

Enhancing students' speaking skill through a game-based learning innovation of a family game show

Ria Arista Asih^{1)*}, Hermiyanti Tri Halisiana²⁾

¹ Magister Pedagogi, Direktorat Program Pascasarjana, Universitas Muhammadiyah Malang
Jalan Raya Tlogomas No. 246, Malang, Jawa Timur, Indonesia

² Language Center, Universitas Muhammadiyah Malang, Jalan Raya Tlogomas No. 246, Malang, Jawa Timur, Indonesia

aristaria86@umm.ac.id* ¹; hermiyantitrihalisiana@umm.ac.id ²

*Penulis Koresponden

ABSTRAK

Gamifikasi dan Pembelajaran Berbasis *Game* (PBG) adalah strategi mengajar terbaru yang dianggap sesuai untuk pembelajaran Bahasa Inggris yang menyenangkan. Penelitian ini bertujuan untuk menjabarkan implementasi inovasi PBG dalam perkuliahan *Foreign Language for Specific Purposes* (FLSP) di Universitas Muhammadiyah Malang. Desain yang digunakan adalah Penelitian Tindakan Kelas (PTK) dengan dua siklus. PBG yang digunakan diadaptasi dari permainan keluarga *Famili 100* dan *Trivia Game*. Subjek penelitian adalah mahasiswa Psikologi Angkatan 2021/2022. Metode pengumpulan data melalui survei dan observasi, dan data yang didapat dianalisis menggunakan *Activity Theory*. Triangulasi data didapat dari perbandingan antara catatan observasi dan respon kuesioner. Hasil menunjukkan bahwa mahasiswa belum antusias saat belajar *Speaking* melalui PBG. Namun, setelah penyesuaian tingkatan, peraturan, dan topik PBG, performa kognitif, afektif, dan psikomotorik mahasiswa meningkat. Temuan ini menunjukkan bahwa penyesuaian tingkatan, peraturan, dan topik PBG dapat meningkatkan pemahaman mahasiswa, meningkatkan motivasi belajar, dan menghasilkan perilaku positif.

Kata Kunci: FLSP; PBG; Berbicara; Peningkatan

ABSTRACT

Gamification and game-based learning (GBL) is the newly introduced learning strategies considered fit for English fun learning. This study aims to investigate the implementation of teaching Speaking in Foreign Language for Specific Purposes (FLSP) at Universitas Muhammadiyah Malang. The employed research design was Classroom Action Research (CAR) with two cycles. The GBL employed was modified from the Family 100 and Trivia game show. Subjects of the study were the Psychology students 2021/2022. Data collection methods were a survey and observation checklist, and the obtained data were analyzed using Activity Theory. The data triangulation was obtained by comparing researchers' observation notes and questionnaire responses. Results show that students were not enthusiastic when learning about Speaking through games. Their enthusiasm increased when the game level, rules, and topics were adjusted. The findings of this study imply that GBL enhanced students' understanding, motivated their learning, and increased their positive behaviours.

Keywords: CAR; GBL; Speaking; Improvement

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INTRODUCTION

Game-based learning (GBL) has rapidly developed in today's education. GBL is considered effective because of its affordance on digital social interaction (Zhao et al., 2021), an improvement in students' efficacy (Lacka et al., 2021), and acceleration of various English skills (Amorim et al., 2022; Zhonggen, 2018). A study in China shows that serious online GBL has significantly improved students' vocabulary compared to traditional games (Zhonggen, 2018). This study specifically revealed the differences among three groups where the groups with serious game-aided treatment interacted better than those with traditional game treatment. Another study by Barr (2018) similarly showed that university students had better attitudes when learning through games. Games were proven to facilitate students' communication and teamwork that supported the achievement of end-goal learning. Hence, it can be said that GBL is a potential means of future teaching.

GBL refers to games for learning whose aim is to create a fun and supportive atmosphere that can enhance student learning (Klimova, 2015). Especially during the Covid-19 pandemic where students mostly study using online platforms, GBL is needed to reduce boredom (Hamid et al., 2020) and besides, and GBL increases meaningful interaction between teachers and students or among students (Madland & Richards, 2016). Various kinds of GBL have been introduced, ranging from traditional games (Zhonggen, 2018), serious games (Calvo-Morata et al., 2020), and online video games for higher education (Barr, 2018). All of these games were created to aid student learning at various levels of education.

However, there has been limited specific studies on the use of GBL to enhance students' speaking skill (Klimova, 2015; Millrood, 2015) has specifically pointed out that techniques and technologies of teaching Speaking have a backwash effect where students fail the language tests despite their learning of the language. There is a need to tailor between three organizational and pedagogical technologies of "cognitive dissonance", "information gap" and "logical impasse" (p. 46) in the use of technology to teach Speaking. This finding contradicts the notion that the use of GBL for Speaking should improve students' communicative skills Omar et al., 2020). There is a need to investigate the use of proper GBL for English Speaking skills, especially in higher education, that results in students' interactive ability to perform meaningful communication. In this case, enhancing students' speaking skills can be investigated through their cognitive, affective, and psychomotor domains during the GBL (Barr, 2018; Martí-Parreño et al., 2018).

Until recently, many documented studies on GBL have widely focused on early childhood education (Palaiologou, 2016; Teo, 2018), reading and vocabulary skills (Amorim et al., 2022; Vanbecelaere et al., 2020), computers, and robotics (El-Hamamsy et al., 2021; Miranda et al., 2021), and even medical science (Meum et al., 2021; Teo et al., 2022). Findings in early childhood education suggest that parents, caregivers, and teachers be more literate as children today are heavy users of technology and learn a lot from it (Palaiologou, 2016). This is evident in four European countries, and there has been a call for more literacy for adults to support their children's learning. This finding is echoed (Teo et al., 2022) where adults learn more independently through augmented reality. In this case, medical students in Asia learn better in flipped classrooms through game-assisted subjects. These

two studies similarly show that games and technology are potential means to support learning for learners at any age.

Speaking is important because it is the most prominent skill in language learning where learners can showcase their ability to produce the language meaningfully (Pakula, 2019). As an informative and interactive means of communication, speaking calls for the integration of cognitive and affective abilities of the speakers, which may be hampered by many factors. It has been documented that student hardly utter the second language because the teachers are ‘doing Speaking’ rather than ‘teaching Speaking’ where skilled learners are active and the unskilled speakers are left behind (Burns, 2019). There is a need to apply the cycle of teaching Speaking where learners are scaffolded through several steps, including guide planning, speaking tasks, reflection, and feedback in learning (Burns, 2019).

Our study thus argues that the enhancement of Speaking skills in adult English learners may be facilitated through games. In this case, games have been known to be part of fun English (Klimova, 2015; Mulder et al., 2021), in which its use in online learning is worth studying.

Based on the aforementioned background, the statements of the problems are formulated as follows:

1. How is the implementation of teaching Speaking through GBL to university students?
2. What are the results of the implementation of teaching Speaking through GBL to university students?

In so doing, we aim to illustrate the implementation of GBL as adapted from the Family 100 game show. The GBL was carried out in two cycles to investigate the scaffolding feature of classroom action research. This notion follows Thamrin (2011) and Grace et al, (2015) where classroom action research is conducted in cycles to study the improvement and address the problems that emerged along with the treatment. Results of the implementation are analyzed quantitatively and qualitatively through students’ questionnaire responses and observation checklists.

What differentiates this study from the previous studies is the use of the term, in which *Foreign Language of Specific Purposes* (FLSP), specifying in English teaching for the students of Psychology 2021/ 2022 of Universitas Muhammadiyah Malang. Results of this study are expected to become the exemplary results of FSLP teaching innovation using GBL and report the thorough GBL implementation to improve students’ Speaking skills.

METHOD

Research design

This present study employed *Classroom action research* (CAR) in two cycles. CAR was chosen because it fits the study’s aims to improve the quality of the teaching and learning process and to obtain better results (Junor Clarke & Fournillier, 2012).

Hence, this present study attempted to enhance students’ Speaking skills in learning English as a foreign language by adapting a game show. The subjects of this study were the students of the Psychology Department ($n=25$), Faculty of Psychology, Universitas Muhammadiyah Malang, Academic Year 2021/2022. These students were chosen based on convenience sampling as the researchers were

teaching in their class. Convenience sampling is allowed to access gatekeepers for the data collection process (Cohen et al., 2018).

CAR is carried out in cycles (Madsen et al., 2020) to investigate changes during the implementation. This present study applied CAR with two cycles illustrated as follows (adapted from Kemmis & McTaggart, 1998) (Figure 1).

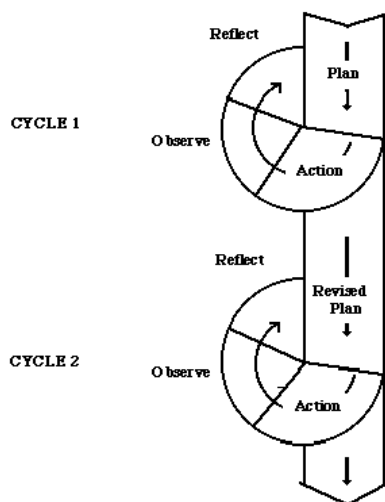


Figure 1. Two-cycle Classroom Action Research (CAR)

The differences between the two cycles lie in the given topic, in which the first topic was about review materials (basic start-up conversations) and the second topic was about trivia games (content knowledge).

The review materials (basic start-up conversation) were chosen to make the students recall their memories of the previous week's materials. The chosen game was decided based on the practicality of the class activity. In this step, the researchers wanted to see whether basic start-up conversations could make them speak without hesitation. After Cycle I was done, the result grew another interest of the researchers. Thus, Cycle II was done to find if the different game was chosen with the improvement from the review in Cycle I could make another result in Cycle I. The content knowledge was used here as the materials to avoid feeling bored in the classroom as they had reviewed the materials from the previous meeting.

Data collection

There are four steps in CAR: planning, acting, observing, and reflecting (Erbilgin, 2019). The explanation of the four steps carried out in this study is described as follows:

1. Planning

At this stage, the researchers reviewed the students' needs based on their midterm test scores to decide which material should be intensively used in the game. Then, the teaching scenario was made. *The Family 100* was first chosen because it helped the researchers to review students' speaking performance individually and in teamwork. These games required each student to speak before the class after a team discussion. For the instruments, the researchers prepared observation notes and a questionnaire. The questionnaire was distributed through Google Form.

2. Acting

The acting stage was the classroom activity, in which the researchers explained the rules and did a simulation. The chosen game was the adaption of *Family 100* with the topics of review materials, such as Greeting, Self-introduction and introducing others, and Daily Activity. The students were divided into two groups. The students were allowed to mix the language in Bahasa Indonesia and English by taking turns guessing the possible answer. After all of the questions were answered and the winners were obtained, the researchers evaluated the activity.

3. Observing

In this stage, the researchers observed the students' participation in the game. Despite the language mixing, students actively participated by trying to answer all of the questions. Before playing the game, the two groups were actively involved in the discussion sessions. The teamwork was shown when students played the game, everything was well planned.

4. Reflecting

In this last stage, the researchers evaluated and discussed the result of the student's participation in the *Family 100* games. It seemed that students could be encouraged to use English further, so another upcycled game would be used in the next cycle.

The media used for Cycle I is attached below (Figure 2 – 4).

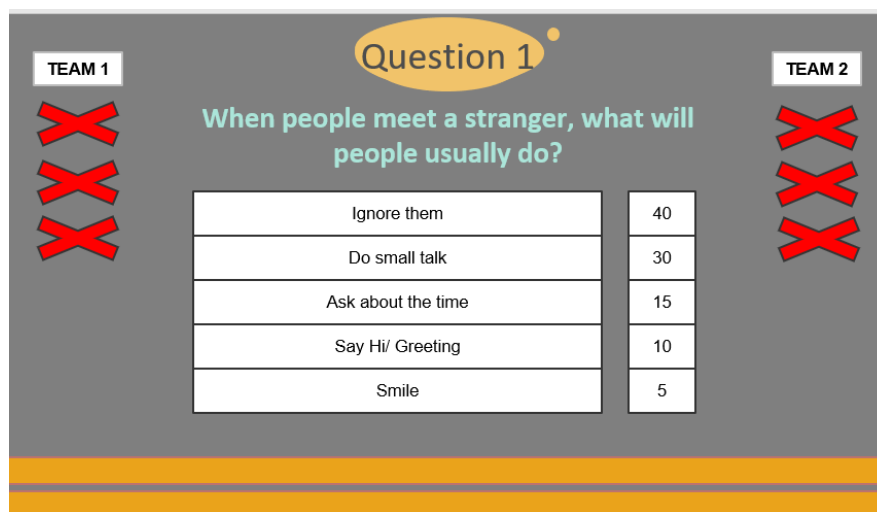


Figure 2. Slide 6 from the PowerPoint slides: Family 100-Basic Conversation Starter

Activity	Score
Copy their friend's homework	40
Take a bath	30
Have breakfast	15
Go to sleep again	10
Pray	5

Figure 3. Slide 9 from the PowerPoint slides: Family 100-Basic Conversation Starter

Activity	Score
Travelling	40
Hanging out with friends	30
Playing game	15
Listening to music	10
Studying	5

Figure 4. Slide 10 from the PowerPoint slides: Family 100-Basic Conversation Starter

The aforementioned four steps were repeated in Cycle II with the descriptions as follows:

1. Planning

The teaching scenario was revised to adjust to the change in the game. The game was adapted from a *Trivia Game* that contains questions, bonuses, and bombs (as for the minus score). The topics were Descriptions, Asking and Giving questions, campaigning, Product Promotion, and Asking and Giving Suggestions.
2. Acting

The same rules were applied where students worked in groups and took turns choosing the given alphabet. Before answering the question, one round minute was given to each student to prepare the answers as this game required longer answers than *Family 100*. Also at this stage, students were allowed to help their friends by giving clues in English. Different from

Cycle I, most students used more English than Bahasa Indonesia in language mixing.

3. Observing

The researchers observed the activity and investigated further the classroom's interaction. It was revealed that many students were excited to help their friends by giving some clues and commenting on teammates' answers.

4. Reflecting

Concluding Cycle II and the overall CAR, the researchers distributed an online questionnaire to track students' progress and the effectiveness of the GBL approach in the classroom. The students were asked to comment on the game. They were excited to explain the difficulties and the advantages of their teamwork.

The media used for Cycle II is attached below (Figure 5, Figure 6, Figure 7).



Figure 5. Slide 16 from the PowerPoint slides: Family 100-Basic Conversation Starter

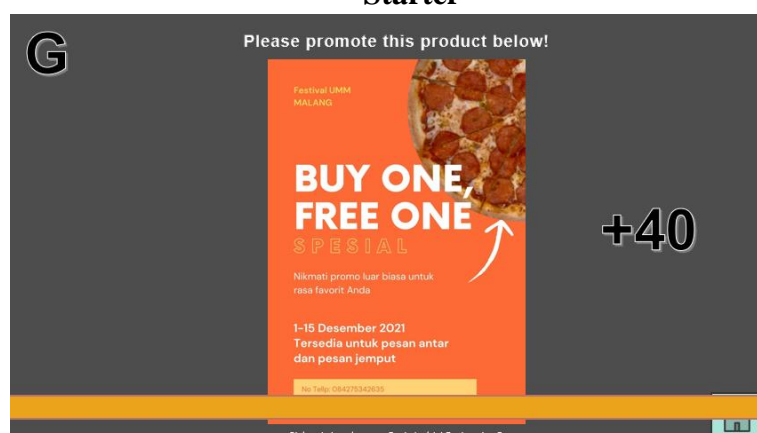


Figure 6. Slide 19 from the PowerPoint slides: Family 100-Basic Conversation Starter

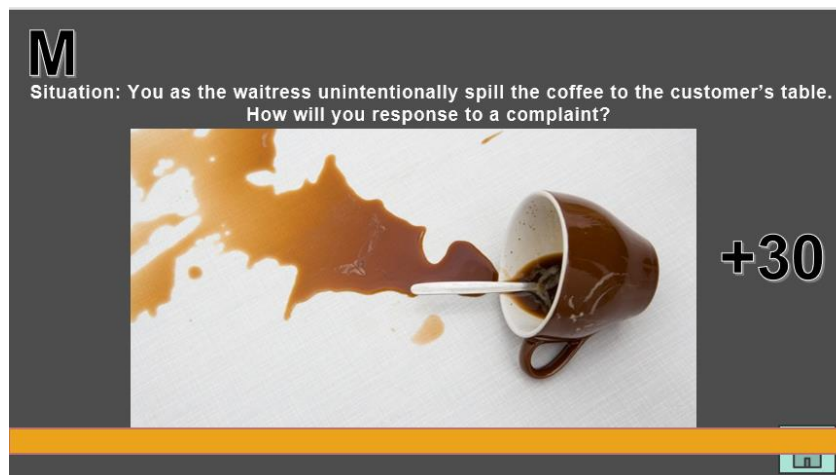


Figure 7. Slide 25 from the PowerPoint slides: Family 100-Basic Conversation Starter

Data analysis

It was previously explained that the data collected for this study was obtained from CAR activities. In so doing, the researchers prepared observation notes to track students' classroom activities and an online questionnaire to triangulate the observation result. Triangulation is critical to ensure that the obtained data is valid and measurable (Cohen et al., 2018).

Students' activities noted in the observation were analyzed through activity theory (Vygotsky, 1978) to portray activities as continually changing, complex, self-organizing systems. This theory fits the aims of this study because it helped the researchers to explicate students' experiences during learning and how they developed over the two-cycles course. It regards activity as a potential generator of both individual and organizational learning (Ell & Major, 2019).

In addition to observation notes, students' opinions were also recorded through an online questionnaire on a Likert scale. The questionnaire incorporated three domains of learning (Hoque, 2016), namely cognitive, affective, and psychomotor, to understand the impact of language learning on the students. Students' responses were analyzed using SPSS where the data was analyzed by taking the average number. The given scale is 1 to 4 as 1 for strongly disagree and 4 for strongly agree.

RESULT AND DISCUSSION

Findings in this study are underpinned by two data sources: 1) the observation notes to track students' classroom activities, and 2) the online questionnaire to triangulate the data from the researchers' observation. The explanation is further illustrated as follows.

Cycle I

Cycle I was implemented for 40 minutes. Twenty-five students were divided into two groups, consisting of around 12-13 students. The researchers explained the rules of the game (see the four steps of CAR in the Methodology section) and held a simulation to deepen students' understanding. One prevalent difference between Cycle I and Cycle II was that in Cycle I, the students were not allowed to have further discussions with their teammates once the game started. This follows

Kemmis & McTaggart (1998) where treatments for the subjects of a CAR study may be differentiated to investigate the progress.

The observed domains include students' cognitive, affective, and psychomotor as theorized by Bandura (2001) in the domains of learning. The results of the observation are summarized as follows (Table 1):

Table 1. Results of the observation from Cycle I

Domain	No	Detail	Observation		
			Yes	No	Note
Cognitive	1	Most students give their opinions during the lesson		V	Only several students could express their opinion in the class.
	2	Most students ask questions during the lesson		V	No one ask questions related to the material because they looked busy finding the answer for themselves.
	3	Most students can comment on peers' performances		V	Only several students commented on the teammate's performance.
	4	Most students can criticize peers' answers		V	No one criticize each other's answers, they were criticizing the duration used by another team.
	5	Others			Only several students were trying to guess the answer
Affective	1	Most students show enthusiasm during the lesson	V		The students actively did discussion before the game started
	2	Most students do not show anxiety during the lesson		V	Several students hesitated in answering because they were afraid of making a mistake
	3	Most students do not afraid to make mistakes in speaking English		V	Some students showed the sign of being afraid of making mistakes by saying "sorry if I am wrong", and "may I mix my language?" "I am sorry for my answer"
	4	Most students show support for each other	V		In the beginning session, the discussions session, most of the students were actively helping each other by giving advice, tricks, and tips.
	5	Others			
Psychomotor	1	Most students pay attention during the lesson	V		
	2	Most students like to practice independently	V		Yes, because the question was shown after the discussion session, they were likely to answer by themselves and ignore their friends' opinion
	3	Most students can follow instructions	V		
	4	Most students do the work seriously	V		
	5	Others			

It can be seen from the table that most students were not cognitively involved during the activity. They could hardly express their opinions, ask questions, put comments, let alone criticize their peers. Out of 25 students, only about 5 to 7 students were trying to participate in the *Family 100* game. This condition may be attributed to students' lack of prior knowledge and motivation (Bosch et al., 2021)

where students who are not used to exposure to participatory learning activities were reluctant to be actively involved. This fits the phenomenon of Indonesian students who are used to the lecturing learning method (Fenanlampir et al., 2019).

The affective domain showed a slight difference where most students were reluctant to speak and share their guesses. This finding is in line with (Zhang et al., 2020) where L2 learners tend to show lower self-efficacy, making them hesitant to speak. However, students showed their support toward each other, which signified good teamwork. This finding lends strong support to a study by Poort and colleagues (2019) where students of higher education showed solid intercultural group work. This condition fits the student composition of UMM that come from different regions throughout the country.

Contrary to the cognitive and affective domains, the psychomotor domain showed students' physical interest in the *Family 100* game show. They paid attention during the lesson so they could demonstrate their understanding of the instruction, and they worked seriously. Despite their hesitancy to speak before the class, the students practised answering independently. Self-talk is shown to be a source of self-efficacy that supports the development of students' EFL skills (Zhang & Ardasheva, 2019).

Upon completion of Cycle I, the questionnaire was distributed to confirm students' interest in learning using GBL. Student responses to the questionnaire in Cycle I are presented below (Table 2).

Table 2. The average score for students' responses on GBL with Family 100 game show

Domain	No	Item	Average Score	
			Agree	Disagree
Cognitive	1	I can give opinion during the lesson	3.5	
	2	I can ask questions during the lesson	3.5	
	3	I can comment on my friends' performances during the lesson		2.9
	4	I can criticize my friends' answers during the lesson		2.7
	5	I learn more through games in learning English	3.3	
Affective	1	Learning through games makes me more enthusiastic	3.7	
	2	Learning through games reduces my anxiety	3.3	
	3	I am not afraid to make mistakes when learning through games	3.3	
	4	I feel more supportive of my friends when learning through games	3.7	
	5	I prefer learning through games to the conventional learning method	3.2	
Psychomotor	1	I pay better attention when learning through games	3.4	
	2	I can learn independently when learning through games	3.3	
	3	I follow instructions better when learning through games	3.5	
	4	I do tasks/ homework more seriously when learning through games	3.4	
	5	Games for English learning are better than the conventional method	3.4	

The data somewhat supported that most students enjoyed learning using the games. It has also shown that the students could hardly criticize or put a comment on their peers. These results support the researchers' observation in the previous description. Hence, a triangulation was obtained, and the findings were valid.

Based on students' low achievement in the cognitive and affective domains, the researchers decided to run Cycle II by adjusting the game level and rules.

Cycle II

Cycle II was implemented for about 50 minutes. The researchers used *Trivia Games* with the topics related to Descriptions, Asking and Giving questions, campaigning, Product Promotion, and Asking and Giving Suggestions. In this cycle, the researchers adjusted the game rules. Students were given more time for discussion with their groups when the game started. The group representative was also given one round minute to think before answering the question. In this case, the teammates could help the representatives by giving clues or vocabulary needed for the answers.

The students' performance was observed as below (Table 3).

Table 3. Results of the observation from Cycle II

Domain	No	Detail	Observation		
			Yes	No	Note
Cognitive	1	Most students give their opinions during the lesson	V		
	2	Most students ask questions during the lesson		V	No one ask questions related to the material because they focused on the game
	3	Most students can comment on peers' performances	V		They were suggested what the answer should be
	4	Most students can criticize peers' answers	V		Most of them were able to state whether the answer is wring or wrong
	5	Others			
Affective	1	Most students show enthusiasm during the lesson	V		The students actively did discussion before the game started
	2	Most students do not show anxiety during the lesson	V		They enjoyed the session and spoke in English even with broken English.
	3	Most students do not afraid to make mistakes in speaking English	V		
	4	Most students show support for each other	V		Since they were allowed to help their teammates, they were actively helping their teammates by giving the vocabulary that their team did not know
	5	Others			
Psychomotor	1	Most students pay attention during the lesson	V		
	2	Most students like to practice independently		V	
	3	Most students can follow instructions	V		
	4	Most students do the work seriously	V		
	5	Others			

In Cycle II, students were more actively engaged in the activity because they received more support from their teammates. This finding fits the notion that group work better facilitates learning in higher education (Zhonggen, 2018). It was also observed that students used language-mixing as a sign of potential trans language as a core practice in an EFL context (Barahona, 2020). One prominent change in students' behaviour was also observed where students no longer practised independently but attempted to be actively involved instead. This may be attributed to the support they receive from their peers that increase their confidence in learning (Bainbridge et al., 2022), especially in a GBL.

In short, students' cognitive, affective, and psychomotor domains improved from Cycle I to Cycle II. Among the factors that enhance improvement is the adjusted game level and rules and learning topics that were more closely related to their daily practices.

At the end of Cycle II, an online questionnaire was distributed with the results presented as follows (Table 4).

Table 4. Results of the observation from Cycle II

Domain	No	Item	Average Score	
			Agree	Disagree
Cognitive	1	I can give opinion during the lesson	3.7	
	2	I can ask questions during the lesson	3.7	
	3	I can comment on my friends' performances during the lesson	3.6	
	4	I can criticize my friends' answers during the lesson	3.3	
	5	I learn more through games in learning English	3.7	
Affective	1	Learning through games makes me more enthusiastic	3.8	
	2	Learning through games reduces my anxiety	3.7	
	3	I am not afraid to make mistakes when learning through games	3.5	
	4	I feel more supportive of my friends when learning through games	3.9	
	5	I prefer learning through games to the conventional learning method	3.6	
Psychomotor	1	I pay better attention when learning through games	3.6	
	2	I can learn independently when learning through games	3.5	
	3	I follow instructions better when learning through games	3.6	
	4	I do tasks/ homework more seriously when learning through games	3.6	
	5	Games for English learning are better than the conventional method	3.6	

Based on the data above, it could be seen that the student's interest in GBL is increasing. The questionnaire results concur with the researchers' observation, which proved that the data was valid and measurable.

Summary of Cycle I and Cycle II

To better draw the comparison, the researchers put the results of the whole data in a bar chart. The improvement of students' achievement from Cycle I to Cycle II is summarized in the [figure 8](#), [Figure 9](#), and [Figure 10](#).

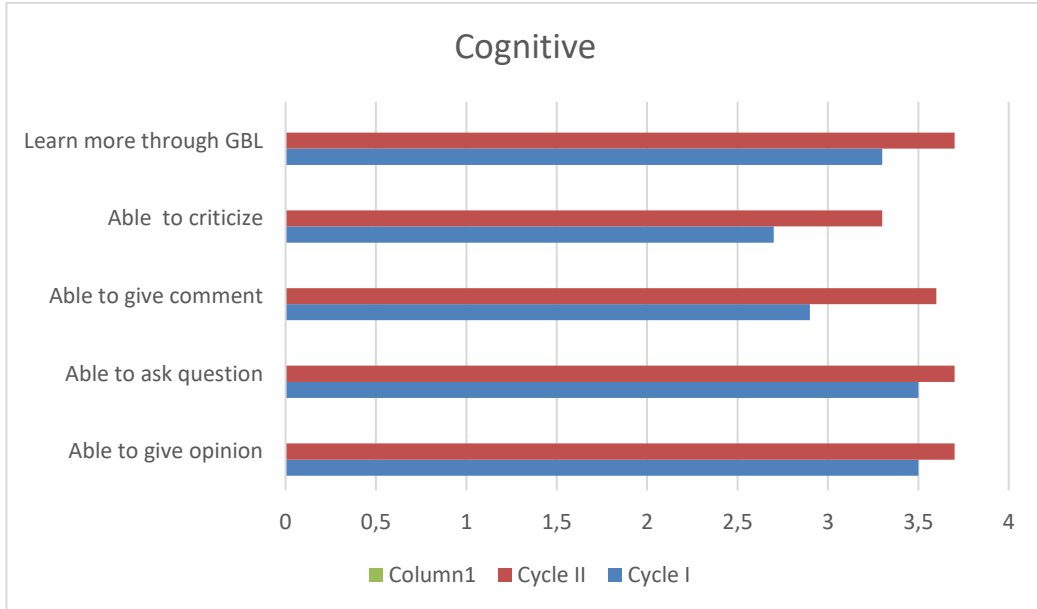


Figure 8. The comparison of students' cognitive performance

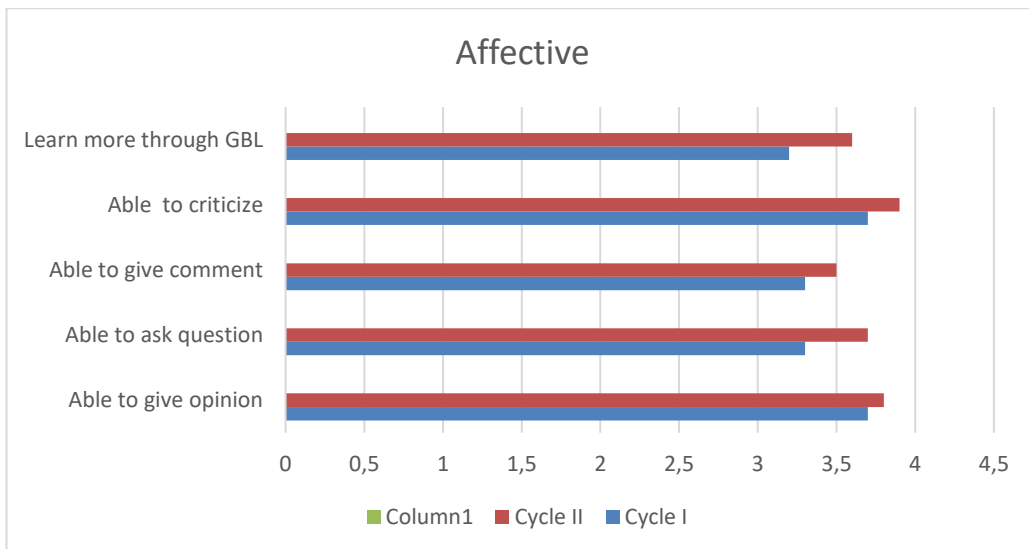


Figure 9. The comparison of students' affective performance

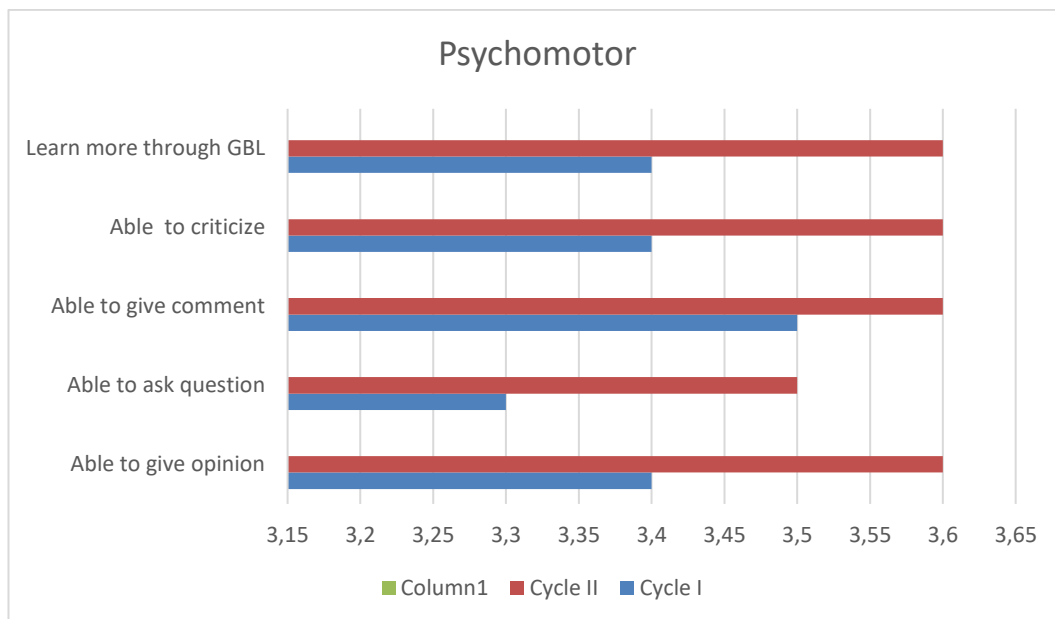


Figure 10. The comparison of students' psychomotor performance

The figures depicted that students' achievement was improved from Cycle I to Cycle II through the innovation of GBL projects adapting *Family 100* and *Trivia Game*. This finding supports the theorization of CAR where adjustment between cycles may improve learners' achievement (Kemmis & McTaggart, 1998).

Several previous studies were carried out (Mujiyanto, 2019; Sintawati et al., 2020) and even the same university (Sugiarti et al., 2015) used CAR. These studies similarly show that innovation during the teaching and learning process could enhance the quality of teaching, which eventually, improves students' achievement. Overall, the findings of this study fill the gap in the literature where GBL is the potential to improve university students' EFL learning.

CONCLUSION

Our research aims to investigate the improvement of students' speaking achievement through a GBL innovation using *Family 100* and *Trivia Game*. It has been shown that the adjustment to game level and rules could improve students' cognitive, affective, and psychomotor learning domains. Students were learning better when they were facilitated through fun activities, where they felt free to express their opinions. They were also given space to think, correct, and support peers during the learning.

Especially, the innovation of GBL is visible in the improvement of activities in Cycle I and Cycle II of the CAR. Students could learn basic start-up of Speaking conversation through the scaffolding method in Cycle I. Further, they could proceed to different topics used in learning Speaking. The questionnaires distributed in Cycle I and Cycle II also showed differences where students reported studying better upon completion of each cycle. Our study shows that the obtained findings were valid through data triangulation of the researchers' observation notes and participants' self-reflections.

The results of this study contribute to the innovation in teaching and learning Speaking skills, especially at the university. It fills the gap in the literature

where many previous studies were conducted in different areas, such as primary school learners. Our study has applied the teaching Speaking cycle where students were guided through a learning plan, monitored throughout the classroom activities, given Speaking tasks, practiced reflective learning, and given feedback to inform further classroom activities. Future research may be carried out in the area by applying GBL to other English skills, such as Reading, Listening, or Writing.

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