An observational study on the use of Kahoot! as formative assessment support in higher education

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Abstract

Kahoot! is one of game-based students' response systems (GSRS) that can be used as formative assessment. Formative assessment helps teacher to identify students who struggle to understand the material, to develop skills that they are difficult to acquire, to meet standards competence. Therefore adjustment should be made to the lesson. However, the use of Kahoot! as formative assessment is rarely implemented in Indonesian universities. To fill this void, this study aims to explore the lecture who uses Kahoot! as a formative assessment in their class. The researcher used the construct by Wiliam & Thompson (2007) to characterize formative assessment. The purpose of this study is to reveal more information of the use of Kahoot! as formative assessment in higher education. A qualitative method was presented in this study. The tutor who used Kahoot! as a formative assessment in their class was chosen as the participant. The data were acquired through observation of the tutor. The research findings found out that through Kahoot! as formative assessment, the tutor could develop activities such as clarifying information, doing classroom discussion and also providing feedback. An attractive finding also found that Kahoot! as formative assessment also provides students self-assessment and self-improvement. The result shows that besides being used as a tool for assess students, Kahoot! also provide learners to clarify the question, classroom discussion and also provide feedback, it depends on how the teacher used and forced it.

Keywords: Formative Assessment: Kahoot!, Higher Education

INTRODUCTION

Current discussion on Game-based students response systems (GSRS) such as Kahoot! tends to spread positive judgment in minimising distractions and tend to improve the quality of teaching and learning in the class (Licorish et al., 2018). Evidence found that it can be used as an online formative assessment that enables nurturing students, to facilitate the main assessment through formative feedback, and to enrich student commitment with valued learning experiences (Baleni, 2015). Moreover, It can be one of the tools that provide feedback for students to help their learning more effectively (Dixon & Worrell 2016). In other words, formative assessment has many benefits in the learning process. Through formative assessment, it helps teachers to know how far students understand the material. Thus, the use of a Game-based students response system (GSRS) like Kahoot! as formative assessments are helpful for teachers and students in learning activity.

In Indonesia's education, many schools have used a game-based students response system (GSRS) such as Kahoot! in the class. The use of gamification Kahoot! is better than using PowerPoint-based quizzes media (Ningrum, 2018). Moreover, the teacher should provide technology-based learning to make the students more interested in learning (Yulita et al., 2018). The use of technology is a media to support students' interest in learning.

The previous studies revealed the use of Kahoot! as formative assessment in higher education is also applied in the developed countries, especially New Zealand. For New Zealand students, when Kahoot! is used as formative assessment, students are able to pay more attention, focus, engage, moreover, it also makes the class more fun and enjoyable (Licorish et al.,2018). In addition, the investigation result found by Omar (2017) showed how the interactivity of Kahoot assessment in Malaysia students makes tests and quizzes to be more engaging and interesting. In similar studies, Kahoot also can be used as an icebreaker in the classroom even though Kahoot has a good potential to assess students' learning outcome. Thus ,based on the studies above, the use of Kahoot as a formative assessment is very helpful in the learning process. However, Kahoot as a formative assessment in higher

education is rarely conducted in Indonesia context. Thus, to fill this gap, the researcher wants to explore the use of Kahoot as formative assessment in higher education. This research was aimed To investigate the use of Kahoot! as formative assessment in higher education. As for the significances of this study, this research is expected to have practical contribution, in a way to explain the use of Kahoot! as formative assessment in higher education. In terms of empirical contribution, this research is aimed at expanding and filling the gap the use of Kahoot! as formative assessment in higher education in the Indonesia context.

METHOD

The setting of this research is in higher education who used Kahoot! as a formative assessment. In the initial plan, the researcher will observe two lectures, however, the researcher faced obstacles. Thus, the researcher only observed one tutor. The participant in this research was the tutor in TESOL Material development. The tutor is using Kahoot! as formative assessment in the class they teach. The researcher observes the tutor twice. The setting of this research is in higher education. The data were collected through observation of the tutor who used Kahoot! as formative assessment in higher education. In this case, the use of Kahoot! was held online, however, the formative assessment was held in the classroom with face to face. Thus, Kahoot was used as a blended learning platform. Therefore, the researcher elicits five key strategies of formative assessment by William & Thompson (2007) ; 1) Clarifying and sharing learning intentions and criteria for success 2) Engineering effective classroom discussions and other learning tasks that elicit evidence of students' understanding 3)Providing feedback that moves learners forward 4) Activating students as an instructional resource for one another 5) Activating students as owners of their own learning. The data collection acquired through a recorder used by the researcher. The instrument was self developed by considering the five key strategies of formative assessment in order to both collect and analyze the data. The table is presented below.

Table 1. The instrument of data analysis

No	Subject	Concept	Component Observation domain
1	Online formative assessment	five key strategies : 1. Clarifying and sharing learning intentions and criteria for success. Example: Sharing exemplars and Thirty-second share. 2. Engineering effective classroom discussions and other learning tasks that elicit evidence of students' understanding. Example: using ABCDE cards and colleague-generated questions. 3. Providing feedback that moves learners forward. Example:comment-only marking, and give students work with plus,minus and equal. 4. Activating students as an instructional resource for one another. Example: peer assessment with pre-flight checklist or rubric and homework help board. 5. Activating students as owners of their own learning. Example: Traffic lighting and using learning logs.	- Clarifying and sharing learning -Engineering effective classroom discussions -Providing feedback -Activating students as an instructional resource for one another -Activating students as the owners of their own learning

RESULTS AND DISCUSSION

Teachers' Implementation of Online Formative Assessment during Kahoot! Quiz

In the use of Kahoot! The tutor in this research used a quiz in the form of multiple choice as Kahoot! platforms. From twice observation, it was found that the tutor never used two other features of Kahoot!. Wiliam & Thompson (2007) suggested that there are five key strategies of formative assessment 1) clarifying and sharing learning intentions 2) engineering effective classroom discussion 3) providing feedback that moves learners forward 4) activating students as instructional research 5) activating students as the owner of their own learning. There are three forms of online formative assessment that were implemented by the participant in this research.

Clarifying and sharing learning intentions

According to Gabsdil (2003) clarifying can be useful in order to fix misunderstanding and enable people to learn new words. It was clear that to make students understand the questions, the teacher needs to clarify the question. This concept is most frequently used by the participants in this research. She explained the correct answer after the

questions were raised in Kahoot!. She also described the characteristics of a high quality in work for the students. For example, when there was a question about the generic structure of songs. After the question was answered through Kahoot! The tutor elicited what was the genre of the text, she also gave some examples of the generic structures of a song, whether it was chorus, intro, or bridge. The data are provided below :

> T   :" *Nah ini apa?*"
> Ss   : "*Social Function*"
> T   : "*Social Function. Kenapa social function?*"
> T   : *(appointing a student who answers correctly)*
> Ss   : "*Merespon*"
> T   : " **Yaa- merespon- correct.** *Jadi social function ya, yang kalo tipe soal nya itu- murid nya harus merespon suatu instruction....*"
>
> T   : "*Oke, kalo language structure?*"
> S5   : "*Grammar*"
> All S   : "*Grammar*"
> T   : "**Grammar okay good**. *Number nine, nah ini apa?*"

Based on the data above, The tutor asked students about the question and then the students responded by mentioning the answer. She clarified that the answer was correct by re-mention the answer and also giving a compliment for the student. For example " Right, respond. correct " and " Grammar, okay good ".

> Ss   : *(answering)* "*Structure*".
> T   : " *Iya structure. Kenapa structure?*"
> Ss   : "*Grammar*"
> T   : " *Grammar? pertanyaan nya ini apa ? (cynical)*"
> Ss   : "*Tenses tenses*"
> T   : " *What part, what part kalau dalam lagu itu ada apa sih?*"
> Ss   : " *Intro*"

> T   : *"Ada intro, ada chorus, ada bridge ya kan? ...... Structure lagu itu ada itu kan ada intro ada chorus ada bridge kan....."*
> Ss   : *" Intro"*
> Ss   : *" Intro "*
> T   : *" Nah iya bukan jawaban nya hahaha (laugh), maksudnya ini tuh disuruh nyari .."*
> Ss   : *" Language structure "*
> T   : *" **Ini tuh language structure berarti, dia disuruh nyari mmm salah satu bagian dari suatu kesatuan berarti yang dicari itu language structure..**"*

In the data, When the tutor asked students about the question that was displayed in Kahoot!, the students responded by guessing the answer. However, the tutor had not got the correct answer. Therefore, she clarified the meaning to make students understand the question. Moreover, she also described the characteristics of the correct answer. It aims to make students get a maximal score and also develop their self-regulation. This finding is similar to Mclaughlin & Yan (2018) showed that using online formative assessment (OFA) had two benefits that were in achievement scores and the development of self-regulation.

In using Kahoot!, tutors not only use Kahoot! as a tool for testing, but also as a tool to clarify questions or materials that students did not understand after the question was displayed in Kahoot!. After Kahoot! In use, there was a process of guessing the answer, clarifying the characteristics of the correct answer and negotiation between students and tutors. It can be concluded that Kahoot! can be used as an online assessment, however, it depends on how the teacher used and forced it.

Engineering effective classroom discussion

According to Schwab (1954) classroom discussion was essential for developing students' ability to think and communicate. This concept is also frequently used by the participant. In this part, the tutor and the students, they discussed a question. The question itself is also analytical.

During the question was shared, the students seemed to be shocked. They expressed through shocking statements in Javanese like "Waduh" which means o gosh!, and also a kind of complaint, such as "*Ya Allah panjang banget*" which means Oh my God! What a long question!. Moreover, they also expressed that they felt giving up, such as " *Bodo amat lah, kaya UN aja* " which means I don't care, it feels like I'm taking the National Exam!. From the data shown, the expression form the students indicates that they did not feel enjoyed during the question was shared. It can be assumed that Kahoot! produce students engagement and enjoyment, however, it depends on the difficulty level of the question that teacher gave.

This finding is different with empirical study by Wang A.I (2015) that suggested in both cases between students from short-term and long-term use of Kahoot!, students respond positively to gamification as formative assessment in the classroom. Based on the data above, students gave a negative response like complaining,shocking and also felt giving up.

Ss : " *Two* "
T : " *Two. Which one?* "
Ss : " *Hmmm analyze and ....* "
T : "***Analyze and?** .....*"

Ss : " *Hmmmm* "
T : " *Able to review. Berarti indikatornya?*"
Ss : " *C6* "
T : " ***Identify atau evaluate?*** "

(Ss : " *Hmmmm* "
T : " *Able to review. So, what is the indicator?* "
Ss : " *C6* "
T : " ***Identify or evaluate?*** ")

Based on the data above, when the tutor asks students about the question in Kahoot!, students try to guess the answer. However, to elicit

the answer she gave stimulus in order to make students easily answer the question by re-mention their answer and also gave the answer choice, for example " identify atau evaluate ".

Ss   : " Grammar "

T   : " Apaa?ada grammar?

Ss   : " iyaaa struktur "

T   : " **Apaaa?ayo keyword nya apa dari pertanyaan nya?kalo dalam lagu itu ada apa?**"

(Ss   : " Grammar "

T   : " What?Is there grammar?

Ss   : " Yea struktur "

T   : "**So, what is the keyword from the question?What part in the song?**")

Using Kahoot! encourage wider participants in the classroom where frequent activities are discussed. To elicit the answer, the tutor gave some questions to make a classroom discussion. So, this way provides students opportunities to think critically. Critical learning processes provide learners with opportunities to be active, think creative and critical as well as being creators of their own perspective.

This finding is supported by Mackey (2009) suggested that online formative assessment tends to grow learners' engagement with critical learning processes that enable opportunities for active, contextualized, collaborative and reflective learning. It means that, learning process that uses critical thinking through classroom discussion has a good impact to make students understand the material, thus, students easily answer the question. After using Kahoot!, there was a process of stimulation, elicitation, and also classroom discussion. It can be concluded that besides being used as a tool for assessing students, Kahoot! also can be used as a media to provide a critical learning process.

Providing Feedback

According to Hattie & Timperly (2007) Feedback has a powerful influence on the learning process, student achievement and also helps to minimize the gaps between the student's performance and understanding. The third prominent component of online formative assessment as implemented by the tutor was providing feedback. This concept is frequently used by the participant. To elicit the answer, the tutor gave students some questions that related to the answer. The data are provided below :

T : "Kenapa?Kenapa itu feature?"
S : "Kak izin ke toilet"
T : "Iya."
T : "Kenapa?kenapa itu bukan structure?"
S2 : "Karena mungkin menggunakan salah satu fitur bahasa"
T : "Apa itu?"
S2 : "Vocabulary"
T : "Hmmm yaaaa. **Jadi vocabularies ya, jadi itu salah satu language features ya**. Terus number nine?"

T : "Social Function. Kenapa social function?"
S2 : "Merespon"
S5 : "Karena @$#$%*^$% (non audible)"
T : (Appointing student) "Yaa merespon correct. **Jadi social function ya, yang kalo tipe soalnya itu murid nya harus merespon suatu instruction**. terus mmm what part of the story in the song. Nah ini tuh apa? What is being thought here?"

In the data above the tutor asked the student about the reason why the answer was language feature and did not structure. The student mentioned the reason that it may use one of the language features which is vocabulary, and the tutor clarified that the answer was correct. She also gave feedback from the answer that vocabulary is one of language features. Moreover, in the data (OFA/PF/OBS1/166), almost the same with the data before. The tutor clarified and also gave

feedback on the answer. Giving feedback on the student answer is indispensable to find out how far the students understand the material that was discussed before. It can be assumed that using Kahoot! In the classroom is to provide feedback on the students' answers. Feedback itself has a function to improve students' learning and also enrich students' motivation.

This finding is similar to Licorish et al, (2018) who found that the use of Kahoot! is to provide students feedback. It is also similar with Baleni (2015) who figured out that feedback is very essential in online formative assessment regardless of what the platforms are.

Self-assessment

The researcher found emergence finding in the data. It means that the data is less suitable with the construct that has been formulated by the researcher. The data that was found is related to the use of Kahoot! as a formative assessment. As usually the use of Kahoot! as formative assessment is used to motivate students, make a class enjoy and also provide feedback. However, Kahoot! as formative assessment has another function to immediate self-assessment. The data are proven bellow :

S   : *"Haduhhhhh…. mampussss"*
S2   : *"Astagaaaa salah,salah pencet"*
S   : *"Apaaa"*
S2   : ***"Aduh aku salah ini"***
S3   : *"Hahahahhaha"*
S   : *"Bodo amat lah, kaya UN aja"*
S4   : *"UN aja bodo amat"*

All S   : *"Ahhhhhhhhhhhhhh"*
S   : *"Monik nih diatas monik"*
S2   : *"Wohh Alfira pemanjat"*
(Next question)
S   : ***"Ini kaya nya yg ini dehhh"***

Based on the data above, when the question was displayed in the Kahoot! and they started to answer the question, students expressed that they had a correct answer or they knew the correct answer. They can assess themselves whether true or false when the result of the question was displayed. This finding is supported with empirical study by Tsai et al, (2015) who found that online formative assessment provides students to immediate self-assessment and self-improvement. It means that through online formative assessment, students are able to conduct self-assessment and self-improvement in their learning process.

CONCLUSION

The researcher investigates the use of formative assessment in higher education. It is found that from 5 key strategies of formative assessment, Kahoot! could accommodate three of them which is clarifying, classroom discussion, and providing feedback. The participants show that besides being used as a tool for assessing students, Kahoot! also provide learners to clarify the question, classroom discussion and also provide feedback, it depends on how the teacher used and forced it. This research is limited to investigate the university that used Kahoot! as formative assessment which might shows different result in compared to other level of education. As an implication, this research could give an option for teacher who would like to used Kahoot! as formative assessment in the class by considering that there are many benefits to be gained. Emergent finding were found that through the observation that the use of Kahoot! As formative assessment provide learners to self-assessment and think critically. Thus, the researcher suggests for further research to explore more about the used of Kahoot! In the classroom because there are still many advantages that could be obtained from this media.

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