THE IMPLEMENTATION OF KAHOOT! APPLICATION AS A HOTS-BASED EVALUATION MEDIA FOR ELEMENTARY SCHOOL STUDENTS

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ABSTRACT
The Program for International Student Assessment (PISA) states that students in Indonesia have low-level thinking skills in the international education arena. Certainly, this poses a significant challenge for the government and educators to improve the quality of education. One of the programs undertaken by the Ministry of Education and Culture is the Higher Order Thinking Skill (HOTS) based learning program. Alongside the development of technology and information, this also impacts the education sector, which must adapt to technological advancements. Continuous innovations in teaching and learning, including innovations in assessment methods, are emerging. One way of evaluating learning that teachers can use is the Kahoot application. This research aims to demonstrate how the utilization of the Kahoot application serves as a learning evaluation tool in elementary schools. The research method used is qualitative description with data collection through interviews and questionnaires. The subjects of this research are sixth-grade teachers and students in Public Elementary Schools in East OKU District. The results of the research indicate that the utilization of the Kahoot application represents a new innovation in the field of education. The Kahoot application makes it easier for teachers to assess students' problem-solving performance and creates an enjoyable learning process that encourages students to think critically.
Keywords: Evaluation, HOTS, Kahoot, Elementary School.

ABSTRAK
Program for International Student Assessment (PISA) menyatakan bahwa siswa di Indonesia memiliki kemampuan berpikir yang rendah dalam dunia pendidikan internasional. Tentunya hal ini memberikan tantangan besar bagi pemeintah dan tenaga pendidik untuk meningkatkan kualitas pendidikan. Salah satu program yang dikerjakan oleh Kementerian Pendidikan dan Kebudayaan adalah program pembelajaran berbasis Higher Order Thinking Skill (HOTS). Seiring dengan perkembangan teknologi dan informasi, juga berdampak pada dunia pendidikan yang harus bisa beradaptasi dengan perkembangan teknologi. Terus bermunculan inovasi-inovasi dalam pembelajaran, termasuk inovasi dalam evaluasi pembelajaran. Salah satu cara evaluasi pembelajaran yang dapat digunakan oleh guru adalah aplikasi kahoot. Penelitian ini bertujuan untuk menunjukkan bagaimana pemanfaatan aplikasi kahoot sebagai media evaluasi pembelajaran di sekolah dasar. Metode penelitian yang digunakan adalah deskriptif kualitatif dengan pengumpulan data melalui wawancara dan kuesioner. Subjek penelitian ini adalah guru kelas VI dan siswa di Sekolah Dasar Negeri di Kabupaten OKU Timur. Hasil penelitian menunjukkan bahwa pemanfaatan aplikasi kahoot ini menjadi inovasi baru dalam dunia pendidikan. Aplikasi kahoot

memudahkan guru untuk melihat hasil pengerjaan soal siswa dan menciptakan proses pembelajaran yang menyenangkan dan mendorong siswa untuk berpikir kritis.
Kata Kunci: *Evaluasi, HOTS, Kahoot, Sekolah Dasar.*

1. Introduction

Education is a component of individuals' and society's life that has a dynamic nature, where the demands for personal competencies continuously change over time. Entering the digital era, education is directed towards fostering changes and improvements related to three aspects: quality enhancement, eligibility, and competitiveness (Hamidah & Wulandari, 2021). These changes bring demands for educational providers to possess wise and solution-oriented attitudes as a preparation to enhance the quality of education, thus producing intelligent future generations capable of nurturing students to be proficient in critical and creative thinking and able to compete on a global scale. This is an integral part of the 21st-century education goals, including education in Indonesia.

At present, the education curriculum in Indonesia places a strong emphasis on nurturing human resources in the cognitive, affective, and psychomotor realms. In terms of cognitive development, students are encouraged to cultivate critical, logical, creative, and analytical thinking abilities to effectively compete on an international scale. The integration of Higher Order Thinking Skills (HOTS) has been a focal point in the curriculum since 2013. HOTS necessitates an expansive thinking approach that enables individuals to confront novel challenges, apply fresh information or knowledge, and manipulate data to arrive at viable solutions in unfamiliar circumstances (Heong et al., 2011).

Higher Order Thinking Skills (HOTS) is an assessment instrument used to predict students' competency in higher-level reasoning, which involves critical thinking skills beyond memorization, recitation, and restating information without processing (Widana, 2017). Higher Order Thinking Skills (HOTS) refer to advanced cognitive abilities that require individuals to engage in critical, creative, and analytical thinking when approaching information and data to solve problems (Setiawati, 2019). This indicates that the acquisition of critical thinking skills at an advanced level necessitates the implementation of learning techniques that cater to engaged students, enabling them to observe, inquire, analyze, experiment, and communicate (Khotimah, 2019). Learning that demands students to think critically can be done more interestingly in the era of science and technology development.

A student can be said to have reasoning skills when they can apply their knowledge to new conditions they have never encountered before. This ability is often referred to as critical thinking (Fauzi & Abidin, 2019). Therefore, it is important to develop students' critical thinking skills in learning. One of the current issues is that Indonesian students have a low level of critical thinking skills in the international education landscape, as indicated by the Programme for International Student Assessment (PISA) conducted by the Organisation for Economic Co-operation and Development (OECD). The assessment concluded that Indonesian students ranked 64 out of 70 countries in terms of science and mathematics abilities (Suwarna & Fatimah, 2018). Undoubtedly, this poses a significant challenge for educators to enhance their teaching skills in order to improve the quality of students' learning and meet the demands of 21st-century education (Suwarna & Fatimah, 2018).

Some researchers have conducted an analysis of Indonesian students' abilities in solving PISA standard questions. In their research, Kurniati, Harimukti, and Jamil discuss the high-order thinking skills (HOTS) of students in solving PISA standard questions, with indicators such as logic and reasoning, analysis, evaluation, and creativity. This study also aims to analyze students' abilities in solving PISA questions but is limited to one aspect of their abilities, which is critical thinking (Kurniati et al., 2016).

In today's digital age, technology has made it possible to accomplish tasks effortlessly, including learning. Utilizing technology as a learning medium can enhance students' educational experience by incorporating captivating visuals that foster enthusiasm and unlock their potential (Firmadani, 2020). The utilization of technology will simplify the process of delivering instructional materials for teachers, enhancing learning outcomes to become more effective and efficient. Moreover, incorporating technology in the educational journey will foster innovation among teachers, enabling them to cultivate an engaging learning environment.

Efforts to improve the quality of students can be made through enhancing the learning process and the quality of the assessment system (Latifah et al., 2023). Assessment, also known as evaluation, is a means to evaluate the learning outcomes that have been achieved or as an effort to obtain information from the learning activities and academic achievements. In this context, assessment aims to measure the extent to which learners achieve good performance (Idris & Asyafah, n.d.). Learning outcomes are evaluated from various aspects, and each aspect has different assessments, such as the cognitive aspect, which is measured based on their knowledge. In conducting an evaluation of students' learning outcomes, an assessment instrument is required. The assessment instrument is a measuring tool that plays a vital role in determining the effectiveness of the learning stages, including the progress of students' learning outputs, which encompass aspects of cognitive, affective, and psychomotor domains, both as a group and as individuals (Desilva et al., 2020).

In the 21st century, the assessment activities are not only conducted conventionally but have also seen significant development with the emergence of applications that can be used as tools for assessment, leveraging Information and Communication Technology (ICT) media (Widiyawati et al., 2022). Besides being a learning tool for students, the use of technology can also be used as a means of assessment. The use of applications as an assessment tool certainly helps teachers in providing good assessments to students (Wahidah et al., 2019). The ability of students' higher-order thinking skills can be developed if students are able to solve HOTS-based questions. Therefore, an assessment instrument is needed that can support this. The presence of telecommunications tools makes it easier for students and teachers to access information so that at any time and every moment they can easily search for various evaluation materials and methods by utilizing information technology (Lutfi et al., 2020).

Currently, there are many learning and evaluation media that can be used, one of which is Kahoot (Sun'iyah, 2020). Kahoot is an assessment platform that can be used in learning activities such as holding practice questions, quizzes, post-tests, pre-tests, enrichment, remedial, material strengthening, and others (Warsihna & Ramdani, 2020). The Kahoot application has four features, namely discussion, quiz, jumble, and survey. Uniquely, the answers will be represented by images and colors. Students are asked to determine the color or image that represents the correct answer (Bahar et al., 2020). The Kahoot application not only has advantages in the learning process, but also becomes one way to provide a learning experience that can increase the participation of students' collaboration in learning. The Kahoot application has advantages, including questions presented in the Kahoot application have a limited time allocation. Because of the time limitation, students are trained to think quickly and accurately in solving problems with this application (Lisnani* & Emmanuel, 2020).

According to (Iwamoto et al., 2017), the use of the Kahoot application is very helpful in the world of education because this application is not only fun but can also be used as a game and learning tool. To use the Kahoot platform is very easy because students do not

need to download the application. Kahoot can be easily accessed via the web, students only need to enter the room ID pin and Kahoot can be used. The way to use Kahoot according to (Irwan et al., 2019) is 1) through a computer or smartphone, students open the Kahoot.com website, 2) after the Kahoot page opens, enter the PIN in the "Game Pin" column. The PIN is obtained from the PIN in the question package that has been created by the teacher, which consists of 6 digits, 3) after filling in the PIN, then fill in the student's name in the "Nick Name" column as the identity of the student who is participating in the assessment using Kahoot, 4) after filling in the Game Pin and Nick Name columns, the student is automatically registered as a participant in the assessment, 5) then the student answers the questions displayed on the projector screen that have been displayed by the teacher through the computer or smartphone use.

According to (Lisnani* & Emmanuel, 2020) in the *analysis of the use of the Kahoot application in science learning*, it was found that the use of the Kahoot application in the teaching and learning process is very enjoyable because Kahoot has a feature of background music that makes students not bored. Students also feel challenged because they have to race against time in answering questions that require them to think quickly and critically. They hope that Kahoot will always be used in every learning evaluation.

Meanwhile, according to (Ma'ruf & Alfurqan, 2022) in the *Analysis of the Use of Kahoot Application as Digital Game Based Learning in the Evaluation of Learning of Islamic Education in SMA Negeri 2 Padang*, it is stated that the use of Kahoot is done after the learning process is completed to see students' understanding of the learning that has been conveyed. From these results, the teacher can find out which material is considered difficult for students and the results of the Kahoot game can be used by the teacher as an added value for students.

This research provides an update by highlighting the effectiveness of using the Kahoot application in fostering higher-order thinking. Therefore, the learning evaluation is not only limited to the application of concepts, but also aligns with PISA questions that demand critical reasoning and problem-solving skills with an engaging interface.

The main objective of this study is to assess the efficacy of utilizing the Kahoot application as an evaluation tool based on Higher Order Thinking Skills (HOTS). It aims to identify the strengths and weaknesses of using the Kahoot application for HOTS-based assessments. The anticipated outcome of this research is to provide valuable insights and make a significant contribution to the field of education, particularly regarding the implementation of technology-driven assessment tools.

2. Method

This study employs a qualitative descriptive research approach to gather insights into the utilization of Kahoot as an assessment tool. Qualitative research methods are employed to explore the authentic context of the subject matter. Triangulation is employed as the data collection technique, and the analysis of data is conducted in an inductive/qualitative manner. The findings of qualitative research focus on deriving meaning rather than making generalizations (Sugiyono, 2018).

The stages of data collection, reduction, presentation, and drawing conclusions are the first three stages of data analysis according to Miles and Huberman (Sarosa, n.d.). The process of evaluating the reliability of research findings involves several steps, including conducting careful and accurate research and consulting with colleagues and experts on the topic.
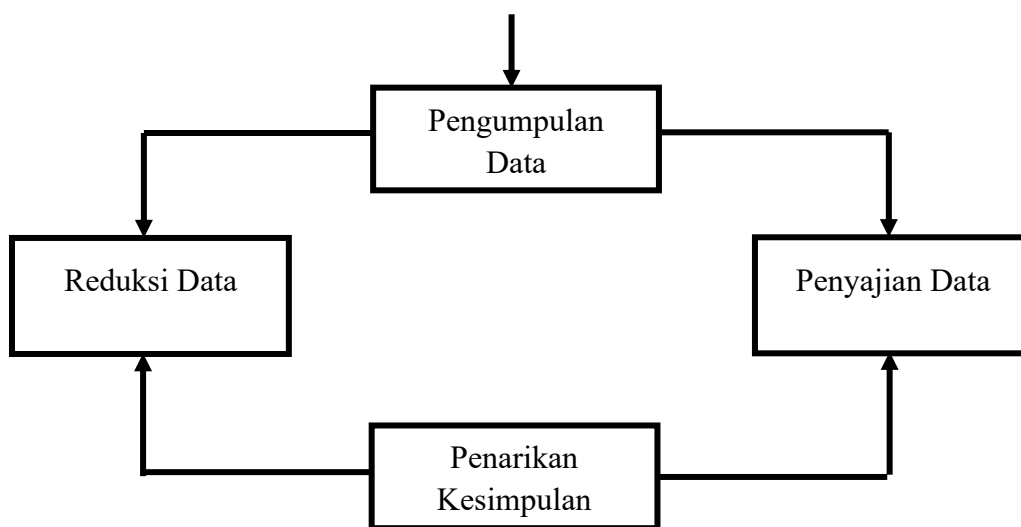
Figure 1. *langkah-langkah Penelitian Kualitatif*

The research was conducted at a public elementary school in East OKU Regency, and the subjects of this study were sixth-grade teachers at the school. Research data was collected through open interviews with teachers who used the Kahoot application in the learning process, and questionnaires were distributed to students as a support for the interview. The aspect that is being investigated is how the application of Kahoot as an assessment instrument is implemented.

Table 1. Participant Name

Number	Participant Name	Position	Gender
1	SR	CT	M
2	AF	S	M
3	AH	S	M
4	AR	S	M
5	DA	S	F
6	DS	S	F
7	EDS	S	F
8	FHZ	S	F
9	GF	S	M
10	ID	S	F
11	JAMA	S	M
12	KIS	S	F
13	LD	S	F
14	LS	S	F
15	MF	S	M

16	NM	S	M
17	NQ	S	F
18	PC	S	F
19	RE	S	M
20	SF	S	M

3. Results and Discussions

3.1 The use of Kahoot application in learning

The implementation of the Kahoot application for learning purposes at this school commenced amidst the Covid-19 pandemic. During that period, the school sought out enjoyable and user-friendly alternative approaches to education, as mentioned by Mr. SR in an interview :

> *"I started using Kahoot as a learning evaluation media during the Covid-19 pandemic. At that time, learning was carried out online, so it was less effective and students felt indifferent and uninterested. When teaching, teachers were required to find innovative and effective learning methods that were also fun for students, and I chose the Kahoot application for learning. I knew about this application based on my personal experience when I was in college. According to me, the use of the Kahoot application is very suitable for elementary school children because this application is very fun, which is interesting for students because they work on questions with various features."*

During the Covid-19 pandemic, there was a significant surge in the adoption of online learning platforms. Learning from home had to continue, so technology was needed to support students in understanding the material. Educators need to pay attention to and consider the implementation of online learning strategies (Ahsani & Mulyani, 2022). Furthermore, the main issue that educators need to pay attention to is finding a learning platform that is enjoyable and not boring for students during the teaching and learning process. This is undoubtedly essential to maintain students' concentration while the online learning process takes place, as they can quickly become disinterested and bored. From these various issues, an innovation is required that can be utilized in an effective and enjoyable teaching and learning process. Several digital learning platforms have emerged, including Kahoot. Kahoot is a platform for educational games that enables the creation of interactive games or quizzes, facilitates discussions, and conducts surveys. Therefore, it can be inferred that Kahoot is a free game-based learning application utilized for evaluating students' learning achievements (Jannah & Pahlevi, 2020).

During the Covid-19 pandemic, learning evaluations had to be done online in accordance with government recommendations (Fitrah & Ruslan, 2021). Therefore, this requires teachers to develop their abilities to apply technology in learning. To assist in the learning process, an effective medium is needed to enhance the learning outcomes of the learners (Putra & Afrilia, 2020). One innovative learning medium that can be utilized is gaming media, which can enhance the students' learning motivation and consequently improve their learning outcomes. The use of Kahoot by teachers is the right choice because it is able to follow the development of the times. The Kahoot application is very helpful for learning to be more engaging, not boring, and to enhance students' creativity and activeness.

3.2 Teacher planning in utilizing kahoot as an evaluation medium

The teacher's planning in learning related to learning evaluation using Kahoot in elementary schools, which is the location of the research, is to determine the appropriate use of Kahoot as an innovative learning evaluation media.

"The use of Kahoot is very easy, we need to create questions first, but the question-making must be in accordance with the learning indicators that we want to achieve, and apply HOTS-based questions to improve students' critical thinking skills. After the teacher creates the questions, it is only necessary to share the room ID with the students, and the students simply log in through the web by entering the ID and name."

Evaluation is the procedure of comprehending or assigning significance, acquiring, and conveying information for the direction of individuals responsible for making decisions. Evaluation involves gathering data extensively and comprehensively concerning the students' capacities, in order to ascertain the causes, effects, and outcomes of their learning experiences, which in turn can foster and enhance their learning abilities (Riadi, 2018). Planning in learning evaluation is defined as a set of interrelated components that collaborate in making planning, implementing, and reporting the results of evaluations carried out in elementary schools (Maftuhatin, 2014).

There are several aspects of Kahoot related to HOTS, namely: 1) Analysis, in Kahoot, students are faced with questions that require them to analyze information. These questions involve problem-solving, comparing concepts, or interpreting data. 2) Synthesis, stimulates students' ability to synthesize or combine different information to create new understanding. 3) Evaluation, questions in Kahoot require students to evaluate correct answers or choose the best answer among various options. 4) Creativity, Kahoot can also encourage students to use their creativity in providing solutions.

Based on the above explanation, planning in learning evaluation using Kahoot in schools, teachers make planning first and analyze the question indicators to be achieved, so that the learning evaluation process can be carried out, so that teachers can make decisions related to student learning outcomes and can be used to make decisions.

3.3 Application of kahoots as an assessment instrument

In one of the elementary school's learning activities, Kahoot application was used. The implementation of the Kahoot application went smoothly and the students were very enthusiastic because it was a new experience for them to apply technology in the learning process.

"In the application, students were asked to answer questions that the teacher had prepared, and to answer quickly and accurately because the Kahoot game system requires them to answer correctly and quickly to get high points. This was a challenge for the students because they had to be really careful and race against time. In Kahoot, music can also be inserted so that students do not get bored during the learning process. The presentation of answer choices can also be colorful and accompanied by pictures. The Kahoot application immediately shows who answered faster and more accurately. The students' scores can be seen immediately, making it easier for the teacher to correct wrong answers. The students responded positively to the use of Kahoot, and learning using Kahoot was popular among students because it was not boring."

Kahoot has the potential to be utilized across different subjects, depending on the desired learning goals. In this particular study, the teacher applied Kahoot in almost every

subject, including English. There are several ways to apply Kahoot in English lessons, including: 1) Vocabulary quizzes, such as making questions about word meanings, synonyms, antonyms, and so on. 2) Pronunciation and listening, the teacher makes questions in the form of sound or dialogue and students have to choose the answer according to what they hear. 3) Language creativity, the teacher can make questions that encourage students to make sentences or dialogues in English or write stories in English. The quiz that is provided is diverse, not only including pictures but also allowing the insertion of videos to support High Order Thinking Skills (Salfadilah et al., 2023).

There are several things that need to be prepared before conducting an evaluation using Kahoot, including: 1) educators need to prepare a laptop or computer used to access the application, from which educators can open and control the questions used in the evaluation. 2) educators prepare a projector to display the questions so that all students can see them. 3) students use smartphones or computers provided by the school to access the Kahoot application, and 4) all devices accessing Kahoot must be connected to a stable internet network.

The application of HOTS-based evaluation in the learning process is as follows: 1) Producing modules that can be used as a reference for teachers in making HOTS-based evaluations/questions in the learning process. 2) Improving teachers' understanding in designing, making, and applying HOTS-based evaluation tools in the classroom as an effort to improve the quality of learning. 3) Teachers can independently create and design HOTS-based evaluation tools in the subjects they teach.

Kahoot is considered by educators as a tool to measure students' cognitive levels based on Higher Order Thinking Skills (HOTS) because it offers several advantages in its usage. Firstly, students become more enthusiastic in taking quizzes using the Kahoot application. Secondly, students become increasingly excited and motivated to compete with their peers to achieve the highest scores, fostering a competitive spirit in the classroom. Thirdly, there are time limitations for each question in the Kahoot application. Lastly, educators are facilitated in obtaining quiz or assignment results without having to correct them one by one. Through the Kahoot application, students are able to conduct online quizzes both in and outside of the classroom, with the main purpose being to motivate students (Trajkovik et al., 2018). Student engagement in games integrated into learning will motivate them to actively engage in the learning process, process educational content, and enhance student experiences, self-efficacy, and satisfaction in learning. Furthermore, after each question is answered, the Kahoot application immediately displays who answered the quickest and most accurately (Licorish et al., 2018). This means that the Kahoot application provides immediate feedback, thereby increasing student motivation (Daryanes & Ririen, 2020).

The results of data collection using a questionnaire showed that all students had used Kahoot in learning. The communication tool used was 85% using a cellphone, indicating that in the implementation of learning, students were already using technology, which could be applied well in learning so that students could learn anywhere. The use of Kahoot as an effective learning evaluation medium made students happy, as seen from the response given through the questionnaire, which revealed that 100% of students felt happy using Kahoot. So, from the response above, it reveals that the Kahoot application can be used as an effective, enjoyable, and motivating interactive quiz learning media. In the learning process, children are trained to use technology as a learning tool, and operating Kahoot also enhances the motor skills of the learners.

3.4 The obstacles faced in using Kahoot

It cannot be denied that every innovation faces challenges. For the use of Kahoot application itself, it is considered quite easy, but sometimes students still experience some difficulties in using the application because they need time to adjust to the use of technology in the teaching and learning process.

"*During the use of Kahoot, there are no difficult obstacles. The only thing is that the smartphone device must have a stable internet connection, and not all students have smartphones to access Kahoot, so it needs to be done alternately, but this can still be overcome because only a few students are affected. In addition, the use of Kahoot requires a projector to display questions and student answers. And not all features in Kahoot are free, access to Kahoot is quite limited*".

Obstacles encountered during the learning process may diminish students' enthusiasm for education. The crucial elements for achieving successful learning through technology encompass the presence of adequate facilities and infrastructure. Online learning entails the conversion of traditional education into a digital format, thereby presenting distinct challenges and opportunities (Abroto et al., 2021). Technology is utilized in education to enhance the caliber of human resources. Diverse learning products and media are incorporated into education to foster innovation in technological education, thereby enabling their application in the learning process.

Drawing from the preceding explanation, the success of implementing HOTS-based learning evaluation through Kahoot heavily relies on the quality of the network. It is crucial for the facilities and infrastructure to be supportive of technology-based learning in accordance with the requirements of the current 4.0 era. This aligns with the findings of a study conducted by Ma'ruf and Al-Furqon, which highlighted the challenges faced by teachers when utilizing the Kahoot application, particularly concerning network connectivity and time constraints.

4. Conclusions

Based on data from PISA, one of the current issues is the low critical thinking skills among Indonesian students in the international education arena, where Indonesian students rank 64 out of 70 countries in terms of science and mathematics abilities. Therefore, improvement in students' critical thinking skills is needed through Higher Order Thinking Skills (HOTS) based learning. Higher Order Thinking Skill (HOTS) based learning assessment can be implemented across all educational levels. The core focus of developing HOTS-based learning assessment lies in nurturing students' critical thinking abilities. Incorporating HOTS applications into learning evaluation methods represents an innovative approach. Numerous applications serve as effective learning evaluation tools, and Kahoot is one example. Kahoot is an assessment platform that can be used in learning activities such as practice questions, quizzes, post-tests, pre-tests, enrichment, remedial, material strengthening, and others. The use of Kahoot applications is very helpful in the world of education because this application is not only fun but can also be used as a game and learning tool. The application of Kahoot becomes a new innovation in the world of education to make learning fun.

Kahoot has many advantages such as being able to be an evaluation media that can be used by teachers in assessing students. Other advantages are that students become more enthusiastic and entertained because the use of Kahoot is very interesting and not boring. However, the disadvantage of this application is that it requires a fast internet connection and other facilities such as gadgets for students to answer questions and a projector so that

teachers can display the results of the questions. Therefore, the use of the Kahoot application as a Higher-Order Thinking Skills (HOTS) based evaluation tool is considered highly appropriate and capable of enhancing the critical thinking skills of Indonesian students.

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