

## COLLEGE STUDENTS' VIEWS ON COMPLETING THE TEST THROUGH GAME-BASED LEARNING

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### Artikel History:

Submitted: 10 November 2022; Revised: 12 November 2022; Accepted: 18 November 2022  
10.34012/bip.v4i1.2708



BIP: Jurnal Bahasa Indonesia Prima  
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ISSN: 2684-6780 (online), ISSN: 2088-365X (Print)  
<http://jurnal.unprimdn.ac.id/index.php/BIP>

**ABSTRAK-** Akhir-akhir ini pembelajaran berbasis game semakin populer di dunia pendidikan untuk meningkatkan partisipasi mahasiswa dalam kegiatan pembelajaran, khususnya pelaksanaan tes. Penelitian ini mengkaji pengalaman belajar mahasiswa dengan melakukan pretest dan posttest melalui aplikasi Kahoot. Penelitian ini melibatkan empat mahasiswa berusia dua puluh hingga dua puluh dua tahun untuk berpartisipasi yang dipilih secara *purposely* untuk memberikan kasus-kasus “kaya informasi”. Diskusi kelompok terfokus dilakukan untuk memperoleh informasi yang kaya untuk memecahkan pertanyaan penelitian dan dianalisis melalui empat langkah: menganalisis data wawancara, menulis memo, membuat laporan akhir, dan mengatur struktur. Temuan ini menyoroti tiga tema untuk menggambarkan seperti (1) pelaksanaan pembelajaran berbasis permainan, (2) tantangan mahasiswa menggunakan Kahoot, dan (3) hasil belajar mahasiswa yang positif menggunakan Kahoot. Penerapan Kahoot dapat menciptakan suasana ujian yang lebih atraktif, seru, dan berkualitas karena mahasiswa menjawab pertanyaan murni dalam pengaturan waktu yang terbatas. Kegiatan ini juga mendorong mahasiswa untuk mengulang materi sebelumnya untuk berpikir lebih cepat dalam menyampaikan jawaban Kahoot!

**Kata kunci:** *Kahoot, Pre and Posttest, Mahasiswa*

**ABSTRACT-** Recently, game-based learning has been increasingly popular in education to increase the colleges' student participation in learning activities, especially conducting tests. This study examined the college students' learning experiences by conducting a pretest and posttest through the Kahoot application. This study recruited four college students aged twenty to twenty-two to participate who were selected purposely to provide "information-rich" cases. Focus group discussions were conducted to obtain rich information to solve the research question and analyzed through four steps: analyzing interview data, writing memos, creating the final report, and organizing the structure. The findings highlight three themes to describe such as (1) the implementation of game-based learning, (2) Students' challenges using Kahoot, and (3) The positive students learning outcomes of using Kahoot. The implementation of Kahoot can

create a more attractive, exciting, and quality test atmosphere because students answer questions purely within a limited time setting. This activity also encourages students to repeat the previous material to think faster in submitting answers to the Kahoot!

**Keywords:** *Kahoot, Pre and Posttest, College Students*

## **A. Introduction**

In the current era of the 21<sup>st</sup> century, human life is increasing with technology, including the education aspect. This technology provides convenience in carrying out and completing the mobility of learning activities and is undoubtedly less time-consuming in learning activities. The presence of technology today cannot be denied has brought the world of education into the era of modernization, where learning activities are increasingly interactive and adequate to carry out. In addition, modernization also provides support for stakeholders to innovate in the education aspect and be able to produce learning outcomes that are better than before (Raja & Nagasubramani, 2018). Currently, prospective teachers must be prepared to integrate technology into their teaching later, so there are many programs that students can join as a platform for online and offline learning. In addition, their learning while studying in class can be a reference for future learning (Tondeur., et al., 2012)

The presence of technology has a positive impact on teachers being easier to convey knowledge to students through applications that vary convenient to student backgrounds. In addition, the use of technology in learning activities in the classroom can create a learning atmosphere that is more interesting and fun for students, especially at the college level. Indeed, implementing learning by integrating technology with modifying the curriculum

content becomes a guide for learning activities; it becomes a fulcrum in the academic setting (Raja & Nagasubramani, 2018). Indeed, integrating technology into education can be successfully implemented and supported by the collaboration of stakeholders, particularly lecturers and students, in the learning process (Means, 2010). Lecturers can engage students to use various applications from students' cell phones for multiple activities, such as facilitating assessments and enhancing student engagement, motivation, and learning (Licorish., et al., 2017). For example, implementing formative tests using game-based learning is increasingly being carried out by lecturers in classroom activities (Ismail & Mohammad, 2017); conducting tests using applications, particularly Kahoot, positively affects cognitive learning outcomes (Huizenga., et al. 2017).

A computer science and game technologist professor first developed the Kahoot application named Dr. Alf Inge Wang and his students at the Norwegian University of Technology and Science (NTNU) in Trondheim in 2006 and officially launched in 2013 (Chiang, 2020). Kahoot application is an adequate learning media for strengthening students' self-confidence in completing learning tasks (Quiroz., et al., 2021). In general, the Kahoot application is used to create learning content, play quizzes, and carry out course tests. This application is easy to access because students can join

directly without creating an account (Wang & Tahir, 2020). Students majoring in health at one of the private universities in Indonesia admit that conducting tests using the Kahoot application can create fun and effective learning (Ismail & Mohammad, 2017). Besides, students majoring in English as a Foreign Language (EFL) in Taiwan also expressed positive attitudes towards the application of Kahoot (Chiang, 2020) students are also motivated to learn (Hou, 2018).

In Indonesia, game-based learning has also been popularly applied to the learning process from compulsory to college, especially in academic units in the big city. However, the implementation of Kahoot still needs to be used in rural areas in Indonesia. Education services must be implemented equally, so the lecturers began applying the Kahoot application to the pre-and posttest implementation.

Thus, researchers are interested in analyzing student experiences using Kahoot applications while conducting the test in rural areas. The researchers chose one of the classes at this Private University because they had implemented Kahoot for a whole semester.

As aforementioned, this research aims to explore the experiences of students majoring in the Education Department at a Private University in Indonesia using the Kahoot application as game-based learning in completing the pre-test and post-test. This study raises a research question “how do the students perceive Kahoot as game-based learning in conducting pretests and posttests in college classes?”

## B. Methodology

### Participants and Research Site

The participants of this study were college students in Private Universities from a rural area in North Sumatra, Indonesia. Those are the fifth semester, with ages ranging from twenty to twenty-two years. They were selected purposely to provide "information-rich" cases from which one can learn a great deal about issues of central importance to the purpose of the inquiry. There was a total of four students participated in this study. They actively participate in taking the pretest and posttest through the Kahoot application.

**Table 1.** Participants' demography

No	Name	Age (Years old)	Major
1	P1	21	Education Department
2	P2	20	Education Department
3	P3	22	Education Department
4	P4	22	Education Department

### Data collection and analysis

This study uses qualitative methods to collect field data and present qualitative narratives—the study designed instruments from the interview. The researchers chose this design to get detailed information from the participants. Researchers and participants conducted Focus Group Discussions (FGD) four times in a conducive place. The discussion schedule is agreed upon according to the agreement between the researcher and participants. Besides, the students also got a total of ten questions for each pretest and posttest with a question form of multiple choice and true and false. The setting time limitation is twenty seconds

for each question; the sum of participants attended fourteen meetings for this study.

The raw data obtained from the field are analyzed qualitatively. In this study, the researchers conducted four steps in collecting and interpreting the results: exploring interview data, writing memos, creating a final report, and organizing the structure (Creswell, 2014).

### C. Result and Discussion

This study conducted focus group interviews to figure out the research question, "how do the students perceive Kahoot as game-based learning in working pretests and posttests in college classes?". In this section, the researchers revealed three themes to describe the data such as (1) the Implementation of game-based learning, (2) college students' challenges using Kahoot, and (3) The positive students learning outcomes of using Kahoot.

#### Implementation of game-based learning

Larson & Miller (2011) proposed that 21<sup>st</sup>-century skills in the classroom are (1) communication and collaboration (2) and expertise in technology which aims to produce a generation that has multi-skills and is ready to join the world of work. If viewed through a micro-scale, this study analyzes the use of technology in classroom learning activities which is a platform for students to be technology literate and think faster. The teacher applies an application named "Kahoot" to record student attendance and scores pretest and posttest. Teacher takes a step further by using technology as a learning media; it creates a classroom environment in the 21st century. One of the characteristics of teachers in this century is understanding available learning resources, mainly Information and

Communication Technology (ICT). Besides, the teacher strives to create learning activities involving students to develop productive relationships among fellow students and student-teachers. It helps the teacher to achieve maximum learning outcomes.

The use of technology in classroom learning activities can be widely applied, including in the implementation of tests (Johns, 2015). Students experience completing the pretest and posttest through the Kahoot application is fun and quick. Before starting the test, students must enter their PIN and name at Kahoot; sometimes, they are challenged to join a creative name. It creates a lively classroom atmosphere and motivates students to finish tests quickly with a good scores. In addition, they feel challenged to think rapidly in submitting each question item. Students can also stimulate their memory of the material learned at previous meetings. This application helps students in making it easier to remember the defense material simultaneously. The student declared:

*"Through the Kahoot application, I am encouraged to reread the learning materials from previous week more often. If I miss something, I will be reminded through this application, even though it is in the form of a question. And it's beneficial" (P4).*

Another student added,

*"The Kahoot application encourages me to be more agile in completing question items with a short time limit. I'm always excited to do tests through this application" (P2).*

The teacher sets questions with limited time to make students more active in

reviewing the learning materials that have been studied. Although sometimes, nervousness makes it difficult for them to think, and they miss the opportunity to answer question items correctly.

The online test system provides an excellent opportunity for students to study harder and avoid cheating. Therefore, students try to gain further knowledge about the material being studied through various sources to improve their understanding. It is clearly seen that the implementation of technology in the classroom can provide wider opportunities for students to find sources of knowledge independently (Larson & Miller, 2011). Students can study independently and look for various sources of knowledge that support the development of understanding of the material. It is one small test of student creativity in helping awareness of learning. The teacher's mission is to develop creative students, one of the learning goals in the 21<sup>st</sup> century (Kaufman, 2013). Indeed, implementing the test using the Kahoot application displays scoring transparency, which shows the pure results of students' hard work. Students can see the correct answer to the question directly. In this application, the scoring system displays the five highest student scores, providing remarkable enthusiasm for the selected students. Students feel pleasure when their names are listed in the top five in each question session, and the three names listed on the highest scores are selected in the final dissection of the test. The students declared:

*"I've been in the top five scoring charts several times. At that time, I felt proud because I could get the best grades and choose the answer quickly compared to other students. I've also been in the order*

*below because I was slightly shaking and nervous in determining the answer choices in different color boxes (P3)".*

Student 4 also added,

*"I was ranked 1<sup>st</sup> and 2<sup>nd</sup> at the end of the post-test session, and I was happy then. But unfortunately, I also lost that position and felt disappointed at not being able to do so. The test implementation with this app is honest because the student's score is immediately displayed on the screen after we answer the question. It's only a matter of seconds before we know the score and the sequence position with our classmates. I like this kind of test system".*

The scoring for the top five is the speed of students choosing the correct answer quickly; the students are required to focus during the test. Through the limited time, the students needed the opportunity to look left and right to discuss. They are challenged to be able to quickly read the question items that show on the front monitor of the class and match the answers on each student's cellphone screen quickly and precisely.

The Kahoot application gives students a new experience in using technology in the learning process. Various learning media with technology can stop boredom in the learning process, especially in completing tests. Moreover, its application can improve students' engagement through learning activities. The students must participate in all class activities and thoroughly understand what they are doing. In the beginning, it was hard for them to understand the learning activities, but as time went by, they could follow. Eventually, it is fun and meaningful to complete the test through the Kahoot application.

*“Through Kahoot application, I don't feel bored completing the question items on the pretest and post-test. Even I feel excited to do it” (P3).*

Implementing the test using the Kahoot application becomes a new prospect in creating a new atmosphere for learning (Zhang & Yu, 2021). This atmosphere can promote better relationships between teacher-students and fellow students and build active communication was created from this active learning atmosphere. Before starting the test, the teacher usually provides detailed guidance on the implementation of the test at that time, and fellow students are given discussion time at a particular time. Usually, students feel more excited when they see each other's nicknames on the screen in front of the class. The teacher allows students to use unique names when taking tests to make other classmates curious. And at the end of the test, the teacher gives them time to state their real names to input the score on the score list.

#### **College students' challenges using Kahoot**

The internet connections affect the smooth running of the test through the Kahoot application (Wang & Tahir, 2020). The students sometimes experienced internet connection difficulties during taking the test through this Kahoot application because it needs an internet connection. Moreover, the data was collected in one of the Private Universities in a rural area with internet network conditions that could be smoother, especially at certain times, such as bad weather. Besides, the internet connection is also influenced by the type of internet data purchased by students. The higher the price and the larger the internet data package purchased, the better the network works.

Unfortunately, the participants purchased the standard data package, which often needed fixing.

The Kahoot application displays question items and answers choices on the screen, which the lecturer usually arranges on the projector screen in front of the class. Students provide answers on each student's cellphone screen, and they allow to submit answers with one opportunity to each question according to the arrangements arranged by the lecturer. Students cannot replace the "answers" submitted, so they are led to be more careful in choosing their answers.

Students experienced obstacles while taking out the pretest and posttest through the Kahoot application, namely time constraints settings made by the lecturer. As a result, students declared that there needed to be more time to answer correctly. The situation is getting increasingly depressing because they fear being wrong in choosing the answer.

#### **The positive college students learning outcomes of using Kahoot!**

Implementing the pretest and posttest using Kahoot can positively benefit student learning by scoring on learning performance, classroom dynamics, students' and teachers' attitudes, and anxiety. Gouveia., et al. (2019) reinforce the concepts learned in a fun, engaging, motivating, and exciting way. This teaching tool helps teachers and students expedite and facilitate learning activities' Implementation. This system recapitulates the students' pretest and posttest scores sequentially after implementing the activities directly so that the teacher does not need to input student scores individually.

Students are encouraged to think quickly and concentrate during the test because they must match the questions on the screen in front of the class and choose the answers on each student's cellphone screen. This application can support students in reviewing subject matter before taking the test so that student learning outcomes improve and they can display better academic achievements at the end of the semester. The learning process with Kahoot application engagement can enhance the quality of communication among teachers and students because the teacher will provide an introduction or description of what students must do at each meeting before starting the test and after as a review of student performance in completing the test.

#### **D. Conclusion**

In the current 21<sup>st</sup> century, learning process innovation is needed to improve students' ability to understand the context of learning to improve students' ability to understand the context of learning to improve learning outcomes, the Implementation of technology, particularly game-based learning, is required. In this study, the lecturer implemented the Kahoot application in the direct test implementation process for college students in the rural area. Lecturers apply it as one of the innovations of learning media for students in facilitating the Implementation of pretest and posttest. At first, the Implementation of this application required adaptation for students to understand procedures and flows using Kahoot, including the speed of time and the system of inputting answers and scoring. Therefore, the students are encouraged to think quickly and concentrate.

Nevertheless, the implementation of Kahoot provides positive benefits to students, such as stimulating college students to be more interactive and actively engaging the learning. It also improves the quality of communication between the lecturer and students. Besides, it adds to the desire of students to review previous learning topics as preparation for taking the test through the Kahoot application.

Conversely, there are two most significant challenges faced by students in completing the test through Kahoot, namely an internet connection that is less stable; the limited quality of cellphones to respond faster is an obstacle in submitting answers to Kahoot, and setting time limits on questions that are too short affect students' success in answering questions.

#### **E. Limitation and Recommendation**

The study has limitations from its use of convenience participants number that explore the college students' experiences using the Kahoot application in conducting the test in one of the Private Universities in North Sumatra, Indonesia. Therefore, the result of this study may not be generalizable. The researchers expect that further study might increase the number of participants and research design produced to get more prominent and varied data valuable in education.

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