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The Effectiveness of Pre-test and Post-test Using Kahoot in Increasing Students' Attention

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ABSTRACT

This study aims to determine the effectiveness of the Kahoot application as an evaluation tool for students in terms of student attention. This type of research is quantitative, with a one-shot case study design. The population in this study were all eighth-grade junior high school students, the sampling in this study was through purposive sampling, namely class 8.5. The research instrument consisted of an attention questionnaire through Google Forms and observations. The results of the study found that Kahoot was used in the pre-test and post-test to make students' attention more effective. The average Kahoot in learning is 82.6% or very effective, the average pre-test using Kahoot is 80.07% or very effective, and the post-test average using Kahoot is 82.3% or very effective. Thus, Kahoot is very effective for pre-test and post-test.

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1. INTRODUCTION

Technological progress in the era of the Industrial Revolution 4.0 is increasingly rapid. All aspects of life adapt to technological developments, including the world of education. The development of this technology is growing very quickly, which has become part of the community in serving and providing information, so that people can access information easily at their fingertips (Gibson & Smith, 2018). The world of education needs to take advantage of technology with its various advantages to improve the quality of education from various aspects such as teachers, media, curriculum, learning processes, assessments, and others.

The presence of technology in education is positively welcomed by school residents, especially teachers, which is used to make learning more effective. In making learning effective, teachers use various ways, one of which is by using applications in assessment/evaluation. This application is expected to increase students' attention in learning. According to Tondeur et al. (2017), technology is used in education to support learning either as an information tool (as a means of accessing

information) or as a learning tool (as a means of supporting learning activities and assignments). In the assessment, the teacher also uses advanced technology in the form of game applications known as gamification.

Assessment in schools is an important stage to see student learning progress. There are two assessments in school learning, namely formative and summative. Assessment is used to provide feedback, determine the direction to be studied next, diagnose learning difficulties, determine learning progress, and as an evaluation tool and program accountability. In the era of digitalization, it is necessary to adapt evaluation tools that follow the latest developments, one of which is based on gamification. Gamification is a process that aims to change non-game contexts such as learning, teaching, and promotion to be more interesting by integrating game thinking, game design, and game mechanics (Wahyuningsih et al., 2022). Several studies that integrate gamification in the assessment include Quizizz (Mukharomah, 2021; D. N. Rahmawati et al., 2022; Wijaya, 2022), Kahoot (Fajri et al., 2021; Lisnani & Emmanuel, 2020; Seftiani, 2019), Google Form (Agustina, 2021; Nurhidayatuloh et al., 2022; Wulandari & Murdiono, 2022), Plickers (Alifa et al., 2020; Purwanti et al., 2021), and other applications. The utilization of these applications can streamline learning.

Gamification is a game-based concept helpful in motivating and increasing involvement in an activity. There are several evaluation tools in the form of online quizzes that can be used for gamification methods in learning such as Kahoot, Quizizz, Google Form. This application is an online application based on gamification. This application has features that can increase student motivation and learning engagement. The application is a type of quiz that provides direct feedback after students take the quiz in the form of points. By knowing direct feedback, it can generate positive perceptions of students in the learning process. The scores obtained or the ratings provided by the application give rise to and encourage the competitive nature of students. Such learning conditions and processes will encourage student involvement and lead to student motivation for active participation in learning (Wahyuningsih et al., 2022). This application is part of the teacher's efforts to activate students and make it easier for teachers to assess.

Teachers in learning try to focus students' attention in various ways such as apperception, ice breaking, motivation, and using game applications. Student attention is important so that students can receive learning materials and create an active learning environment. One of his attempts is to use Kahoot. Kahoot can be used in the learning process as an evaluation tool, including pre-test, post-test, practice questions, material strengthening, remedial and enrichment (Fauzan, 2019). The use of the Kahoot application is an option for teachers today to simplify and improve their competence. In addition, Kahoot is equipped with various features that are its advantages.

Several studies that are relevant to this research include research by Damayanti (2021) that the Kahoot application developed by researchers is relevant and interesting to serve as a medium for evaluating student learning outcomes. Research by Daryanes (2020) shows that the Kahoot application is very effective as an evaluation tool in terms of motivation and attention. Research by Seftiani (Seftiani, 2019) shows that through the Kahoot application, the evaluation process can be fun because the Kahoot application is a game that appears on learning platforms used in educational institutions, so it is very suitable for use in the era of the industrial revolution 4.0 which is an era of all-technology. And there are many other studies, such as Benjamin (2020), Rahmawati (2020), and Aflisia (2020). In contrast to previous studies, this research focused on the use of Kahoot as an assessment tool during pre-test and post-test. With the aim of seeing the effectiveness of the Kahoot application on learning, especially during the assessment. The hope of this research is for teachers to consider using Kahoot as an assessment tool.

2. METHODS

This study uses a quantitative approach. The research design used is a one-shot case study. There is only one class that is treated using Kahoot. The population as well as the sample in this study were 34 students in grade 8.5. The instrument used was a questionnaire consisting of 16 questions on the Kahoot application, ten questions on student attention during the post-test, and ten questions on

student attention during the pre-test. The instrument was distributed through Google Forms with a Likert scale with four scales, namely with the criteria of (1) disagreeing; (2) disagree; (3) agree; and (4) strongly agree.

The Kahoot application instrument consists of 16 statements with details of six statements about convenience, four statements about interest, and six statements about appearance (Mohammad & Sari, 2021). Furthermore, the students' attention questions at the pre-test and post-test were 10 statements according to the attention indicators, namely listening, looking, writing or taking notes, reading, making summaries, observing tables, diagrams or charts, remembering, thinking, practising, and asking (Santoso et al., 2020).

The data analysis technique used in this research is the determination of effectiveness by percentage. Data analysis is useful for organizing and sorting data into patterns and categories so that conclusions can be found and test hypotheses. Percentage analysis is carried out to see the size of the proportion of each answer to each question so that the data obtained is then easy to analyze. The percentage technique is through data checking procedures, data classification, data tabulation, calculating the frequency of answers, calculating the percentage of each data obtained and interpreting the data. Determination of effectiveness seen from the percentage of answers and data obtained using the formula:

$$P = \frac{Total\ score\ obtained}{Maximum\ score}$$

$$Program\ Effectiveness = \frac{JThe\ average\ number\ of\ effectiveness\ of\ all\ indicators}{Number\ of\ indicator\ variables}$$

Table 1. Effectiveness Score Interval

Ratio	Category
< 40%	Very ineffective
40% – 59,99%	Ineffective
60% - 79,99	Effective enough
80% >	Very effective

3. FINDINGS AND DISCUSSION

3.1 Kahoot's Effectiveness in Learning

Table 2. The Effectiveness of Kahoot in Learning

Indicator	Amount Respondent				Percentage (%)
	4	3	3	1	
Convenience					**82,5**
It's easy to create quizzes on Kahoot!	13	17	4		81,6
It takes more time to prepare for the quiz on Kahoot! Compared to oral quiz	11	22	1		82,3
It takes more time to prepare for the quiz on Kahoot! Compared to a written quiz	12	20	2		82,3
Internet network is important in Kahoot!!	20	12	2		88,2
Computer equipment is important in making quizzes on Kahoot!	10	22	2		80,8
Projectors and Smartphones are important in implementing quizzes for students	10	21	3		80,1
Interest					**85,6**

Very interested in Kahoot! become an interactive quiz learning media at school	20	12	2		88,2
Using Kahoot! makes me more excited in making quiz	18	14	2		86,7
By using Kahoot! Make learning at school not boring	15	16	3		83,8
With the Kahoot! This makes it very easy for me at the time of taking quiz scores	16	14	4		83,8
Appearance					**79,6**
Menus and facilities (buttons) in the Kahoot! This is easy to understand.	10	21	3		80,1
The image library display button is easy to understand	9	20	5		77,9
The upload image display button is easy to understand	8	24	2		79,4
Youtube link display button is easy to understand	9	24	1		80,8
Multiple choice display on Kahoot! very interesting	8	25	1		80,1
Menus and facilities (buttons) in the Kahoot! It's easy to understand	7	26	1		79,4

In the ease indicator, there are 6 statements, based on table 2, the ease indicator with an average of 82.5% or very effective. These results prove that the Kahoot application is very easy to use by junior high school students. However, this application is very easy to use by students if connected to the internet and assisted by computers, smartphones, and projectors. This finding strengthens the research conducted by Mohammad (Mohammad & Sari, 2021), Manurung (2022), Mafatih (2021), Oktaria (2021), and Perdana (2020) that the Kahoot application is effectively used in learning and gets a very good perception from students. Kahoot is a free learning platform-based game as an educational technology. Launched in 2013 in Norway, Kahoot! now played by more than 50 million people in 180 countries (BBC, 2018).

In the interest indicator there are 4 statements, based on table 2, the interest indicator with an average of 85.6% or very effective. These results prove that Kahoot can attract students' interest in learning because students can see firsthand the scores, rankings, and winners. These results strengthen the research conducted by Mohammad (Mohammad & Sari, 2021), Wigati (2019), Anviani (2022), and Daryanes (Daryanes & Ririen, 2020) that Kahoot can make learning more interesting and stimulate student interest. The Kahoot application as a learning technology platform combines learning evaluation experiences with interactive games and is equipped with a student activity monitoring system (Correia & Santos, 2017). The innovation of the Kahoot platform is also able to help learning evaluation activities to be interesting, interactive, conducive and easy to monitor learning outcomes (Dewi, 2018). The advantage of Kahoot is that the application form is an online quiz that contains an element of competition because the quiz results can be directly seen on the class screen so that it can be used as student learning motivation to earn points, and can be used through various media such as computers, laptops, tablets and androids (Andari, 2020).

Furthermore, the display indicator with 6 statements, based on table 2, the display indicator with an average of 79.6% or quite effective. This result proves that an attractive and easy-to-understand display makes students not bored in applying Kahoot in learning. Kahoot itself is a game application that supports visual demonstrations of students in the learning process. Visual learning prefers information that is presented visually in the form of pictures, diagrams, charts, timelines, films and various other demonstrations. So, the Kahoot application is very effective for learning, especially in

elementary schools. Education in elementary school teachers is considered difficult, and they are reluctant to learn what else is an aged teacher (Lutfi et al., 2020).

3.2 The Effectiveness of Pre-test and Post-test Using Kahoot in Increasing Student Attention

Table 3. The Effectiveness of Pre-test Using Kahoot in Increasing Students' Attention

Indicator	Amount Respondent				Percentage
	4	3	3	1	
Listen	16	12	6		82,3
Looking at	14	18	2		83,8
Write or take notes	5	25	4		75,7
Read	10	20	4		79,4
Make a summary	8	21	5		77,2
Observing chart tables or charts	7	23	4		77,2
Remember	9	22	3		79,4
Think	15	18	1		85,2
Practice or practice	8	21	5		77,2
Ask	16	13	5		83,0
Average					80,07

Based on table 3, the average percentage of the effectiveness of the Kahoot application is 80.07% or very effective. When Kahoot is used, the indicators are very effective, namely listening (82.3%), looking (83.8%), thinking (85.2%), and asking (83%). This illustrates that when Kahoot is used for pre-test it can increase students' attention. When using Kahoot, students listen to every question read by the teacher, see each question, think about answering questions, and ask questions and answers.

Table 4. The Effectiveness of Post-test Using Kahoot in Increasing Students' Attention

Indicator	Amount Respondent				Percentage
	4	3	3	1	
Listen	18	14	2		86,7
Looking at	19	14	1		88,2
Write or take notes	10	20	4		79,4
Read	12	19	3		81,6
Make a summary	6	21	7		74,2
Observing chart tables or charts	9	24	1		80,8
Remember	14	18	2		83,8
Think	18	15	1		87,5
Practice or practice	9	18	7		76,4
Ask	15	17	2		84,5
Average					82,3%

Based on table 4, the average percentage of the effectiveness of the Kahoot application is 82.3% or very effective. When Kahoot is used, the indicators are very effective, namely listening (86.7%), looking (88.2%), reading (81.6%), observing tables (80.8%), remembering (83.8), thinking (87.5%), and asking (84.5%). This illustrates that when Kahoot is used for post-test it can increase students' attention. Students' attention increased when Kahoot was used in the post-test (82.9%), while the pre-test (80.07%) was used. This finding strengthens previous research, namely research of Daryanes (Daryanes & Ririen,

2020), Bahar (2020), and Sari (2022), that the Kahoot application as an evaluation tool is very effective in terms of indicators of student motivation and attention.

Kahoot is a visual type of learning media. As a visual learning media, Kahoot has an attention function. The function of attention is that visual media is the core, attracts, and directs the attention of learning to concentrate on the content of the lesson related to the visual meaning displayed or accompanying the text of the subject matter. Kahoot can be a source of learning and learning media that can meet the demands of the digital generation. Kahoot can also increase interest and support the learning style of the digital generation (Correia & Santos, 2017; Mustikawati, 2019). According to Ibrahim, one of the factors that can trigger students' attention is learning media (Ibrahim & Syaodih, 2010).

The use of Kahoot in learning is part of gamification. A gamification is a learning approach using elements in games or video games with the aim of motivating students in the learning process and maximizing feelings of enjoyment and engagement with the learning process, besides that this media can be used to capture things that interest students and inspire them. to continue learning. Gamification is using game mechanics to provide practical solutions by building specific group engagement (Vianna et al., 2014). In more detail, gamification is a concept that uses game-based mechanics, aesthetics and game thinking to bind people, motivate actions, promote learning and solve problems (Kapp, 2012). Glover (2013) concluded that gamification provides additional motivation to ensure that learners (learners) participate in complete learning activities.

Kahoot application as an educational game is a gamification approach that utilizes game principles and student response system tools to support student learning, engagement, fun, motivation and attention during the learning process. Kahoot can allow students to activate prior knowledge and assess their performance as they play and study the material content of a subject. Educational games can increase students' attention, motivation, engagement, and enjoyment compared to traditional methods (Barrio et al., 2015; Wang & Lieberoth, 2016). The Kahoot Application, as an educational game, also creates student autonomy in learning because students can operate it on their own mobile devices.

4. CONCLUSION

The results of the study found that Kahoot was used in the pre-test and post-test to make students' attention more effective. The average Kahoot in learning is 82.6%, the average pre-test using Kahoot is 80.07%, and the average post-test using Kahoot is 82.3%. Suggestions for further research is to compare with similar applications in learning. Suggestions for teachers, this application is combined with other learning models. The drawback of this research is that the number of treatment classes (experiments) is only one class, so there is no comparison; therefore, the recommendation for further research is to conduct experimental research consisting of experimental and control classes.

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