

USING MENTIMETER TO ELICIT STUDENTS' RESPONSES IN FORMATIVE ASSESSMENT PRACTICE

Siti Musliha and Pupung Purnawarman

Universitas Pendidikan Indonesia

sitimusliha@upi.edu; pupung@upi.edu

Abstract: The formative assessment considers as a vital component of the teaching and learning process. Then, one of the essential aspects of conducting the formative assessment is the students' responses. As a result, a teacher needs to get all students' responses while doing this assessment. Without their reactions, the teacher cannot measure how far the students' understanding of a particular subject is. Traditionally, teachers use a direct question as a practice of this assessment. Unfortunately, this technique tends to make reluctant students hesitate to give their responses. Thus, confident students will dominate the class. In response to this issue, the Students Response System (SRS) is believed to be an alternative way of eliciting students' responses. Mentimeter, one of the types of SRS, could help teachers to collect all the students' answers at one time. This study investigates how Mentimeter was implemented, what challenges were faced in implementing this platform, and how was the students' perception in using Mentimeter for eliciting their responses. From the findings, based on the questionnaires, observations, and interviews, it can be indicated that there are three challenges of implementing this platform, those are technology-based challenges, teachers-based challenges, and students-based challenges. The students generally give positive attitudes toward the use of Mentimeter as a tool to elicit their responses.

Keywords: *formative assessment, Students Response System (SRS), Mentimeter*

INTRODUCTION

Having a formative assessment of the on-going teaching and learning process is necessary. It aims to know the students' understanding of the lesson. Generally, teachers propose some questions verbally as a practice of formative assessment. Then, students traditionally give responses to the teacher's questions by raising their hands. Unfortunately, this kind of traditional technique could make the students uneasy to state their opinions. In fact, it needs more time to handle it especially in a big class.

One of the aspects that make students unwilling to state their opinions is that they feel insecure when others know their weaknesses. Those who have low extraversion tend to feel anxious and nervous about drawing attention, uttering their opinions, or giving the incorrect response (Martyn, 2007). These feelings make them hesitate to raise their hand and hesitate to answer the teachers' questions directly. Besides, this type of students is reluctant to speak up in front of teachers and classmates because they would rather not be the center of attention (Freeman, Blayney & Ginns, 2006). Consequently, the teachers will get less response or even no answer from the students (Duncan, 2006). Then, the teachers will only have little information about the students' understanding of the topics discussed.

Besides, it will be hard to conduct a formative assessment by using such a traditional technique in a big class. For instance, in a class with 30 students, the teacher will struggle to get an immediate response from all of the students. It is virtually impossible to call on each student individually to get their opinions (Latham & Hill, 2014). It will take a longer period of time if the teacher needs to call the students one by one to get individual response.

Regarding those cases, the teacher needs an innovative way to deliver the formative assessment. One of the alternative ways that the teacher can use is a Students Response System (SRS). SRS is a platform offered by the advancement of technology, involving offline and online.

Scholars assert that SRS is an attractive teaching tool that allows a quick assessment in small, medium, or large classes (Richardson, Dunn, McDonald, & Oprescu, 2015). This feature offers an opportunity for the students to interact during the teaching and learning process anonymously and attractively (Bartsch & Murphy, 2011; Thapar-Olmos & Seeman, 2018). The anonymous way means the students can participate in giving responses without other classmates or teachers knowing their identity (Latham & Hill, 2014). So, it can diminish the students' anxiety and increase their willingness to give responses.

Some literature report that SRS increases student attention, interaction, and engagement in the learning process (Fortner-wood, Armistead, Marchand, & Morris, 2013; Firsing, Yanessa, McGouh, Delport, Po & Brown, 2018; Cheng & Wang, 2019). Besides, the implementation of SRS shows more positive impacts than traditional ways of giving and responding to questions. It shows that the students become more active and fewer students' absence in responding to the teacher's questions (Fortner-wood et al., 2013; Latham & Hill, 2014). In other words, SRS effectively helps the students to overcome their faintness in giving responses to the teacher's question.

Then, one of the applications that applied SRS is Mentimeter. It is an online learning platform that provides teachers to elicit students' responses anonymously. This application offers a flexible and various ways for students to respond using their devices such as mobile phone, I-pad, Laptop, or computer (Skoyles & Bloxsidge, 2017; Moorhouse & Kohnke, 2020). Since the students give responses anonymously, it could sustain the students' engagement during the activity of formative assessment. Besides, the various formats offered by this application could support the teacher to solicit students' opinions in the form of closed-ended and open-ended questions.

Mentimeter as a Students Response System (SRS) is believed to be one of the effective ways to assist teachers in eliciting the students' responses. A previous study has investigated the use of Mentimeter for collecting students' responses in the English for specific Purposes (ESP) and English for Academic Purposes (EAP) classrooms (Moorhouse & Kohnke, 2020). The study reports that the use of Mentimeter in the EAP/ESP classroom gives potential benefits for both the teachers and students, such as increased interaction and engagement between teachers and students. However, the study lacks investigating how to implement it and how the students' perception of using Mentimeter for assessing their learning. Thus, to fill this gap, this present study is aimed to investigate how Mentimeter was implemented, what challenges in implementing Mentimeter, and how students' perceptions in using Mentimeter for eliciting their responses in formative assessment.

METHOD

This present study used a qualitative approach (Creswell, 2012). The data were collected through questionnaires, an observation, and interviews. The questionnaires were spread out to collect the students' perspectives of the use of Mentimeter for eliciting their responses. Then, the observation was conducted during the teaching and learning process using Mentimeter for delivering a formative assessment. While conducting the observation as a nonparticipant observer, the researcher took field notes in details about the process of the teaching and learning. The semi-structured interview was done to know the teachers' views and the students' comments toward the use of Mentimeter for eliciting their responses in the formative assessment. The researcher, during the interview session, remained free to build a conversation, explore, and investigate information that would elucidate and illuminate the research. The teacher and students were interviewed in their first language (Bahasa Indonesia) by the

researcher to make a friendly environment during the interview. With the approval of the information, all the participants were recorded and transcribed, and then transcribed into English too. The participants of this study were an EFL teacher and 25 eighth-graders of one of junior high schools in Jombang-East Java. They were selected as the participants by using a purposive sampling.

FINDINGS AND DISCUSSION

The Overview of the Implementation of Mentimeter

Mentimeter is an online website of the Students Response System (SRS) that teachers can use to create interactive presentations of the question for formative assessment. It provides real-time input from students with live polls and quizzes. It is available in all web browsers. Teachers and students can access it by using a computer or mobile phone. Teachers can create questions for formative assessment in terms of polls, quizzes, or world-could. In creating a test, there are some steps that the teacher needs to follow.

Firstly, the teacher needs to register on the official website of Mentimeter to have an account for creating the test presentation of the formative assessment. It is available at <https://www.mentimeter.com>.

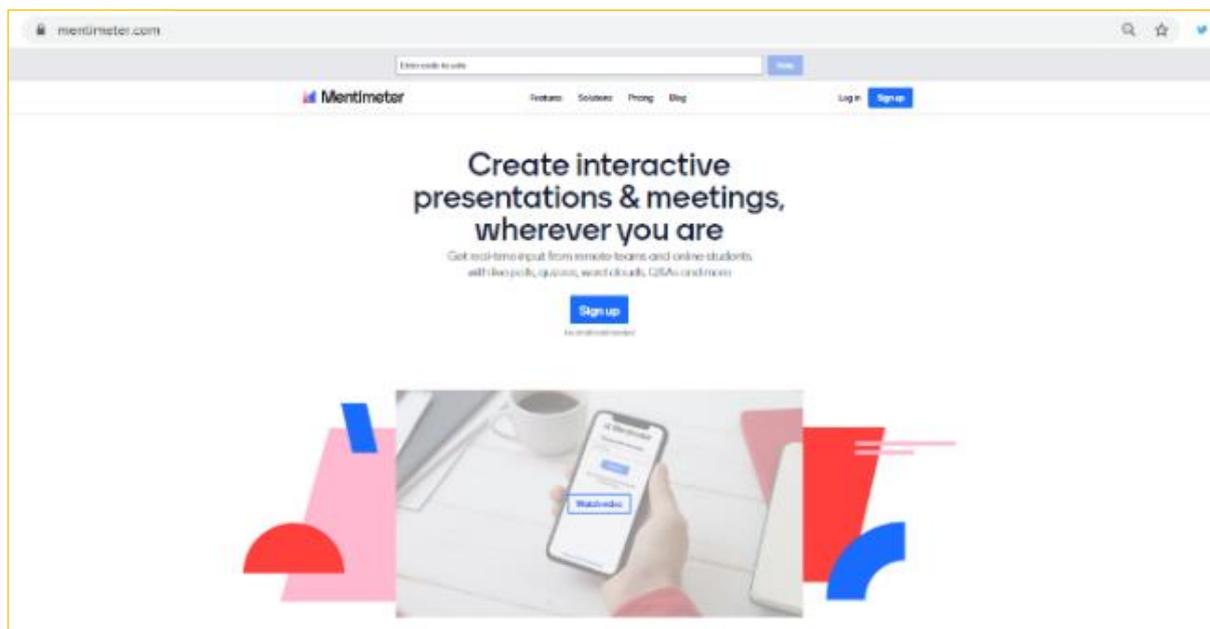


Figure 1. Mentimeter Registering Form

Once the teacher has registered on the website, the teacher can make a new presentation for delivering the test. The teacher could make more than one type of presentation format depends on the need for the test and the teacher's preference. There are various types of question slides that the teacher can choose. Each of these types has its customization options, which are worth looking at when it has been created.

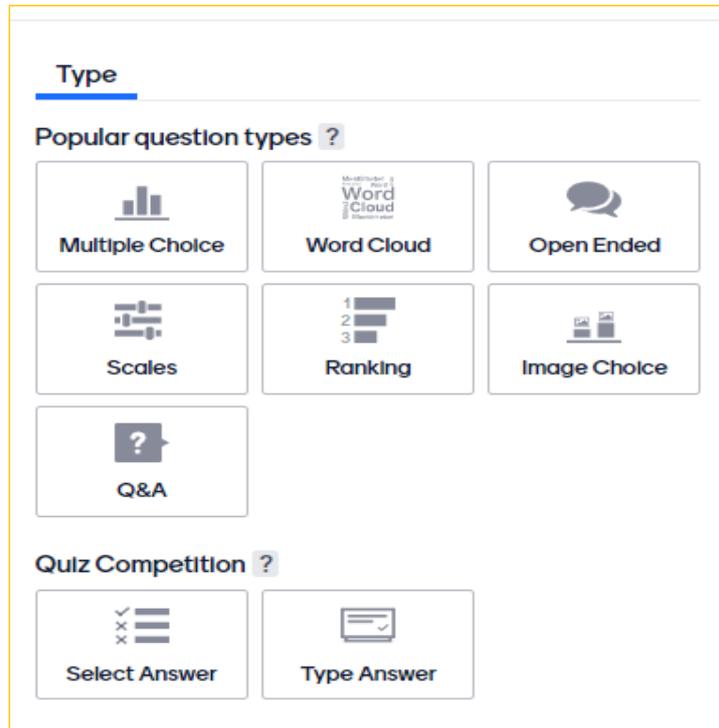


Figure 2. Types of the Slides

The teacher could use up to three quiz slides in a presentation. If the teacher wants to make more questions, the teacher needs to create other new slides. Then, the teacher can specify as many correct answers as the teacher wants and set the amount of time the teacher wants students to answer the questions. When the teacher has settled a certain amount of time for students to answer, it will stop directly when the time has passed. Next, the teacher needs to type the test in the format slide that has been chosen.

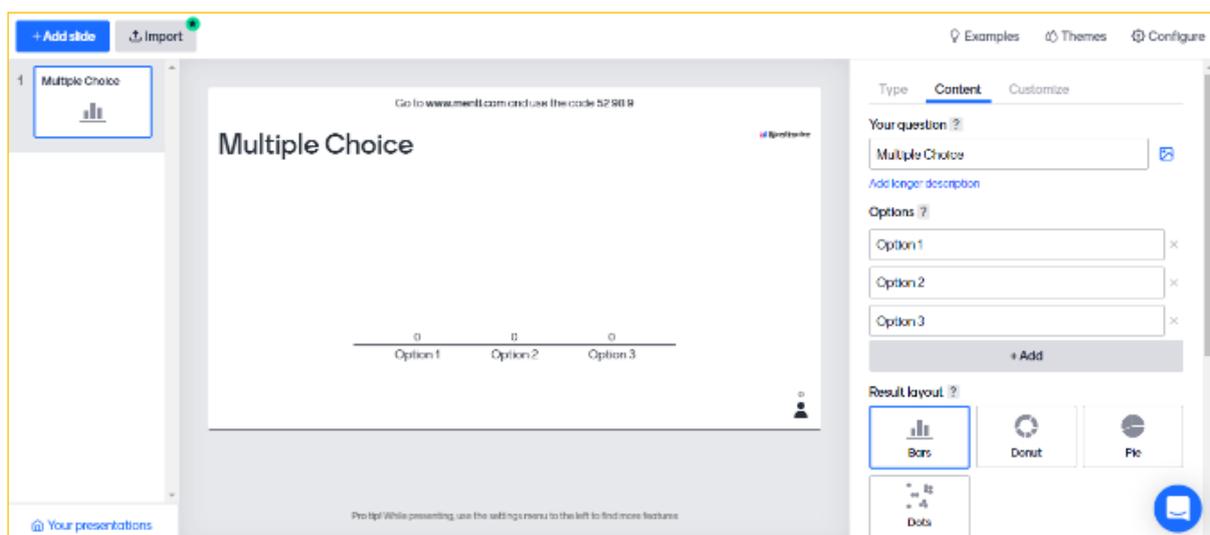


Figure 3. The Slide Format for Typing the Test

After inserting the question into the format slide, the teacher can choose the type of the result display. A multiple-choice format slide can be displayed in terms of bars, donuts, pie, and dots. After the three steps have been done, the teacher could show the presentation using the class computer or projector.

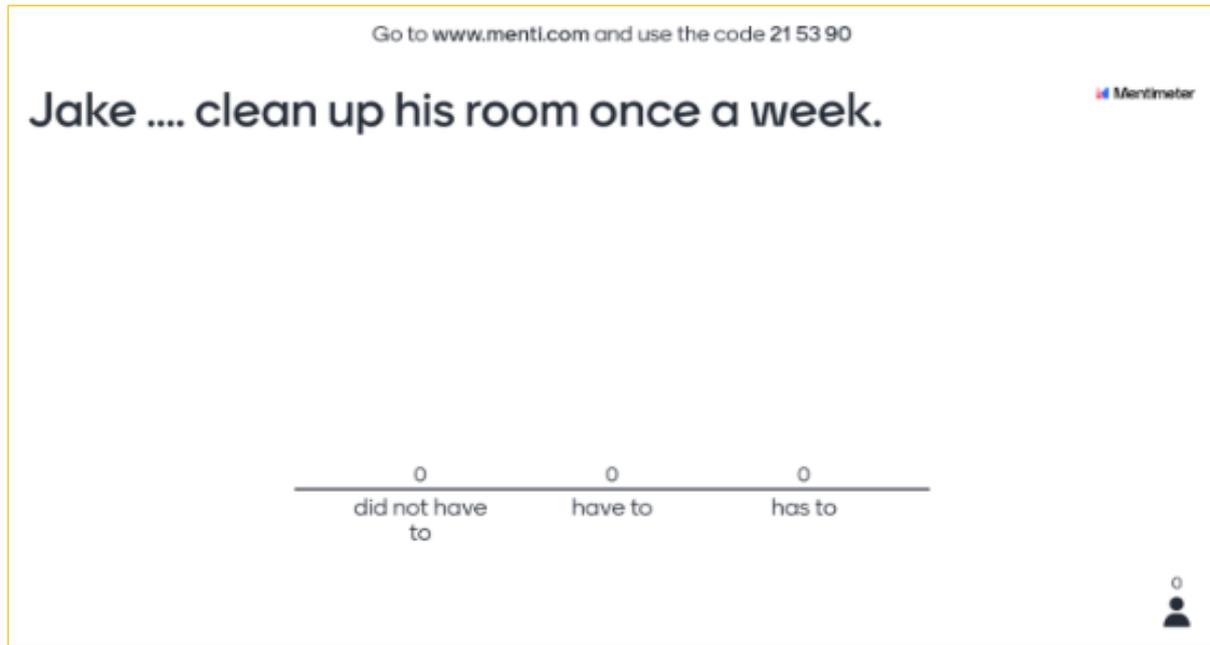


Figure 4. Mentimeter Presentation Form

When the presentation appears, the application instantly shows a unique code (see Figure 4). The unique code is used for the students to enter the application and to give responses to the teachers' questions displayed in the presentation. After the students have the code, they can go to www.menti.com on their device and enter the code to join the test on their device. By using this code, the students do not need to have an account to join the teacher's room. They would directly enter the teachers' room after entering the code. Once they have joined the teacher presentation, the questions prepared by the teacher would appear. At this time, the students require to type their responses.

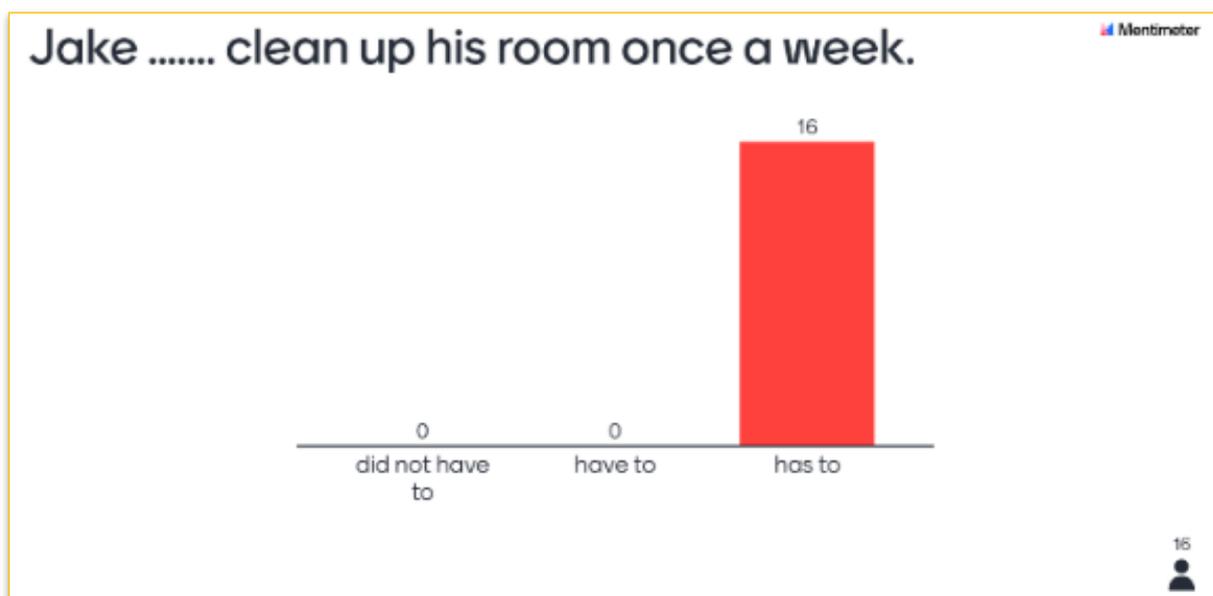


Figure 5. The result of the Students' Responses Display

Then, their responses directly show on the teachers' screen or projector (see figure 5). However, the students' responses remain anonymous. So, the students will not feel worried about

their answers. They could give their responses confidently without thinking of the sentiment of their peers. But they could not edit their answer once they have submitted their responses. The teacher could move to the next question after all the students have submitted the responses for the previous question. At the end of the presentation, all answers would directly save on the system, and the teacher could download them for assessment data.

The Implementation of Mentimeter for Formative Assessment

Implementing Mentimeter for formative assessment helps the teacher to make an attractive test media for the students. Besides, it could increase students' engagement in the assessing process and provide direct feedback on their comprehension of the lesson and support the active involvement in the learning process by discussing the responses given to the questions (Karakostas, Adam, Kioutsiouki, & Demetriadis, 2014; Dunn, Richardson, Oprescu, Christine & McDonald 2013). However, a study argues that using Mentimeter for assessing students learning did not improve students' learning outcomes (Jones, Crandall, Vogler, & Robinson: 2013). In other words, the use of Mentimeter in formative assessment develops the students' self-willingness and engagement in giving responses, but it does not increase the students' learning outcome.

Furthermore, there are many beneficial impacts found in implementing Mentimeter for eliciting the students' responses in formative assessment. First, the students are more accountable to collect their responses as the teacher could monitor how many students have collected responses. So, it would avoid the students' absence in giving responses to the teacher's questions. Second, the anonymity served by Mentimeter helps the students to overcome their insecure feeling of giving responses. This finding is in line with Sullivan's (2009) study, saying that collecting students' responses anonymously assuaged students' anxiety of awkwardness in front of their peers and teachers. It can be stated that Mentimeter can effectively help the students to decrease their distress of giving responses toward the teacher's question. Third, the immediate result displayed of students' responses could help the students determining their understanding of the lesson discussed. It is supported by the findings of Bartsch and Murphy's (2011) research. They state that students were better in doing determination whether they understand or not the lesson being taught by considering the cumulative result of all the students' responses displayed on the teacher's screen.

Despite the benefits of the implementation of Mentimeter, there are challenges faced by both the teacher and the students. The challenges are technology-based, teacher-based, and student-based challenges. First, technology-based challenges, the teacher and students got lost in the network connection, and the server was down during the implementation of Mentimeter since Mentimeter is an online SRS offered by a website engine. Second, teacher-based challenges, there were some aspects that the teacher needed more attention in implementing the Mentimeter, such as the content of the questions. It could be a challenge for the teacher because it demands more effort to prepare before delivering it to the students. It is consistent with the finding of Campbell and Monk (2015) the teacher needs to be more creative in phrasing the questions that would allow students to demonstrate their understanding. The teacher had to make sure that there was no lack of content coverage, and the teacher should also have a plan after having the students' responses. It prevents from lack of responses in discussing the students' responses. The last, students-based challenges, the students were unfamiliar with Mentimeter, so they faced difficulties and got confused in the middle of operating it. Therefore, it needed time to introduce it to the students before utilizing it.

Another challenge of the use of Mentimeter dealt with the cost. The teachers and students need devices (smartphones, iPad, laptops, and computers) for supporting the activity, which

needs an amount of charge for acquiring it. Besides, Mentimeter is not a free online platform, so it requires an amount of money to subscribe to it. If the teacher utilizes this Mentimeter in a free account, there is a limited number in each format of slides. But the teacher can make a new presentation as many as he wants. Consequently, if the teacher wants to have unlimited access to this Mentimeter, he should change it into a pro account, which needs some money more to pay for it.

Students' Attitude toward Mentimeter

Many students were initially uncertain about how to use Mentimeter in giving their responses. Some of them showed confused expressions at the beginning of the tutorial, but at the same time, they showed their curiosity about this online application. Then, during the implementation, however, the students' attitude toward Mentimeter seemed to be positive. Students rated the formative assessment using Mentimeter as more interactive, fun, attractive, and entertaining. The same positive attitudes are also reported by the previous studies using students' response systems such as Mentimeter (Heaslip, Donovan, & Cullen, 2014; Little, 2016; Skoyles & Bloxside, 2017). These studies revealed that the students' performance in giving responses to the teachers' questions improved. They tend to be more active in joining the discussion.

Students also rated the delivery of formative assessment as more helpful for them since they do not need to add their identity for giving responses. Since the students submit the answer to the teacher's questions anonymously, they felt more comfortable using Mentimeter for eliciting their responses in formative assessment. It is in line with the result of the study by Latham and Hill (2014). The study asserts that the students prefer to give their responses for anonymity. On the other hand, the students, because of their youth, have a self-possessed and comfort with using all new technologies since their daily life is familiar with the enhancement of technology. Furthermore, the convenience of using technology is a core aspect of creating pleasant learning activities (Wu, 2015).

Students' are interested in using Mentimeter because of some reasons. First, they find that the use of Mentimeter in formative assessment is fascinating. It is fascinating because they can directly see the result of the overall class responses after they submit their responses. From this case, the students can instantly imagine the right or the wrong answer to the teachers' questions by looking at the result of the submitted answers displayed on the teacher's screen without identifying their own answer. Second, they find that using Mentimeter is efficient to conduct a formative assessment as they do not need to write on any pieces of paper in giving their responses. They only need to type in their devices then the answers will directly be shown on the teacher's screen. Then, they think that the traditional technique of collecting the students' responses is time-consuming. It is time-consuming because they need to write on the paper, or they need to speak up one by one to state their opinion. In line with a study by Olson and McDonald (2004), the study asserts that individualized feedback is laborious. Then, it needs an amount of time to know the overall of the students' responses and require much effort to give feedback directly.

Furthermore, the students agree that Mentimeter is helpful. It helps to overcome their fear in giving responses as they do not need to add their identity when they join the platform and collect their responses. Then, it also supports them to get real-time feedback from the teachers and peers. They do not need to wait another time to get feedback. Therefore, they can use the assessment for self-learning reflection for the next lesson.

CONCLUSIONS

The findings of the present study indicate that Mentimeter has strengths and weaknesses when it is implemented in formative assessment. The strength of using this application is making the delivery of formative assessment more fascinating and efficient. Besides, it makes the environment of the learning process become more interesting, fun, and entertaining. The students can be more comfortable in giving their responses to the teacher's questions as they do not need to share their identity. Then, the weaknesses of using this application are dealing with the internet connection as this application is an online learning platform. Teachers and students need to have a good internet connection to implement this website application.

Furthermore, there are also challenges faced by both the teachers and students in implementing this application. They are technology-based challenges, teacher-based challenges, and student-based challenges. Generally, the students show positive attitudes towards the use of Mentimeter in eliciting their responses formative assessment. They can increase the students' engagement in giving responses in formative assessment and help the students to overcome their anxiety of making mistakes in giving their answers as they submit the responses anonymously.

Some of the considerations in implementing Mentimeter in the teaching and learning process are suggested. First, in utilizing Mentimeter, high-quality connection and technology tools are needed. Preparing that stuff before implementing Mentimeter will increase the satisfactory utilization of using it. Second, to avoid students' challenges in using Mentimeter, introducing Mentimeter thoroughly and pleadingly before the activity is recommended.

REFERENCES

- Bartsch, R. A., & Murphy, W. (2011). Examining the effects of an electronic classroom response system on student engagement and performance. *Journal of Educational Computing Research, 44*(1), 25-33.
- Campbell, C., & Monk, S. (2015). Introducing a learner response system to pre-service education students: Increasing student engagement. *Active Learning in Higher Education, 16*(1), 25-36.
- Cheng, L. T., & Wang, J. W. (2019). Enhancing learning performance through classroom response systems: The effect of knowledge type and social presence. *The International Journal of Management Education, 17*(1), 103-118.
- Creswell, J. W. (2012). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. Pearson.
- Duncan, D. (2006). Clickers: A new teaching aid with exceptional promise. *Astronomy Education Review, 5*(1), 70-88.
- Dunn, P. K., Richardson, A., Oprescu, F., & McDonald, C. (2013). Mobile-phone-based classroom response systems: Students' perceptions of engagement and learning in a large undergraduate course. *International Journal of Mathematical Education in Science and Technology, 44*(8), 1160-1174.
- Firsing III, S. L., Yannessa, J. F., McGough, F. A., Delport, J., Po, M. C., & Brown, K. (2018). Millennial Student Preference of Audience Response System Technology. *Pedagogy in Health Promotion, 4*(1), 4-9.
- Fortner-Wood, C., Armistead, L., Marchand, A., & Morris, F. B. (2013). The effects of student response systems on student learning and attitudes in undergraduate psychology courses. *Teaching of Psychology, 40*(1), 26-30.
- Freeman, M., Blayney, P., & Ginns, P. (2006). Anonymity and in class learning: The case for electronic response systems. *Australasian Journal of Educational Technology, 22*(4).

- Heaslip, G., Donovan, P., & Cullen, J. G. (2014). Student response systems and learner engagement in large classes. *Active Learning in Higher Education*, 15(1), 11-24.
- Jones, S. J., Crandall, J., Vogler, J. S., & Robinson, D. H. (2013). Classroom response systems facilitate student accountability, readiness, and learning. *Journal of Educational Computing Research*, 49(2), 155-171.
- Karakostas, A., Adam, D., Kioutsiouki, D., & Demetriadis, S. (2014, November). A pilot study of QuizIt: The new android classroom response system. In *2014 International Conference on Interactive Mobile Communication Technologies and Learning (IMCL2014)* (pp. 147-151). IEEE.
- Latham, A., & Hill, N. S. (2014). Preference for anonymous classroom participation: Linking student characteristics and reactions to electronic response systems. *Journal of Management Education*, 38(2), 192-215.
- Little, C. (2016). Technological Review: Mentimeter Smartphone Student Response System. *Compass, Journal of Learning and Teaching*, 9(13), 64-66.
- Martyn, M. (2007). Clickers in the classroom: An active learning approach. *Educause quarterly*, 30(2), 71.
- Moorhouse, B. L., & Kohnke, L. (2020). Using Mentimeter to Elicit Student Responses in the EAP/ESP Classroom. *RELC Journal*, 0033688219890350.
- Olson, B. L., & McDonald, J. L. (2004). Influence of online formative assessment upon student learning in biomedical science courses. *Journal of Dental Education*, 68(6), 656-659.
- Richardson, A. M., Dunn, P. K., McDonald, C., & Oprescu, F. (2015). CRiSP: an instrument for assessing student perceptions of classroom response systems. *Journal of Science Education and Technology*, 24(4), 432-447.
- Skoyles, A., & Bloxside, E. (2017). Have you voted? Teaching OSCOLA with Mentimeter. *Legal Information Management*, 17(4), 232-238.
- Sullivan, R. (2009). Principles for constructing good clicker questions: Going beyond rote learning and stimulating active engagement with course content. *Journal of Educational Technology Systems*, 37(3), 335-347.
- Thapar-Olmos, N., & Seeman, S. R. (2018). Piloting Classroom Response Systems in Graduate Psychology Courses. *Journal of Educational Technology Systems*, 47(2), 193-204.
- Wu, Q. (2015). Pulling mobile assisted language learning (MALL) into the mainstream: MALL in broad practice. *PloS one*, 10(5).