

The Use of Quizizz in Improving Students' Grammar Understanding through Self-Assessment

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Abstract—Quizizz, a web-based assessment tool, has been innovatively used in formative assessment to activate students self-assessment. The need of timely feedback on students' performance is key point of self-assessment which most teachers rarely give due to lack of time. This study aims to present a practical way of self-assessment by making use of Quizizz features to improve student' grammar understanding. The students' improvement on grammar after self-assessment was also investigated. The data were obtained from fourteen eleventh graders of a senior high school in Bandung. The instruments employed were observation to observe how students conducted self-assessment with Quizizz, interview to find out more in-depth data on students' self-assessment practice, and test to investigate students' improvement on grammar. The result shows that students were able to do self-assessment as a result of their ability to identify their strengths and weakness prompted by Quizizz: do the first quiz – receive feedback – review - replay the quiz – do the next quiz. Majority of students showed significant improvement on their grammar understanding depicted from the increasing score among three tests they took respectively. This study is expected to contribute towards the innovation of self-assessment with the use of Quizizz or other platforms by taking the process of understanding into consideration rather than relying on replacing paper-and-pencil-test with gamified quizzes.

Keywords—gamified quizzes; feedback; review; self-assessment; Quizizz

I. INTRODUCTION

The use of ICT-based in education has developed since the mid twentieth century promoting e-learning as the alternative tool facilitating students' learning [1]. The integration of web-based games or mobile-assisted language learning benefited the teachers and students to make teaching and learning more effective [2]. Apart from increasing students' motivation and autonomy, this technological mean also facilitates students to do self-assessment by making use of the instant feedback and review offered [3]. The four most searched and used gamified quizzes are Kahoot, Quizlet, Edupuzzle, and Quizizz. The last platform will be the focus of this study as it is believed as a tool to support students' self-assessment.

Formative assessment plays an important role in ongoing language development to build their competencies and skills to continue helping them with that growth process [4]. One of the foremost formative assessment elements is self-assessment.

Self-assessment is not a luxury, but an essential element of effective learning [5], enables students to activate them as the owners of their learning [6], and develops the skills required for independent learning [7]. By learning from given formative feedback, students learn the value of review, revision, reshaping of work for improvement [8].

However, one of the common obstacles of giving formative feedback is derived from the teachers. As Scherer stressed that due to overly large working hours and dense workload, some teachers are not able to give the timely feedback which is [9], according to Bal, powerful for students to track progress of their goal [10]. Another problem grounded the need to conduct self-assessment is aroused from the students themselves. Narrowing to the focus of this research, which is, self-assessment on grammar, most Indonesian students in Sugeng's study have not possessed consciousness of grammar usage both in spoken and written mode [11]. With this in mind, students need to be taught self-assessment skill by utilizing the feature of Quizizz to help them review their strengths and weakness of learning grammar.

Many studies have been published on gamified quizzes to improve students' learning [3,12-14]. The result shared similar findings that gamification tool has significantly improved students' learning and achievement. Those studies focused on the effectiveness of the implementation of gamified quizzes as formative assessment. However, the practice of how online quiz was conducted in EFL settings in Indonesia was still under study [15]. It is then pivotal to conduct a specific research on providing the practice of the use of gamified tool in relation to the effectiveness of its function as formative assessment. Therefore, this study aims to present a practical way of self-assessment of learning grammar by using feedback and review feature of Quizizz, one of the most widely used gamified quizzes. This study also aims to find out students' improvement on grammar understanding after using the self-assessment with Quizizz.

II. LITERATURE REVIEW

A. Self-Assessment

Organization for Economic Co-operation and Development defined self-assessment as a process when the students are able to find what is missing on their own, figure out what to do next,

and then take responsibility for following through on next steps [16]. To self-assess, according to Sadler [17], the learners close the gap between the present state of understanding and the learning goal. Self-assessment occurs when students review their own work and identify strengths and weakness (self-monitoring), make comparison between their work and their own conception of the next achievement (self-judgment), and decide how they are progressing on their way to goal [8,18]. This enables learners to perform more control of the learning process, to develop their metacognitive aspect. As a result, they activate themselves as the owner of their learning – learn how to learn [5].

There are three pivotal factors to accuracy and reliability of self-assessment should take into account: training, feedback, and clear criteria [2,8]. Students need to be taught how to do self-assessment in terms of stating a clear concept of their learning goals, identifying criteria which are strengths and weaknesses, and procedures.

B. Formative Feedback

Feedback is one of the critical parts of self-assessment. The successful assessment for learning strategies depends on the nature of feedback, its content, and how learners receive and use it. When feedback provides correction or improvement in a piece of work, students value and act it as an incredible motivator [19]. Feedback is given based on students' performance so that they can learn from this feedback to help them review, revise, reshape their work for improvement. The quality of feedback - timely, actionable, comprehensive feedback [9]. Lastly, focusing student attention on specifics relating to criteria for a high quality piece of work is teachable [16].

The quality of formative feedback influences the success how students do self-assessment as emphasized [20]. By analyzing the three phases of conducting self-assessment proposed by Falchikov [2], consisting of pre-, while-, and post, giving feedback on students' performance in pre-self-assessment is pivotal. Wiliam [6] and Scherer [9] formulated the factors that affect whether feedback is effective in terms of constructive, timely, action-oriented feedback. Learners learn twice as fast when they gain constructive feedback, such as specific comments on errors, suggestions to the students about how to improve, and at least one positive remark. Instead, giving praise or compliment has no effect on achievement due to its focus on learners' ego than academic accomplishment. Timely feedback is also crucial as it still matters for students so that learners can use the information to improve their performance. Action-oriented feedback means providing a recipe for future action by giving scaffolding steps to bring learners to the desired goals without explicitly telling them how to move forward.

C. Quizizz and Its Features

Gamification aims to increase participation and motivate users through the use of game elements such as points, leaderboards, and immediate feedback among other things [21]. There are some widely used web 2.0 such as Kahoot, Quizlet, Edupuzzle, and Quizizz. The main focus of this study is the use of Quizizz to support students' self-assessment.

Quizizz is a gamified tool online tool which helps students check their knowledge and progress in learning. In Quizizz, the question order is randomized for each student. With Quizizz, teachers can also assign homework to give students additional practice. Each question ought to be multiple choices with two or four possible answers. Quizizz is free, user-friendly online formative assessment tools which help teachers assess students' language as well as their curriculum knowledge [14].

The main features of Quizizz playing a big role in this study are timely feedback, review section, repeat the test, and take a new quiz. These four features in relation to steps of conducting self-assessment by making use of Quizizz become hierarchical order as suggested by Wang [3] and Gikandi et al. [22]. The content of feedback of Quizizz consists of game summary (score and rank), performance stats (the number of correct and incorrect answers, the number of unattempted questions, average time per question, and the longest streak). Followed by the review section - students are able to review each question in which correct answers for each question can also be revealed. To activate students' understanding after review, they can repeat the test with the same, yet randomized questions. This option, provides students the opportunity to succeed through multiple attempts, resulting in experiential learning, otherwise unobtainable by students doing 'the best' they can with one shot [23]. Lastly, students can take a new quiz with different made-questions but still in the same topic in similar context. This realizes the purpose of self-assessment which is the ability of learners to take responsibility for following through next steps [6].

III. RESEARCH METHODOLOGY

This study employed a case study since first it provides a chronological narrative of events in which this study attempted to reveal the practice of self-assessment with Quizizz [24]. In addition, case study allows the researcher to integrally involved in the case. Lastly, case study can establish cause and effect as this study presented the improvement of students' understanding after self-assessment with Quizizz [25].

A. Participants and Site

The data were collected from fourteen eleventh-grade-students in one of senior high school in Bandung. These participants, apart from in the same level of proficiency, B1+ CEFR level, were chosen since they have used Quizizz for 10 weeks. Being one of bilingual schools in the downtown Bandung with the ample mean of technology facilities and its frequent use to support teaching and learning, the school was selected.

B. Data Collection

To collect the comprehensive data, this study utilized three instruments: observation, interview, and tests. First, observation was conducted to fourteen eleventh-grade-students to observe the natural portrayal of how the students performed self-assessment with Quizizz. The observation focused on the procedures of self-assessment by Quizizz and the students' behavior and attitude during pre-, while-, and post-assessment with Quizizz. In addition to record the data, video-taping the

lesson and field notes were taken. Apart from what to observe, comment sections for the researcher was also added to the field notes.

Second, semi-structured interview was administered to find out more in-depth information which could not be revealed from the observation. Semi-structured interview was selected due to its attempt to gain specific data of students' feeling, perception, and intention on self-assessment by Quizizz correlated with the function of Quizizz features as the prompts of the interview [26]. The face-to-face interview was conducted to fourteen-eleventh-graders students by using Indonesian to clarify the meaning, was voice-recorded, and lasted for approximately fifteen minutes long for each student.

Third, tests were conducted to find out how much the students improve their grammar understanding after doing self-assessment on three quizzes. To gain students' score, there were three tests they took respectively. The topic was 'future form' with will, be going to, and present continuous with the objective that students were able to understand the of use future forms in the appropriate context. To avoid the tendency of other intervening factors to the improvement, each test consisted of eight questions with the same topic and level of difficulty. To be specific, students took the test by following the stages: doing the first quiz – receiving feedback – reviewing – replaying the quiz – doing the next quiz. This hierarchical process was suggested by Wang [3] and Falchikov [2].

C. Data Analysis

The data from observation and interview were analyzed qualitatively following the stages from Miles and Huberman [27]. Before analysis, the data were prepared and transcribed. Then, data reduction was done summarizing the data of the practice of self-assessment by Quizizz into three parts: pre-, while-, and post-self-assessment. Then, data display was conducted in which specific data including students' behavior from observation and perception from the interview were compared and correlated. Lastly, drawing and verifying conclusions supported by very relevant theories were made. The data obtained from the tests, on the other hand, were analyzed to triangulate the findings by using descriptive statistics.

IV. FINDINGS AND DISCUSSIONS

This section will explain the findings on the basis of the two research objectives. The first finding derived from observation and interview explains how students did self-assessment by making use of Quizizz. The elaboration of this finding will be categorized based on self-assessment phases: pre-, while-, and post-self-assessment. The second finding obtained from the tests presents the improvement of student's grammar understanding after self-assessment with Quizizz.

A. The Practice of Self-Assessment with Quizizz

1) *Pre-self-assessment*: Before doing self-assessment, students were given self-assessment criteria developed from Quizizz features, namely feedback and review. The criteria

included learning goal, scores and rank for each quiz, strengths and weakness of grammar understanding, quiz performance, and things to do next to outweigh the weakness. The feature of feedback given by Quizizz consists of two main parts: game summary (score and rank), performance stats (the number of correct and incorrect answers, the number of unattempted questions, average time per question, and the longest streak). Students were firstly trained how to use this kind of feedback to identify their strengths and weakness in terms of understanding of the topic and their performance during taking the quiz. Finally, students took the first quiz with Quizizz after they prepared themselves by reviewing Future Forms.

The necessity of training the students to do self-assessment was concurred by Sehrani [28] that rather merely gaining feedback, students need to be taught how to implement this feedback to self-check so that as outlined in Ramdass and Zimmerman's study the accuracy of self-assessment is improved [29]. Irons put forward the compulsory of making use of a rubric or feedback chart or grid with its criteria by firstly indicating the main learning outcomes on a pre-designed self-assessment [7]. How these criteria developed from Quizizz feature tallied the agreement of the efficiency and effectiveness of the use of computer-mediated programs for production of feedback supporting self-assessment [3,7,9,22]. It can be inferred, therefore, the pre-self-assessment activity in this study has shown a clear purpose to help students assess their performance thoroughly and effectively.

2) *While-self-assessment*: After taking the first quiz, students received the feedback from Quizizz. Students used the game summary feedback as a source of information to self-assess their scores and rank – signifying their position amid other students. All the students stated that the achieved scores and rank increased their motivation to perform better in the next quiz to get the higher rank. If the rank feature was turned on, students could see a leaderboard after answering each question and the position of their rank during and after the quiz. Surprisingly, the lower level students, once they did self-correction on their mistakes in the first quiz, they retook the quiz and eagerly asked the teacher to let them take the second quiz.

Gamified quizzes design promotes the interactivity between the players and the quiz leading to the improvement of learning motivation even more [30]. Crisp and Ward [22] and Wood et al. [23] further supported in agreement that students' intrinsic motivation can be triggered through the creation of the environment in which multiple participants can gain comparable scores and experience the authentic gamification by working towards overall learning goals without being biased by the badges. This confirms that the resemblance of game-like, with real time leaderboards offered by Quizizz created the engagement of students because of its sense of competition in authentic learning settings.

Having immediate feedback from Quizizz, students identified their strengths and weakness for their first quiz performance. Among self-assessment techniques, all students performed self-correction and learning logs. Students identified

their strengths on grammar parts they had already understood by reviewing questions they got correct. In terms of their weakness, they found out the grammar parts they still confused by reviewing their incorrect answers. They wrote their incorrect answers and found the correct answers by reviewing the lesson from their notes and textbook, and discussion with their friends or the teacher. These attempts were intended to make sure that they self-corrected the answers based on their understanding instead of guessing. After finding the reason to the correct answer, they completely wrote their self-correction for each incorrect answer with the following schemes: wrong answer – correct answer – why.

The power of feedback given by Quizizz helped students do self-assessment effectively as the type of feedback was goal-referenced, timely, ongoing, and consistent in giving feedback in terms of accuracy and trustworthy [9]. It can be inferred that given online formative feedback enhances the ownership of their learning. It correlates favorably with Irons [7] and Gikandi et al. [22] that students activate themselves to take the responsibility of their own learning – learning how to learn. The practice of how students identified their strengths and weakness has relation with conscious self-evaluation enabling them find ways of changing, adapting and developing [28].

Done with self-correction, they moved on to identify some obstacles they experienced during taking the quiz. First, majority of the students were often distracted by the question timer, the Quizizz feature to show duration of each question, yet settable to adjust. The intention to increase their rank made them answer in the very short time resulting in less careful reading on the questions. They knew the function of the question timer served to award them points based on accuracy and speed, 600 points for getting it correct, and 0-400 based on speed. On the other hand, regardless of speed, an incorrect answer is worth 0. For them, points and rank were important to be persisted. However, interestingly, a few of students normally perform grammar skill on average did not matter the question timer since what important for them was able to answer the questions by understanding.

The gap between the two different groups was fostered by different learning goals. The first group considered mastery and scores important, yet the other group more focused on understanding. This finding supports the urge to define learning goal in pre-self-assessment as discussed in the previous finding [7].

Another challenge was students ran into technical errors. During review process, some students complained that suddenly Quizizz was unable to access – it logged out by itself. It made them lose their last review. Another problem coming from the two students was the sensitivity of the touch screen causing them wrongly clicked the answer.

3) *Post-self-assessment*: There were two hierarchical activities students did after self-assessment, which were, replaying the quiz and taking the next quiz. Most of the students replayed the quiz voluntarily – out of the teacher's instruction. A few of them, with the sense of having enough understanding on grammar parts having evaluated, they directly took the second quiz with different questions yet the

same topic, level difficulty, and number of the questions. Quizizz then automatically gave the students feedback as the information to do self-assessment. Again, students evaluated their performance and understanding as they did in their first-quiz result. Some students replayed the quiz and some directly took the third quiz as the last quiz. Although it was the final quiz of future forms topic, as they received the feedback, they did self-assessment. In a nutshell, they performed self-assessment for the three quizzes with the following steps: receiving feedback – reviewing – replaying the quiz – taking the next quiz.

Replaying the quiz was also suggested in other studies [3,22]. However, Wang contradicted the findings on the practice of some students' self-assessment from given answer [3]. Wang more suggested the students to repeat the quiz after gaining timely feedback as reference when they answer wrongly so that they will be more focused and gradually master the lesson [3]. The importance of repeating the quiz was also highlighted by Hall and Burke that students necessarily more focus on causes of success and failure than praise performance as a final product or completed task [5]. This also served to answer why the students needed to take the new quiz. It was a part of activation process of learning development after self-assessment as highlighted by Moss and Brookhart [8] and OECD [16].

B. The Improvement of Students' Grammar Understanding

In general, by analyzing the students' scores derived from three quizzes they self-assessed, most of the students showed an improvement. It was depicted from the score differences starting from the first until the third quiz. Students improved their understanding as 9% from the first to the second quiz after self-assessment. Surprisingly, students could significantly increase their improvement as 41% from the second to the third quiz. However, four out of fourteen students experienced fluctuation in their quiz performance. Overall, from the first to second quiz, it dropped 38% but went up significantly 122%. This big gap was caused by two reasons. First, the first two students got the lower score due to their less careful reading of the questions and the sensitive touch screen of their smartphone. The last two students' lower score in the second quiz was influenced by the unsuccessfulness of their self-correction – they took the second quiz with the remaining uncertainty concept of future form. They ended up asking the teachers to explain the material they did not master.

Self-assessment and test scores could be reasonably strong evidence that students could judge how well they had done on formal tests and assessment [29]. The importance of taking new quiz favorably concurred well with the last process of self-assessment proposed by McMillan and Hearn as in this study students replayed the quiz then took the new quiz with the same platform, Quizizz [18]. This result revealed that self-assessment with Quizizz has given positive impact to students' grammar understanding. With regard to a few students not fully successful in self-assessment might be related to the limitation of Quizizz which does not provide discussion forum feature to enable students progressively constructing content and knowledge collaboratively [22].

V. CONCLUSION

This study has presented the practice of self-assessment by making use of Quizizz and its features to improve students' understanding of grammatical concepts. Self-assessment was conducted in the hierarchical process: receiving feedback – reviewing – replaying the quiz – taking the new quiz. The presented findings have confirmed that Quizizz for self-assessment has successfully improved students' grammar understanding. Students merited the most from self-assessment were those who had enough mastery of grammatical concepts. The low-performing students, on the other hand, still needed the tutor to help them do self-correction. However, this study has the limitation on not providing the condition of students' grammar proficiency pre- and post-use of Quizizz. With this in mind, to further research, it is considerably suggested to undertake this issue to find out more valid and comprehensive result of the research.

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