

Research article

Technology-based Formative Assessments Implemented by Secondary School English Teachers During Remote Learning

Wiyaka and Entika Fani Prastikawati*

Universitas PGRI Semarang, Indonesia

Abstract.

During the COVID-19 pandemic, teachers had to alter their assessment process for an engaging and productive remote learning. The present study investigates the technology-based formative assessments carried out by secondary school English teachers. To reach that goal, the writers conducted a series of observations and an interview. It was found that English teachers used a few technology-based formative assessment platforms such as Quizizz, Kahoot!, Schoology, Microsoft Office Team, and Socrative. Oral and written feedback was also regularly done by English teachers for supporting technology-based formative assessment practices. The finding of this study also implies the crucial role of digital literacy in supporting the successful implementation of technology-based formative assessments during distance learning.

Keywords: technology-based formative assessment, English teaching and learning, remote learning

Corresponding Author: Entika
Fani Prastikawati; email:
entikafani@upgris.ac.id

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1. Introduction

The implications of COVID-19 necessitate an abrupt transition from face-to-face to online education and learning for many educational institutions. Indonesia also has pledged to adjust the flow of online education with real-world education by facilitating the movement of teaching and learning from face-to-face settings to virtual environments via online learning platforms [1,2]. The Minister of Education and Culture issued a Minister circular letter No 302/E.E2/KR/2020 on the regulation of the learning platform. This Minister circular letter encourages the educational institution to allow students to take control of their teaching and learning processes from their own homes [3]. The changes in learning modeled to the massive involvement of technology in the teaching and learning process [4,5]. The involvement of technology is currently known as educational technology. Educational technology includes both the procedures and tools used to

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solve educational issues and challenges [6,7]. It is essential to employ cutting-edge tools such as computers and electronic devices.

In the previous decades, educational technology has seen progressively increasing rates of advancement [4]. The technologies ICT, blended learning, digital learning, distant learning, and online learning have enabled the development of educational concepts like remote learning, blended learning, digital learning, distributed learning, and online learning [8-11]. Even though there are several different names for integrating educational technology, the primary rationale is that it enhances learning by providing multifidous resources for learning in this era [12-14].

Lately, Emergency Remote Teaching (ERT) is one of the current concepts of the application of educational technology. ERT is a transition to an alternate delivery model due to circumstances that require a temporary shift in instructional delivery [15]. It consists of teaching or education that is delivered remotely through fully remote teaching solutions [16,17], including blended or hybrid courses [18], until the crisis or emergency is over. According to that definition, ERT is significantly different from online learning in which the course is created and implemented based on design considerations. Despite the challenges, ERT can still be improved through assessment because the students' learning may be documented using online assessments.

A significant amount of research has proven the significance of assessment in raising learning. More generally, assessment is a process of gathering data on a student's progress in learning [19]. Assessment can be classified as formative or summative [20]. Despite the equally important roles of those two kinds of assessment, the vast majority of the literature tends to state that teachers should put more emphasis on formative assessment because it provides a daily source of valuable learning evidence that can be utilized for learning improvements throughout the day [21,22]. In that case, formative assessment is regarded as a powerful tool that can help students improve their knowledge. Furthermore, it has been accepted that formative assessment offers several benefits, including motivating students, providing them with feedback on their progress, and enhancing their performance on external tests [23,24].

Therefore, formative assessment should be viewed as the ideal option because it enables students to become more involved with its implementation, enabling students to determine how their learning proceeds [25]. Moreover, the formative assessment presents student-centeredness activities and genuine tasks even it takes more energy and time for the teachers to realize it [26].

Furthermore, according to formative assessment, teachers' activities will be examined so that students can receive ongoing feedback [27,28]. This feedback is an ongoing

process of evaluation to assist teachers in their efforts to improve and adjust their instructional activities [23]. For students, feedback in formative assessment is needed to help students learn and achieve their learning goals. Teachers' early feedback is critical to helping students identify and reconstitute their knowledge and skills [29]. The results are realized if the formative assessment is implemented routinely, which helps students identify their own needs and design their learning activities.

Due to the potential of formative assessment, it is crucial to look over the practice of formative assessment during this remote teaching. Further, the use of technology in its implementation cannot also be neglected. The role of technology in formative assessment practices must be well-captured to see how the English teachers realize their digital competencies in the real context. For those reasons, this present study is trying to capture the implementation of technology-based formative assessment in secondary schools.

2. Research Methodology

This study carried out a case study as the research design to investigate technology-based formative assessments that were conducted by the English teachers during remote teaching. This case study was conducted in fifteen secondary schools in Semarang, Indonesia. There were seventeen English teachers that took part as the subjects of the study. Those seventeen English teachers were chosen purposively since they reported themselves for conducting online assessment during the pandemic of Covid-19. In capturing the implementation of technology-based formative assessments, the writers conducted observation, collected assessment documents, and interviewed the English teachers virtually. Since all teaching and learning were in an online environment, the writers conducted online communication through Zoom application, WhatsApp, and Google form for the data collection process.

The interview session aimed to confirm what has been found in the observation. In this case, the interview was also conducted to see the English teachers' barriers in implementing technology-based formative assessments. Furthermore, the data collected were analyzed descriptively. The data from the interview session were transcribed. Some interview transcripts were in Indonesia, so they were translated into English. Finally, the writers made the confirmation and verification to the English teachers by resending the final and complete transcripts.

3. Findings and Discussion

This current study is intended to investigate the current implementation of technology-based formative assessments in English teaching during the pandemic of Covid-19. According to the teaching and learning observation during one semester and the interview, the English teachers have been reported actively implemented technology-based formative assessment as they need to make sure the students' learning progress. Some tools were also chosen by them to effectively implement the technology-based formative assessment.

3.1. Technology-Based Formative Assessment implemented by the English Teachers

Capturing the current technology-based formative assessment used by the English teachers is the first point of this study. During one semester, the observation was intensively carried out to present their real practice of technology-based formative assessment in online English teaching and learning. The observation was also supported by the interview in which the English teachers were asked to mention three types of technology-based assessments that they mostly used during English teaching and learning. The finding of those technology-based formative assessments is presented in Figure 1.

Figure 1 describes five tools of technology-based formative assessments that have been implemented by the English teachers during the pandemic of Covid-19. According to Figure 1, Quizizz is regarded as the most used technology-based formative assessment (33.33%). Then, it is followed by Kahoot! (23.52%), Schoology (17.64%), Microsoft Office Team (15.68%), and Socrative (9.8%).

According to those findings, Quizizz is preferred by English teachers mostly. There are many benefits that the students receive when using Quizizz, an application built for game-based learning. Quizizz's interactivity helps students get feedback directly on their learning [30]. Therefore, the benefit of incorporating games into learning is clear. Some excerpts of English teachers are also showing proof that they agree on the potentials of Quizizz.

"Quizizz is the most preferable for me because of its direct feedback" (R3)

"I implement Quizizz many times. It is so helpful and interesting. My students say that they are like playing games" (R10)

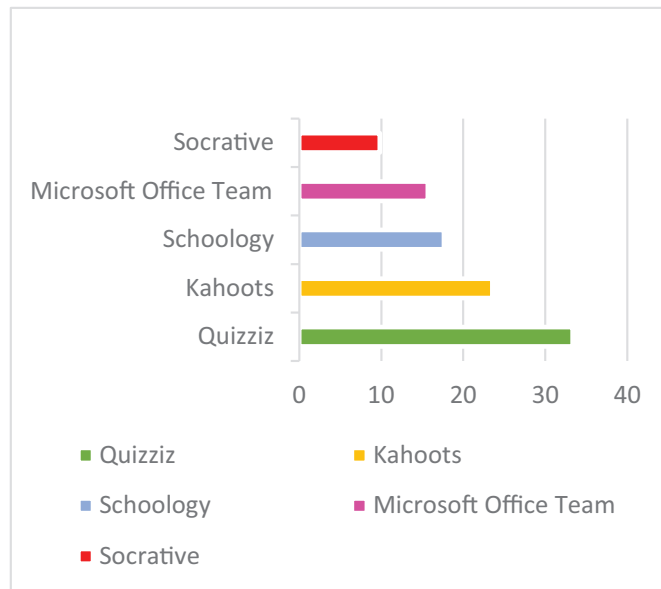


Figure 1: Technology-based formative assessments implemented by the English teachers.

“Quizziz is my choice when I want to arise my students’ spirit of competitiveness. Even, it is not a graded test, but it challenges my students during the teaching and learning” (R16)

In addition to this, it encourages students to get competitive with one another [31]. The leader board feature assists students in knowing where they stand concerning their classmates. On top of that, Quizziz offers students direct, hands-on requests and rapid compensation rather than general future benefits [32]

In the second line, Kahoot! is also implemented by the English teachers during English teaching and learning. Similar to Quizziz, Kahoot! is a game-based platform that leads the students to be active learners during remote teaching and learning [33]. Kahoot! is considered chosen as a great app for quizzes. It is also an educational software designed for enjoyment, appealing to students and teachers alike [34]. A small group of academics views Kahoot! because it allows students to participate with their responses while also integrating them into game-based learning [34,35]. Also, Kahoot! enables teachers to make a tablet or smartphone-enabled quiz. These challenging features of Kahoot! are also revealed by the teachers’ responses in the interview session.

“I love Kahoot! so much for my online formative assessment. It is a game-based learning that let the students in anonymity, so they are not feeling under pressure” (T7)

“Kahoot! is preferable when it is about vocabulary. It lets my students stay focused and engaged in learning” (T12)

In addition to the application providing students anonymity while they answer questions, Kahoot! has a response system where students can respond to the questions

anonymously [34]. Further, in learning English vocabulary, students enjoyed Kahoot! and felt that it helped to improve their overall study attitude. The quizzes and surveys administered in Kahoot! allowed students to perform better in the test and concentrate on the test questions.

Furthermore, [35] underlines how using responses such as games to generate and test students' ideas in testing is important. The results of the study demonstrate that students create more thorough knowledge and are more engaged in the activity by learning through experience and using a personal scoring app like Kahoot! to monitor their progress. These findings are notable because it appears that Kahoot! allowed for deeper learning outcomes even though the class had ended [34]. Point to that goal, constructing questions is a major element that is crucial in the success of its implementation. Instructors need to focus on the significant value of such online tools as Kahoot! when it comes to utilizing tools like Kahoot! for maximum benefit.

The third technology-based formative assessment chosen by the English teachers is Schoology. Making use of Schoology, English teachers are encouraged to better serve their students and improve the educational experience for everyone by sharing the educational resources that Schoology offers [36]. Point to that case, English teachers are expected to encourage their students to utilize the comment section for discussion and for adding, creating, and sharing new or existing supporting materials (for example, audio, video, pages, images). The application is well known among students for its flexibility and ease of use. The hard and fast deadlines for exams are far easier to track on Schoology's platform, where students can take tests in a multitude of locations, given their portability [37]. The potentials and deficiencies of Schoology are also presented by the English teachers during the interview session.

"... In Schoology, my students can give feedback and opinions to others. Moreover, Schoology is easy to use by my students. They also can share their supportive learning sources to other friends" (R8)

"Schoology supports the online formative assessment in my class during this remote teaching. Even we are gathered commenting each other." (R19)

"... The weakness is when it is limited to the registered participants only. Also, it just allows a student uses a computer at the time she/he accesses it"(R13)

Nevertheless, Schoology's shortcomings include the probability of students getting side-tracked, single-user accounts that can only be accessed on one computer at a time, and an inadequate degree of comment and discussion moderation by students [38]. Furthermore, since Schoology is a closed system, which means that people who are not part of Schoology cannot see what is being posted on the network, and students find

it a bit challenging to maintain social media relationships because of their interactions are mediated by teachers.

After Schoology, English teachers also use Microsoft office teams as one of the technology-based formative assessment tools. They admit that peer feedback is quite easy to do when using Microsoft office teams. Since feedback is an integral part of formative assessment [18], Microsoft office teams facilitate the English teachers and students to comment on the other's works through the certain channel created by the English teachers during the teaching and learning [39]. In this case, the English teachers can make more organized and efficient tests using Microsoft Teams, where they can also give feedback and see students' grades [40].

“Microsoft office teams application is helping me in creating online assessment during the learning process. The quick feedback helps my students to adjust their learning strategies” (R7)

The last one that is chosen by the English teachers as the technology-based formative assessment is Socrative. With its excellent and state-of-the-art potential, Socrative is the best option for formative classroom assessment [41]. The English teachers love it because it includes features that traditional paper-based tests do not have, such as providing immediate feedback, picture clues, and more detailed answers to the student's wrong answers. The satisfaction levels described by this study's participants were described using positive words that resemble those used [41] and [42] in their descriptions of Socrative, which both studies' participants had referred to as being useful, enjoyable, and easy.

Finally, the technology-based formative assessments chosen by the English teachers during remote teaching and learning are also influenced by their digital competencies. In this case, the English teachers also admit that this is a common barrier that they face except for the internet connection. The success of technology-based formative assessment that they implement during remote teaching and learning depends on how they keep improving their computer skills and knowledge on assessment.

4. Conclusion

This current study has come up with the conclusion that the English teachers have implemented formative assessments to monitor their students' English learning progress during the remote teaching and learning. The insertion of technology in their formative assessment implementation leads to the need of maintaining digital competence more. The use of some assessment applications reveals that the English teachers keep trying

to improve their instruction to make the students engage in their English learning. Further, this study implies how technology plays a crucial role in the implementation of formative assessment during remote teaching and learning. However, further studies need to explore a larger sample size and the issue of gender and teaching experience as the other variables influencing the successful implementation of technology-based formative assessment in English teaching and learning.

5. Authors' Contributions

The first author contributes to the writing of articles and doing data collection and analysis. Meanwhile, the second author also contributes to completing the draft of the article into the final one. The second author also completes and checks the data collection and analysis.

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