GAMIFICATION AND SOLO TAXONOMY: A STRATEGY TO PROMOTE ACTIVE ENGAGEMENTAND DISCIPLINE IN ENGLISH LANGUAGE LEARNING

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Abstract: The motivation for this study arises from the potential of gamification, particularly the integration of game-based platforms like Kahoot!, to enhance active communicative language use within the classroom. The research aims to investigate the impact of implementing gamification based on SOLO taxonomy's relational level on the Kahoot! application on active participation, discipline, and learning outcomes in the context of English language learning. This study employs a descriptive research methodology, involving observations, interviews, and assessments, with a participant group comprising 35 nursing program students. Descriptive analysis reveals that gamification within the SOLO taxonomy framework positively influences students' active engagement and discipline, although there are fluctuations in their learning outcomes. Students express enthusiasm for utilizing the Kahoot! application for English learning, but they encounter occasional connectivity issues that hinder problem-solving activities. Consequently, the integration of technology is a promising approach for enhancing English language skills, with a reliable internet connection being a critical factor for success when using the Kahoot! platform.
Keywords: *English; Kahoot!; SOLO Taxonomy.*

INTRODUCTION

The utilization of video games is experiencing a significant upswing among both adults and children in the 21st century. This trend has recently captured the attention of scholars, educators, and practitioners. Gamification represents a creative and engaging approach to learning activities, making it a valuable tool for enhancing students' English language skills (Redjeki &. Muhajir, 2021). It's important to note that gamification goes beyond mere play; it involves the incorporation of meaningful game elements such as challenge, mystery, storytelling, constructive feedback, social interaction, collaboration, and other captivating elements to encourage users to solve problems and stimulate creativity (Putra, 2020).

Furthermore, it is worth acknowledging that play is inherently a social process that boosts motivation and facilitates learning across various age groups and levels. As the emphasis on fostering creativity in the classroom and leveraging technology for teaching and learning continues to grow, educators are tasked with identifying game-based or competitive learning platforms. Educators must assess factors like motivation and the platform's ability to promote and reinforce learning (Tan et al., 2018).

The adoption of gamification as an approach to teaching and learning is recognized as a novel method capable of enhancing student achievement (Ismail et al., 2018). Recently, gamification has been effectively integrated into online learning and teaching practices. Its effectiveness is evident in its ability to engage students in the instructional process, enhance their interaction with educational materials, and develop their competencies (Ozdamali, 2021). Online educational games serve to boost intrinsic motivation and engage students in their academic pursuits (Iaremenko, 2017). The incorporation of gamification approaches significantly enhances learners' understanding of English syntax (Arunsirot, 2021).

Research demonstrates that the educational technology landscape has been evolving, with

gamification being a prominent example of this shift (Mahbubah, 2022). Modern trends underscore the importance of emerging educational technologies like digital classrooms and gamification. Analyzing these developments, it becomes apparent that gamification enhances learner engagement, encourages active participation, and fosters discipline. However, the outcomes in English language learning remain dynamic. Therefore, introducing internet-based games and quizzes into English language teaching with a cognitively stimulating approach is a viable avenue for improving English proficiency (Inayati & Waloyo, 2022). Gamification has the potential to promote the active use of communicative language interaction within the classroom (Nugraha & Sembiring, 2023), and it elevates learner interest and ambitions for success (Bicen & Kocakoyun, 2018). Various gamification techniques offer valuable opportunities for enhancing student learning (Hong et al., 2022). In the English classroom, meaningful teaching and learning is essential to Improve learners' English proficiency by emphasizing linguistics and communication abilities. The matter of concern, however, is how gamification instruction is used in English as a Second Language (ESL) courses and the components that promote valuable English learning for students (Yaccob et al., 2022). Digital gamification is said to be a fun method and supports learning English as a Second language and reduces the gap between learners and educational practices (Dehghanzadeh et al., 2021).

Furthermore, gamification is becoming more prevalent in educational settings to increase motivation among students and, as a result, learning outcomes. However, while investigation into the efficacy of gamification in educational contexts is expanding, an unexplored point around which types of gamification are appropriate for different educational circumstances has yet to be discovered (Legaki et al., 2020). Gamification design at least focuses on the evidence observed on the understanding of learners and how learning outcomes, and what to do if the test questions cannot be answered by learners.

The application of solo taxonomies works in tandem with the goal of gamification. Gamification and SOLO taxonomy focus on creating efforts and strategies in learning when making mistakes to develop a "growth mindset". The use of gamification along with solo taxonomies can change the way teachers and students think about their learning and how to

achieve and plan learning outcomes(Permana et al., 2023). SOLO (Structure of Observed Learning Outcomes) taxonomy is a learning model that offers plans for different lessons in gamification. SOLO taxonomy is divided into 5 levels of differences in learning outcomes: pre-structural; structural union; multi-structural; relational, and extended abstract (Putra, 2020). Pre-structural, learners have no idea of information. Uni-Structural, students are able to show simple or single relationships of digital tools such as Notability, Tini Cards, Scrabble, Google Docs, Besboard, and YouTube. Multi-structural, learners are able to handle multiple ideas, but not sprouts, e.g. Edpuzzle, Mind Master, Skitch, and Google Slides. Ralational, learners are able to show relationships to several ideas and also synthesize the overall meaning such as the use of Kahoot!, Quizlet, Socrative, Seesaw, and Prezi. While in extended abstracts, students are able to transcend subjects, such as Padlets, Cashles, blogs, and podcasts. The use of SOLO helps students in better learning outcomes.

A study by Roy et al. (2022) demonstrates that SOLO taxonomy feedback promotes, engages, and enhances the quality of students' awareness and directs them to accept learning challenges. At any response level based on SOLO, teachers are able to design models or instructional strategies to determine the cause of misconceptions (Claudia et al., 2020). The use of taxonomy SOLO taxonomy assessment tools can provide teachers with significant information about how well learners understand a topic so that it is possible to provide corrective instructions or appropriate intervention programs (Dumaraos, 2022). In this study, the use of SOLO taxonomy emphasizes the relational level in the form of Kahoot!. Relational instructing is organized into a framework beneath the theme of Tact and Stance, which is then divided into six smaller units. Empirical examiners can use these six key relational indicators to document and clarify ongoing interpersonal interactions between educators and their pupils at the micro level, as well as to assist pre-service and on-duty teachers in developing sustainable and trustworthy connections with their students (Ljungblad, 2022).
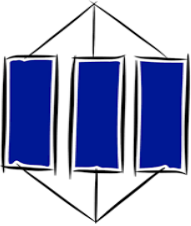
Studies obtained by Irvine (2021) that at the relational level describe: (1) Making inferences and justifying those inferences using more than one reasoning element to compare plot boxes ;(2) Providing reasonable explanations by using reasoning elements to compare plot boxes in justifying conclusions without being asked to do

so; (3) Discuss the benefits and drawbacks of using different reasoning elements to compare box plots when drawing conclusions without being requested to undertake that way. (4) When asked to discuss the benefits and drawbacks of applying various reasoning elements to compare box plots when making inferences, it may offer a coherent discussion; (5) Does not go over the possible consequences of conclusions reached if only one of the various elements of argumentation to compare box plots is used; (6) Consider the consequences on conclusions reached if one were to base only one of the various elements of argumentation on comparing the plot of the box after receiving a request to undertake that way; (7) Not evaluating the uncertainty of the conclusions made; (8) Evaluate the uncertainty of conclusions only after being asked to do so.

The following shows an explanation that combines gamification and digital tools in SOLO taxonomy at the relational level:

Tabel 1. *Gamification and digital tools in SOLO taxonomy at the relational level*

	"Related ideas" Learning outcomes Exemplify connection are made and parts are synthesized with the overall meaning	- Sequence - Classify - Compare and contrast - Explain (Cause and Effect) - Analyze - Form an analogy - Organize - Distinguish - Question - Relate - Summarize - Exemplify - Apply - Describe	• Case studies • Concept maps • Experiential learning activities •Application of theoretical models •Reflective journal •Debates •Syndicate groups (each group of whole) •Problem-based activities •Inquiry Learning activities	Kahoot! Quizlet Prezi socrative

Adaptive software and platforms like Kahoot! enable learners to engage and actively participate in the language-learning process, providing a more meaningful language-learning experience (Kaur, 2019). Students enjoy Kahoot! Since it is easy to use (Hurtado, 2017), fun, informative, and helpful. Students rated the level of difficulty in using Kahoot! as 'Not difficult', 'A little hard', and 'Hard' (Cetin, 2018). Furthermore, using Kahoot! Not just for making games, but also for applying the right gamification concepts (Nikmah, 2020). Researchers found that there is still a lack of understanding of students on the technology used in learning and how to provide motivation in learning English by using applications that have rewards in the Kahoot! application. College English lecturers continue to use synchronous and asynchronous learning methods. There has been very little research on learning using apps with reward elements. Thus, by using Kahoot! and the SOLO taxonomy, researchers looked into the degree of student engagement and the effects of gamification in higher education.

To answer the problem, how does the use of gamification affect SOLO taxonomy at the relational level with the Kahoot! to the active involvement and discipline of students in higher education in English language learning, and how students respond to the use of gamification technology in SOLO taxonomy in English language learning. A gamification-based approach can be an effective and motivating way to learn EFL(Fernández-Portero and Castillo-Rodríguez, 2022) However, researchers found that the use of gamification is integrated into SOLO taxonomy at the relational level where gamification elements in English learning are used on Kahoot! Platform. Then the researcher will further investigate the success rate in English language learning in active participation and discipline of students integrated in gamification into SOLO taxonomy.

METHOD
The research method is descriptive which aims to

explore how the use of gamified quizzes is used in teaching and learning classes. More specifically, this study investigated and analyzed the effect of gamification integrated into SOLO taxonomy with the use of Kahoot! Platform on several aspects of English language teaching, namely student involvement and learning outcomes. Student engagement was analyzed using observations and their learning outcomes were based on the Kahoot! described in the Data Collection section. The group of participants each consisted of 38 students in the Nursing study program, they were chosen as research subjects because the study showed that the low English learning system that uses technology integration. In addition, according to Öz and Ordu (2021), Kahoot! should be used as an alternative formative assessment tool in the curriculum for online nursing education. The method of data collection in answering research questions is observation and test results. The involvement that will be analyzed uses two indicators of student active participation in the quiz and their discipline in taking the quiz. Observations will be made 3 times using a checklist that makes both criteria both criteria know their response to gamification

in SOLO Taxonomy using Kahoot! On English language learning. All of the above processes will be presented in the following table: engagement in observing an increasing trend. Researchers witnessed the learning and teaching processes during their observations and recorded two indicators of involvement, namely active participation and discipline. To answer the research question, the results of learner scores for the Kahoot! analyzed to see if there is an upward trend. To do that, the average of each quiz was analyzed, and observed student performance. The study included three phases with 6 meetings and 6 gamified quizzes. In data analysis, the first list of observations is tabulated and analyzed the tendency of active participation and discipline which is created to assist the analysis of active student involvement. Furthermore, the results of student quizzes were analyzed using descriptive analysis to determine the average score of the class. At the end of the activity, students were given a questionnaire to find out their response to gamification in SOLO Taxonomy using Kahoot! on English language learning. All the above processes will be presented in the following table:

Tabel 2. *Technique for collecting the data*

Meeting	Topic	Kahoot!	Collecting The Data		
1.	Applying Infusion	Kahoot!	Observation	Test	
2.	Active and Passive Future Tense	Kahoot!	-	Test	
3.	Injection	Kahoot!	Observation	Test	
4.	Profession in Hospital	Kahoot!	-	Test	
5.	Room in Hospital	Kahoot!	Observation	Test	
6.	Quiz	Kahoot!	-	Test	Questionnaire

RESULTS AND DISCUSSION

This section discusses the results of data analysis on student involvement in learning outcomes on the use of SOLO Taxonomy on the Kahoot! In

English Language Learning

The gamification effect of Kahoot! towards student learning engagement
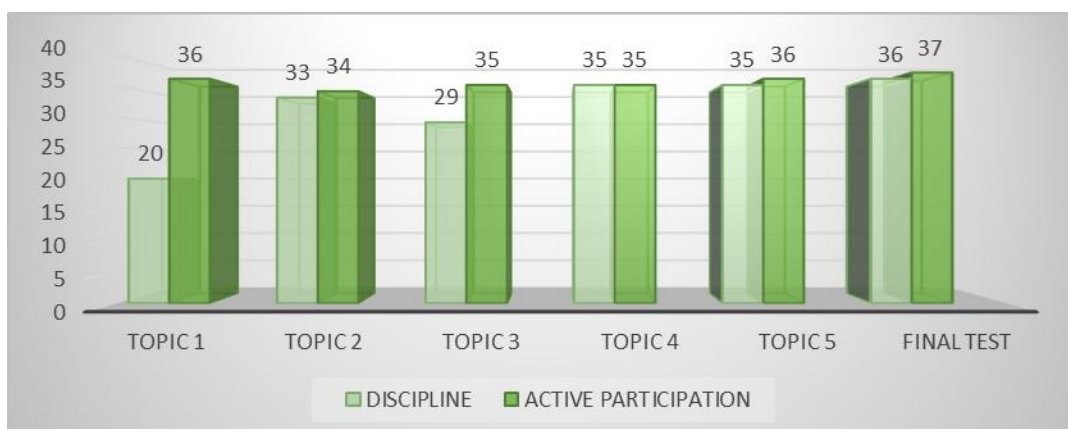
Figure. 1 *Students engagement on Kahoot!*

In Figure 1, the analysis of student involvement can be seen from a total of 37 students, in topic 1 there are 97% with 36 students actively participating in the learning process and

54% with 20 disciplined students in doing questions on the Kahoot! application. In topic 2.92% of students actively participated with a total of 34 students, and 89% with a total of 33 disciplined students in doing questions on the Kahoot! application. In topic 3, there are 94% of 35 students actively participated in the learning process and 78% of 29 students disciplined in doing the questions. In topic 4, there are 94% with a total of 35 students actively participated in the learning process, and 94% with a total of 35 students disciplined in doing questions on the Kahoot! application. In Topic 5 there was a significant increase again, there were 97% with 36 students actively participating in the learning process and 94% with 35 disciplined students in doing questions on the Kahoot! application. In the final test results given to students, as many as 100% with a total of 37 students actively participating and 97% with a total of 36 students who are disciplined in doing questions on the Kahoot! application. Activities carried out on student involvement in the learning process have

significant increases and decreases. Student discipline is shown in the learning process on the constraints of student signals for access and not on time in doing questions. In active participation, it was found that students were not present in learning and were slow to do it.

The effect of Kahoot! gamification in student learning outcomes
In learning outcomes, general trends are found based on the results of instability data analysis. How gamification affects student learning outcomes on quizzes that have been given. The most commonly used elements of gamification in e-learning that have a strong influence on students are points, leaderboards, badges, and levels (Saleem et al., 2022). Furthermore, a study from Wirani et al. (2021) shows that Gamification can be beneficial for students to improve their performance and help them in understanding the material. The following data presents the average score obtained by students on each topic presented 1-6.
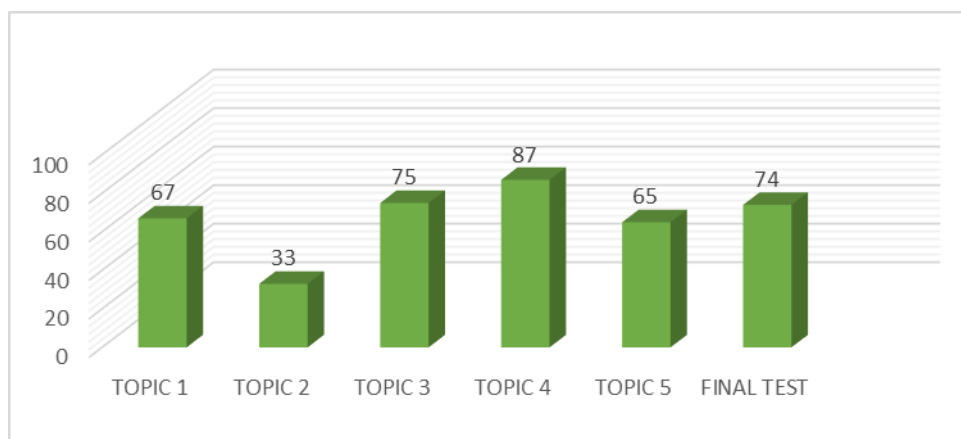

Figure 2. *Students average score*

As seen in Figure 2, the trend of instability does not show a consistent improvement in student learning outcomes. The results are; in topic 1, which is about infusion installation, students learn vocabulary related to infusion installation. In the quiz questions, 10 questions were given, and the average score for topic 1 was 67; Topic 2 discusses passive voice in the future tense. 7 questions are given in the quiz, and the lowest average score is 33; Topic 3 discusses vocabulary related to injection. Five questions are given and students' average score is 75; Topic 4 about the profession in the hospital – discusses vocabulary related to the profession in the hospital. 10 questions are provided and the highest average score of the students is 87; Topic 5 is about the room in the hospital. 10 questions

are provided with an average score of 65; and at the end of learning, all topics 1-5 are given, and students are given a final test to measure their understanding of the topics. The number of questions given is 15 questions with an average score of 74. It is estimated that there are several main reasons for the instability of the average learning score results obtained by students, the level of difficulty of the questions in each topic given and the inadequate internet network when working on the questions. The results of the average score of students show that students is easier to grasp vocabulary skills in learning English by using Kahoot! Platform. Studies show that the use of the game Kahoot! in class is recommended to improve learners' vocabulary and EFL competence (Luik, 2019). Kahoot! as an

internet-based platform is an effective medium for teaching English so that students can memorize English vocabulary (Anggraheni and Yogatama, 2020).

Student opinion gamification on SOLO taxonomy using Kahoot!

The second purpose of this study is to describe students' opinions on Gamification on SOLO Taxonomy using Kahoot! in English courses. The questionnaire method is a crucial research tool to measure the attitudes and opinions of respondents when responding to specific questions (Pinto and Reshma, 2021). Questionnaires were developed to collect data from participants to answer research questions (Abuhmaid, 2020). The authors' data was based on the objectives of both studies through Google Forms.

Tabel 3. *Student opinion gamification on SOLO taxonomy using Kahoot!*

No	Question	SA (%)	A (%)	N (%)	D (%)	SD (%)
1.	Students interested in using the kahoot! app	60.5	36.8	2.6	0	0
2.	Students love using kahoot!	44.7	47.4	7.9	0	0
3.	English courses are suitable to be taught with the Kahoot! application	52.6	39.5	5.3	2.6	0
4.	Students feel challenged to learn English when in class using kahoot!	44.7	36.8	18.4	0	0
5.	Students feel kahoot! as the right game technique in increasing enthusiasm in learning English	44.7	50	2.6	2.6	0
6.	The kahoot! application builds student creativity in the classroom	44.7	47.4	7.9	0	0
7.	Kahoot apps take a lot of internet charges	2.6	15.8	42.1	34.2	5.3
8.	Kahoot app makes students feel bored	2.6	10.5	5.3	71.1	10.5
9.	Students have difficulty using kahoot!	0	13.2	18.4	52.6	15.8
10.	Students don't have a kahoot! app	0	15.8	26.3	42.1	15.8
11.	Students feel motivated to learn English using kahoot!	36.8	52.6	10.5	0	0
12.	Students cannot log in to the kahoot! app due to poor internet connection	5.3	26.3	52.6	15.8	0
13.	Games using kahoot! make students more active in learning English	40.5	51.4	8.1	0	0
14.	Kahoot! app provides in-depth English practice	36.8	47.4	15.8	0	0
15.	Students feel they can understand the material in learning by writing back what is known in the material delivered	34.2	44.7	21.1	0	0
16.	With techniques taught in English courses. Students better understand the learning delivered by lecturers	36.8	47.4	15.8	0	0

Table 3 showed survey results, including responses on students' opinions of Gamification on SOLO Taxonomy using Kahoot! in English courses. Students' perceptions of using Kahoot! may be influenced by their background, which should be considered when interpreting findings (Al Ghawail and Ben Yahia, 2022). Thirty-eight students came from the class of Nursing students of Sekolah Tinggi Ilmu Kesehatan Siti Khadijah Palembang, Sumatra Selatan, Indonesia both male and female. The percentage may not reach 100% due to rounding. The abbreviation of the table

shows that SA=Strongly Agree, A=Agree, N= Neutral SD=Strongly Disagree, and D=Disagree. From 16 questionnaires given to students, it was found that the percentage of student opinions in Gamification on SOLO Taxonomy using Kahoot! in English courses was found.

At the end of the question, students were given one question "What's your opinion on the Kahoot! Application?", "Is the Kahoot! application effective as a game media in taking grades in English learning?", " What you get from the use of Kahoot! Application?", "What obstacles did you face in the learning process using Kahoot?", and the last "What is your advice as a Kahoot! user? Is it effective as a game media in taking grades in English learning?".

Based on responses from students expressing their thoughts on the Kahoot! Application, arguing that the Kahoot! contest's 32 correct answers Students were very interested while using Kahoot because the application was both challenging and exciting, and the way learning happens is not monotonous. This application was very helpful in learning not only how to learn, but also how to play. Some students argue that the Kahoot! application was difficult because signal constraints can cause it to be disrupted when filling out the problem. Students felt Kahoot! was the right game technique to increase enthusiasm for learning English. Kahoot! was very attractive for students to learn English, train their intelligence and brain speed, and can help in improving English language learning, some students think Kahoot! application felt challenged and facilitated learning and was very useful in helping to learn English, very helpful and easy to understand lessons. The 35 students answered that the Kahoot! application was quite effective and games using Kahoot! make students more active in learning English, but some argue that it was often constrained by the internet network. Internet connection was an important factor that must be considered to create the success of Kahoot! integration in teaching and learning activities (Mahbubah and Anam, 2022).

It can be determined from 34 answers to the Kahoot! Application quiz allows students to learn while taking quizzes, better understand the lessons being taught, gain a deeper understanding of the material, and make learning more interesting. It also reported that they personally become braver and quicker to respond because Kahoot! was completed in less time, encourages participation, and facilitates

learning. According to 33 responses, the signal was not supportive during the Kahoot! quiz, making it difficult for some participants to log in and enter their answers. Some students get the network they had when the learning process did not encounter problems. These are some of the obstacles faced in the learning process using Kahoot!. There are some who almost were unable to enter the quiz due to the bad internet network. Kahoot! can be an effective tool for encouraging high school students to learn a language, but proper use of the program necessitates a steady internet connection(Eva et al., 2022). The 33 answers that Kahoot! was effective in scoring results. Some students argue that it was less effective for value-taking materials because there were often signal problems and sometimes in the condition of the signal starting to error, the participants begin to be nervous so they lose focus and finally press the wrong answer. Moreover, Kahoot! can be used in other learning media and is one of the various types of interactive instructional materials that might render the learning process enjoyable and not monotonous for learners as well as educators.

According to Mdlaloseet al. (2021), Kahoot! plays an important role in improving academic performance, motivation, and active involvement of students during the teaching and learning process. Kahoot! is a useful game-based application that can increase learning motivation, class engagement, learning effectiveness, and interaction in the classroom. Therefore, it is recommended that teachers use Kahoot! as a facilitator to support learners' English learning (Tao and Zou, 2021). Study from Öden et al. (2021) shows that Kahoot! significantly improved attitudes towards EFL courses with an effect size of 0.22. Kahoot! increases EFL learning motivation and lowers exam anxiety, but this is not significant. It is revealed that the students consider Kahoot! as something funny. In the use of English skills, Kahoot! can be used in various stages of education to develop EF pronunciation skills (Yürük, 2020) Kahoot! can assist students in learning new vocabulary (Anon, 2022). Kahoot! has a positive effect on students' writing skills as well as effective online learning (Amalia, Solihat, and Darsih, 2022). Moreover, applying Kahoot! in the instructional process, particularly in reading comprehension courses, increases participant motivation and positivity toward the material they are studying (Al-Khamaiseh, 2022). Studies

showed that game-based learning is one of the most popular learning media today. Kahoot! is one of the popular game-based learning media played in the classroom. However, the effectiveness of Kahoot! as a medium for assessing English lessons is still rarely done (Syah, 2019).

CONCLUSION

This study aims to find out the effect of using SOLO taxonomy gamification on Kahoot! To active involvement and discipline in English language learning. The findings revealed that, First, student learning involvement has been observed in two indicators discipline and active involvement in English learning in the use of the Kahoot! application. Both indicators show a fairly consistent improvement in each given topic. Second, the learning outcomes showed instability in learning outcomes, and inconsistent averages were found on each given topic. This demonstrated that the implementation of SOLO taxonomy gamification had no positive influence on Kahoot! Application on English language learning. Students express their opinions on the use of gamification in SOLO taxonomy with Kahoot! as a result, stating that they feel challenged by using the application for English learning provided by Kahoot!, but occasionally restricted by poor signals when solving the problems.

ACKNOWLEDGEMENT

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