learning activities. The methods used in this phase included interactive lectures, small group discussions, and case studies, where participants were given real-life examples of Kahoot's use in secondary school learning contexts.

b. Practical Session

In the practical session, participants directly create and manage Kahoot accounts, then design quizzes or learning games tailored to their respective subjects. The service team provides step-by-step guidance, including creating a Kahoot account (free or educational), creating quizzes and setting questions and answer options, using image and video features to enrich learning content, and simulating games in class with student involvement. The outcome of this training phase is that each teacher will have at least one ready-to-use Kahoot content that can be used in classroom learning activities.

3. Mentoring and Implementation Stage

After the training phase was completed, the activity continued with a month of classroom implementation mentoring. During this phase, the community service team acted as facilitators and mentors for teachers in directly implementing Kahoot in the learning process. The mentoring was carried out through the following steps: learning planning with teachers, including selecting topics, learning objectives, and appropriate quiz formats, observing classroom learning implementation, where teachers used Kahoot as an evaluation or apperception tool, reflection with teachers and students to assess responses, challenges, and benefits of using Kahoot, and additional technical guidance for teachers who still encountered technical or pedagogical difficulties. During this phase, students were actively involved as participants and as testers of the media's effectiveness. The community service team observed changes in student behavior during the learning process, particularly in terms of engagement, enthusiasm, and motivation to learn. Mentoring was conducted over several learning cycles (2–3 times per teacher) to ensure that teachers fully understood how to use Kahoot independently and creatively. The results of the mentoring show that most teachers have started to use Kahoot not only as an evaluation medium, but also as an interesting opening or closing tool for learning.

4. Evaluation and Reflection

Activity evaluation was conducted to assess the extent to which the community service objectives had been achieved. This evaluation used a mixed methods approach, using both quantitative and qualitative data.

- a. Quantitative Evaluation was conducted by distributing questionnaires before and after the training (pre-test and post-test) to measure: improved teacher knowledge and skills in using Kahoot, improved student motivation and engagement in the learning process, questionnaire results were analyzed descriptively to identify significant changes in participants' motivation and participation levels after the activity.
- b. Qualitative Evaluation was conducted through classroom observations and in-depth interviews with several teachers and students to gain an in-depth understanding of their experiences using Kahoot. Aspects observed included: student responses to Kahoot-based learning, level of student participation and enthusiasm, teachers' ability to design and facilitate interactive learning, technical and non-technical barriers encountered during implementation.
- c. As the final part of the activity, a joint reflection session (focus group discussion) was held between the service team, teachers, and students. The purpose of this session was to: identify best practices that can be implemented sustainably, develop recommendations for schools to support the use of digital media in learning, design follow-up strategies in the form of further training or the

development of a technology-based teacher community (digital teacher community).

3. RESULTS AND DISCUSSIONS

Training Stage

Training was conducted in two sessions within two weeks. On first week, participants were introduced with the use of Kahoot! basic accounts and on the second week they were trained using premium accounts. There were 50 teachers from different school subjects involved in both trainings and 50 students representing from grade X to XII at the end of training sessions.



Figure 2. Giving Training on Kahoot! Use

On the first week, participants were introduced with some features that can be accessed freely using Kahoot! basic accounts such as creating a quiz in form of multiple choice and true false statement. Firstly they were trained on how to create account using their personal email. After each participant successfully logged in into their own account, they were trained to create their own quizzes based on the subjects they teach. Since the variety of questions on basic account is limited, so the participants were only trained on how to create multiple choice and true false questions. They were also instructed in setting the timer for each question they have created. After they finished, they played the quizzes they have made by hosting live so students could join synchronously as well as by assigning it for asynchronous meeting.

On the second week, the same participants were given Kahoot! premium accounts which offer more features such as more types of questions and integrating Artificial Intelligence (AI) in creating the quizzes. Participants were coached how use the features on premium accounts maximally. They were given some practices in creating other types of questions such as dragging, matching, sentence completion and rearranging. After that, they were trained on how to integrate AI in creating quizzes by typing the topic of quiz they want to create followed by another training which requires participants to upload their questions banks or lesson materials they have composed in Ms. Word, Ms. Power Point or PDF formats. Then they practiced on generating the materials into quizzes or presentations. They were also introduced with Kahootopia, Zootopia and some other features they can explore with premium accounts for other alternative ways in playing the quizzes. At the end of the training, they were assigned to download the quiz reports they have played and assigned to their students. This following graph shows the participants competence after training.

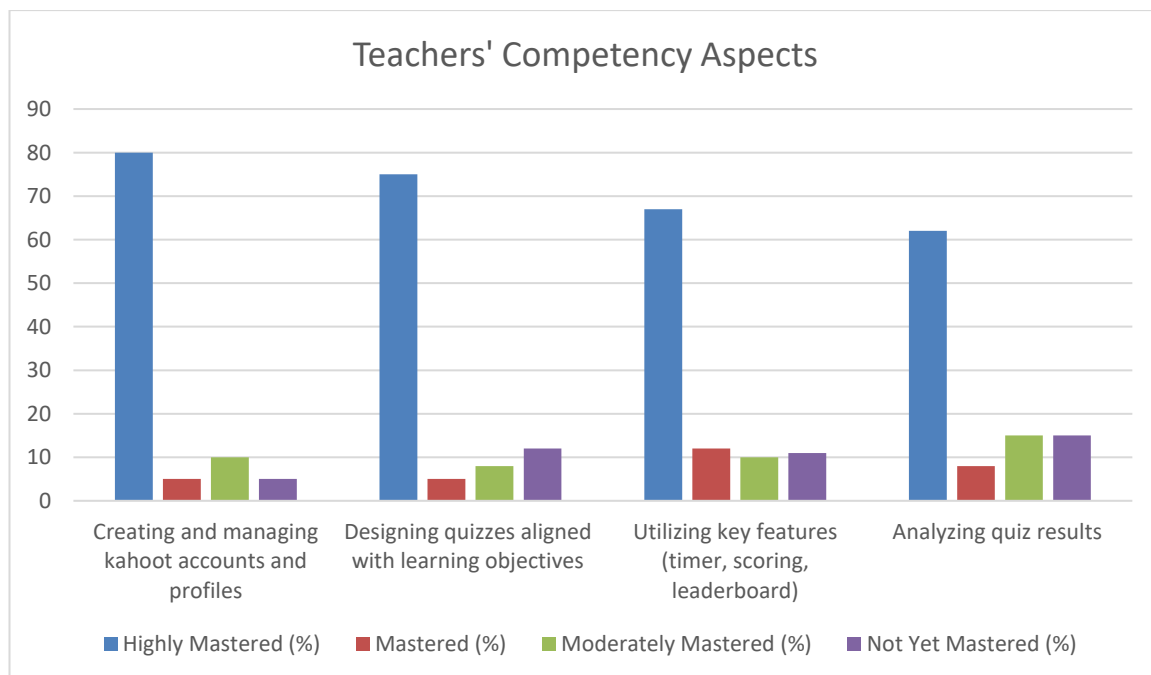


Figure 3. Teachers' Competency Levels after Following Training

The evaluation results showed that teachers' competency in creating and managing Kahoot accounts was high. Eighty five percent of teachers were at the Highly Mastered and Mastered levels, indicating that most participants were able to independently register accounts, manage user profiles, and manage digital classes without significant obstacles. This competency is crucial as an initial foundation for utilizing Kahoot, as mastery of basic technical aspects determines the smooth use of advanced features. However, 5 percent of teachers were still in the Not Yet Mastered category, generally due to limited initial experience using digital-based learning platforms. These findings indicate that the training was effective in improving teachers' technical readiness to adopt learning technology.

Teachers' ability to design quizzes aligned with learning objectives has shown positive results. Data shows that 80% of teachers are in the Highly Mastered and Mastered categories, meaning they are able to create questions relevant to core competencies, learning indicators, and students' cognitive levels. Teachers are not solely focused on memorization but are beginning to develop questions that foster conceptual understanding. However, 8% of teachers are still in the Moderately Mastered category, indicating the need for further guidance in designing more varied and challenging questions. This aspect confirms that utilizing Kahoot requires not only technical skills but also pedagogical skills in developing meaningful assessments.

Teachers' mastery of Kahoot's core features is at an intermediate to advanced level. Seventy nine percent of teachers fall into the Highly Mastered and Mastered categories, indicating they are able to utilize the timer, scoring system, and leaderboard features to enhance learning dynamics. Utilizing these features has been shown to create a more interactive and competitive learning environment. However, 10 percent of teachers remain in the Moderately Mastered category, particularly in terms of time management for questions and interpretation of student scores. This suggests that even with the features being utilized, further strengthening of understanding is needed to ensure optimal utilization and appropriateness to student characteristics.

The analysis of quiz results and the utilization of analytical data are the most challenging competencies for teachers. Evaluation results show that only 70% of teachers are in the Highly Mastered and Mastered categories, while 15% are in the Moderately Mastered category and 15% are in the Not Yet Mastered category. This indicates that some teachers still need assistance in reading and interpreting quiz data for learning evaluation purposes. However, teachers who have mastered

this aspect stated that Kahoot analytical reports are very helpful in conducting formative evaluations quickly and accurately. This finding emphasizes the importance of strengthening data literacy for teachers so that learning technology is used not only as an interactive tool but also as a means for data-driven pedagogical decision-making.

Mentoring and Implementation Stage

The two-week mentoring phase provided a more concrete picture of Kahoot's implementation in learning. Of all participating teachers, 80% successfully implemented Kahoot in their classrooms at least once, and 65% used it more than twice. Classroom observations showed an increase in student participation to 85%, significantly higher than pre-intervention learning activities. The use of leaderboards, timers, and instant feedback features has been shown to improve classroom dynamics and make learning more interactive. Teachers stated that Kahoot facilitates formative evaluations because quiz data can be automatically analyzed immediately.



Figure 4. Giving Training on Kahoot! Use

There were three classes selected by community service team for mentoring which consist of three teachers and 30 students in each class. The three teachers teach different subjects; History, Civics and Biology. The teachers had implemented Kahoot! in their classes for a couple of weeks after the training session. This following chart shows the comparison of before and after mentoring.

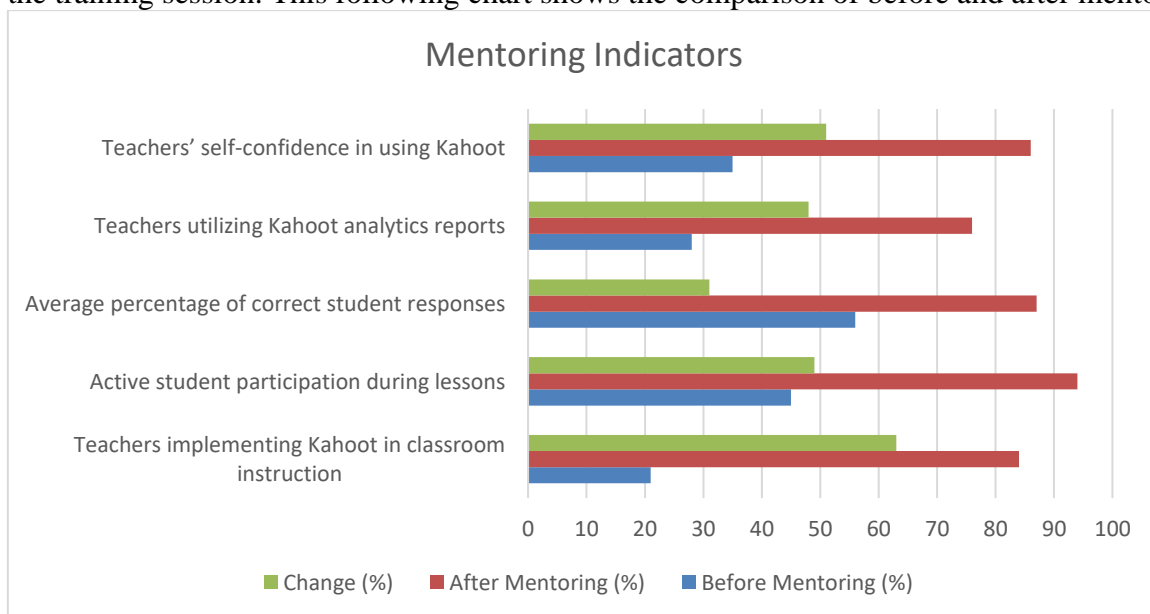


Figure 5. Results of Mentoring on the Use of Kahoot!

The mentoring results showed a significant improvement in teachers' ability to effectively implement Kahoot in the classroom. The highest improvement was seen in the percentage of teachers implementing Kahoot in their learning and their confidence in using technology-based media. From a student perspective, active participation and the percentage of correct answers experienced a significant increase, indicating that mentoring plays a crucial role in optimizing the use of Kahoot as an interactive and evaluative learning medium.

Evaluation and Reflection Stage

The evaluation was conducted to assess the level of achievement of the objectives of the Kahoot training and mentoring program at SMAN 1 Kefamenanu. This evaluation covered aspects of participant attendance, teacher competency improvement, student engagement and motivation, utilization of learning analytics features, and the sustainability of Kahoot's use in the learning process. Evaluation data was obtained through observations during the activity, questionnaires to teachers and students, and analysis of the results of the Kahoot quizzes used in the learning process.



Figure 6. Evaluation and Reflection

The evaluation results are presented in quantitative data to provide an objective overview of the effectiveness of the implemented activities. The tabular presentation of the data is intended to facilitate readers in understanding the achievements of each evaluation indicator and assessing the overall impact of the activities. The following table summarizes the evaluation results of the training and mentoring activities on Kahoot utilization at SMAN 1 Kefamenanu.

Table 2. Evaluation Results of Kahoot Use

No	Evaluation Aspects	Evaluation Indicators	Evaluation Results	Category
1	Participant attendance	Percentage of teachers' and students' attendance	97%	Excellent
2	Teachers' technical competence	Ability to create and manage Kahoot! quizzes	93%	Excellent
3	Teachers' implementation of Kahoot!	Use of Kahoot in classroom instruction	86%	Excellent
4	Student Engagement	Active student participation during Kahoot activities	95%	Excellent
5	Students' learning motivation	Results of student motivation questionnaire	96%	Excellent
6	Students' understanding of learning materials	Percentage of correct responses in Kahoot quizzes	82%	Excellent

7	Teachers' use of learning analytics	Use of Kahoot analytics reports for assessment	76%	Good
8	Participant Satisfaction	Teacher's and students' satisfaction level	85%	Excellent
9	Sustainability of Kahoot! use	Teachers' commitment to continue using Kahoot!	78%	Good

Evaluation Category Criteria

Excellent : $\geq 81\%$

Good : 71% – 80%

Fair : 61% - 70%

Poor : $\leq 60\%$

Based on the evaluation results, the training and mentoring activities on Kahoot utilization at SMAN 1 Kefamenanu went well and received a very positive response from teachers and students. The participant attendance rate reached 97%, demonstrating high enthusiasm and commitment throughout the activity. From the teacher perspective, 93% were able to create and manage Kahoot quizzes effectively, and 86% successfully implemented them in the learning process. This indicates that the training provided was effective in improving teacher competency in utilizing technology-based learning media.

The impact of the activity was clearly visible on students, particularly in terms of engagement and motivation to learn. The level of active student participation during learning using Kahoot reached 95%, while questionnaire results showed that 96% of students experienced increased learning motivation. Furthermore, the percentage of students with correct answers in the quizzes reached 82%, indicating an increase in understanding of the material. These findings indicate that Kahoot is able to create a more interactive and enjoyable learning environment and encourage active student engagement which is in line with the result of previous study conducted by Licorish et al.

In terms of evaluation and sustainability, 76% of teachers have utilized Kahoot's analytics features to assess student learning outcomes, although this aspect still needs improvement through continued mentoring. Participants were 85% satisfied with the activity, and 78% of teachers expressed a commitment to continue using Kahoot in their learning after the activity ended. Overall, the evaluation results indicate that this activity was effective in improving the quality of technology-based learning and has good potential for sustainability at SMAN 1 Kefamenanu.

4. CONCLUSION AND SUGGESTION

Based on the results and discussion, the training and mentoring activities on Kahoot utilization at SMAN 1 Kefamenanu were proven to run well and have a positive impact on the learning process. Teachers demonstrated improved skills in designing and implementing Kahoot-based learning, while students became more active, motivated, and engaged during learning activities. The high levels of attendance, participation, and participant satisfaction indicate that this activity is relevant to the school's needs and is able to create a more interactive and enjoyable learning environment. Therefore it can be concluded that this training and mentoring activity was able to meet the needs of the teachers as well as the students at SMAN 1 Kefamenanu, Timor Tengah Utara, Nusa Tenggara Timur.

As a follow-up, it is recommended that schools encourage the continued use of Kahoot across a range of subjects, not limited to a single learning context. Furthermore, continued support should focus on utilizing Kahoot's data and analytics features to enable teachers to conduct more targeted and evidence-based learning evaluations. With the support of school policies and ongoing teacher capacity development, Kahoot's use is expected to continue to improve the quality of learning and

student learning outcomes.

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