

# EXPLORING THE USE OF GAMIFICATION TO ENHANCE ESL STUDENTS' CLASS PARTICIPATION

Nadia Natsayah Jalim<sup>1</sup>, Wirawati Ngui<sup>2</sup>

<sup>1,2</sup>Faculty of Education and Sports Studies, Universiti Malaysia Sabah  
<sup>1</sup>nadia\_natsayah\_bp21@iluv.ums.edu.my; <sup>2</sup>wirawati.ngui@ums.edu.my

Received: 15.09.2025

Accepted: 25.10.2025

Revised: 18.11.2025

Published: 04.12.2025

DOI: <https://doi.org/10.51200/ijelp.v8i1.6809>

## Abstract

This research analysed the use of gamification to enhance ESL students' class participation among 26 students studying at a rural school in Sabah, Malaysia. The purposes of this study were to investigate whether gamification enhances students' participation during English lessons and to investigate ESL students' views on the use of gamification during English lessons. Using a qualitative approach, the participants were observed and interviewed. The key findings of this study revealed that gamification can enhance student participation and decrease language anxiety, which effectively increased the motivation of the participants. Findings also showed that the participants found enjoyment in English lessons and became more cooperative through gamification. Additionally, their motivation was influenced by their surroundings. The study is congruent with previous studies of similar contexts, and it is generally recommended for educators to experiment with the use of gamification in their practice. Future research should expand their sample diversity as secondary school students remain understudied.

**Keyword(s):** *Class participation, ESL students, gamification, gamified learning, reward*

## INTRODUCTION

In response to the modernity of the world, the education system has procured a method of bridging the gap between education and entertainment through a new type of pedagogy by gamifying education (Desnenko et al., 2021). The term gamification is commonly defined as the use of gaming components into non-gaming contexts (Zhang & Yu, 2022). Gamification can be applied according to teachers' or students' preference, for instance giving out rewards (Yacob et al., 2022) or using learning platforms such as Kahoot! (Desnenko et al., 2021).

An issue often seen in education is students lacking the motivation to learn (Hussain et al., 2021), which is also something that affects student participation (Yacob et al., 2022). Hussain et al. (2021) explained that the loss of motivation to learn is caused by students feeling overwhelmed, hopeless, or uninterested. In English as a Second Language (ESL) classrooms, Naeem et al. (2023) explained that it can be caused by ambiguous lessons, content irrelevancy, and language anxiety, the latter of which is supported by Desnenko et al. (2021) as well. Fortunately, gamification resources such as Kahoot! offer an interactive learning experience and enhance student participation (Kiiashko & Yashkina, 2021), which provides a viable solution for teachers to address issues related to student participation (Yacob et al., 2022).

Despite the many studies conducted on gamification as well as student participation, there

was a gap identified within the existing literature. Notably, there is limited inquiry on the use of gamification and how it affects participation among secondary school students in the ESL context. This study aims to address the gap through implementation of gamification such as Kahoot!, Quizziz, Baamboozle, and reward system into English lessons over the duration of three months.

In addition, the researcher presents suggestions and possible alternatives for educators who may come across similar issues in relation to student participation. Other than that, the findings of this study can also be insightful for educators specifically in the ESL field so that they are able to make the necessary changes in their practice through implementing the suggestions provided in this study, which can be beneficial for the students as well.

The research questions in this study are as follows:

1. How does the use of gamification enhance student participation during class?
2. What are the students' views towards the use of gamification in English lessons?

## **LITERATURE REVIEW**

### ***Class Participation in the ESL context***

An absence of class participation hinders students from understanding what they are learning and obstructs them from applying the skills in situations outside of their school (Razawi et al., 2023). John et al. (2023) states that disengaged students will lead to the teacher wasting time trying to control unruly students which will lead to a disturbed lesson flow. Thus, it is important for ESL educators to prioritise enhancing class participation to ensure students can achieve a good level of understanding towards the target language.

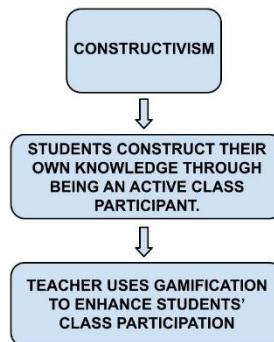
Naeem et al. (2023) explained that demotivation is the primary reason for passivity in ESL classrooms as students found the content in their textbook uninteresting and irrelevant to their language learning needs, as well as being too complex for their understanding. Additionally, it was also mentioned how teachers also contribute to students being non-participative particularly if there is a lack of teacher-student interaction. Further investigation towards ESL students also uncovers that language learning can be unsuccessful because of language anxiety and self-doubt (Rafiq et al., 2020; Desnenko et al., 2021; Rahim et al., 2023).

### ***Gamification in the ESL context***

Gamification can revolutionise pedagogy for educators across the globe as this approach can be an easy way for teachers to integrate ICT into their class (Desnenko et al., 2021), aside from improving ESL students' learning experience (Kiiashko & Yashkina, 2021). Games can attract the attention of students and when a lesson is paired with gaming elements such as leaderboards and rewards, it motivates students to interact more with the class (Bodyk & Karnoza, 2024). It also improves engagement through instilling positive feelings towards language learning and gives the opportunity for ESL students to build their own knowledge (Rafiq et al., 2020) as well as providing an interactive learning experience (Kiiashko & Yashkina, 2021), which can be especially useful for students who are adverse to the use of textbooks due to the content not being appealing to them (Naeem et al., 2023).

Constructivism revolves around the concept that to gain relevant knowledge, an individual

must be an active participant in its creation (Zajda, 2021). Gamification relates to constructivism as it heavily emphasises student participation through the environment it creates as well as the type of activities that are conducted in gamified lessons, when a lesson is paired with gaming elements such as leaderboards and rewards, it motivates students to interact more with the class (Bodyk & Karnoza, 2024).



**Figure 1:** Relationship Between Constructivism and Gamification

Figure 1 presents the correlation between constructivism and gamification. Bodyk and Karnoza (2024) expressed that students gain autonomy through gamification and promote problem-solving, which is a method that constructivism heavily emphasises as a way of knowledge acquisition. As stated, without active engagement, students cannot gain knowledge that is consequential.

## METHODOLOGY

This research involves an emphasis on students' behaviour and motivation, as such the qualitative research approach would be most suitable (Ponce et al., 2022; Oranga & Matere, 2023). Data was collected through two methods which are observations and interviews in a period of three months. Observation checklists and field notes (FN) were utilised six times each within the span of three months, four of the checklists and field notes were during a gamified lesson and two during a non-gamified lesson to observe any effects or changes that happened within the three months. Interviews were conducted at the end of the research, and the participants were briefed on the purpose of the interview and the concept of gamification to ensure the participants understood the questions. In order to retain the anonymity of the interviewees, they are referred to as A, B, and C.

Gamification was used in two ways, through gamification applications which were Kahoot!, Baamboozle, and Quizziz, and a reward system where participants were given physical rewards such as candies, stickers, and snacks when they participated during activities and lessons. Observations were utilised to address the first research question whereas interview was used to answer the second research question.

Three research instruments were used, the Student Engagement Observation Checklist (SEOC) developed by Finn et al. (1991), Observational Protocol and Interview Protocol by Creswell (2006). The SEOC originally contained 29 items, each categorised into four scales which are Effort (E), Initiative (I), Disruptive behaviour (D), and Inattentive behaviour (N). The checklist also features a Likert scale that ranges from 1 (never) to 5 (always). Only 10 items were deemed to

be the most relevant to the purposes of this study. The Observational Protocol includes a header that contains basic information about the observation and two sections. The descriptive section is a summary of the lesson, written in chronological order. The reflective notes section is the researcher's reflection of each phase or activities that was conducted during the lesson. The Interview Protocol by Creswell (2006) contains a header that includes information about the interview to ensure organisation and clarity, which was altered for relevancy purposes.

The participants in this study comprised of 26 ESL students who were 13 years old and were enrolled in a rural school in Sabah. The participants were selected using convenient sampling by choosing students that the researchers had immediate access to. The proficiency level of the participants of the study ranged from lower intermediate to intermediate with Bahasa Melayu as the main language that is used within and outside of school.

The model of Trustworthiness proposed by Lincoln et al. (1985) was utilised for this research as a method of assuring trustworthiness, credibility was established through methodological triangulation by implementing multiple methods of data collection. Stahl and King (2020) mentioned to ensure transferability, the data should be highly descriptive which can be done by including contextual information regarding the data collection. As such, highly descriptive research instruments were employed in this study including Student Engagement Observation Checklist (SEOC) by Finn et al. (1991), Observational Protocol and Interview Protocol by Creswell (2006). Lincoln et al. (1985) asserts that observation that is done continuously and repeatedly is important in enhancing dependability, Kakar et al. (2023) adds that it can also enhance the stability of the data and research. For that reason, a total of six observations were conducted to improve the dependability of this study. To establish confirmability, reflexivity was practiced through bias awareness. Participants of this study are the researcher's students and biases might skew the findings.

The data collected was analysed thematically through the six phases suggested by Braun and Clarke (2021) which involves data familiarisation, data coding, initial theme generation, theme refining, defining, and naming, and finally the write up.

## FINDINGS & DISCUSSION

The findings revealed that students' class participation was significantly enhanced, and the students held positive views towards the use of gamification. Once the data was coded, three themes that were most prominent throughout the analysis emerged, as shown in Table 1.

Research Questions	Themes	Sub-themes
How does the use of gamification enhance student participation during class?	Increased Motivation	Gamified Environment Positive Reinforcement
What are the students' views towards the use of gamification in English lessons?	Improvement in Class Activities	Activities Promoting Engagement
		Sense of Achievement
	Improvement in Classroom Environment	Cooperative Classmates

Table 2: Themes and Sub-themes

### **Theme 1: Increased Motivation**

The findings showed that using gamification, student participation was enhanced as it increased the motivation of the participants. Motivation was increased through two ways, gamified environment and positive reinforcement. A gamified environment which, as the data suggests, is an environment that is fun, competitive, cooperative, and manageable. Table 2 illustrates the improvement in positive behaviour among the participants once gamification was implemented, with Lesson 1 (L1) scoring significantly lower as it was a non-gamified lesson. Although, gamification had little to no impact on one negative behaviour, (D) Needs to be reprimanded which is generally scaled at 3. The researcher found students tend to get carried away during moments of excitement and contention which may explain why this behaviour scored higher during L5.

Item	Lesson 1 (L1): Non- Gamified Lesson	Lesson 2 (L2): Baamboozi e	Lesson 3 (L3): Reward System	Lesson 4 (L4): Non- Gamified Lesson	Lesson 5 (L5): Kahoot!	Lesson 6 (L6): Quizziz
<b>(E) Pays attention in class</b>	3 (Sometimes)	4 (Sometimes)	5 (Always)	4 (Sometimes)	5 (Always)	5 (Always)
<b>(E) Work well with other students</b>	2 (Never)	3 (Sometimes)	5 (Always)	3 (Sometimes)	5 (Always)	5 (Always)
<b>(I) Participate actively in discussions</b>	3 (Sometimes)	4 (Sometimes)	5 (Always)	4 (Sometimes)	5 (Always)	5 (Always)
<b>(E) Completes tasks given</b>	3 (Sometimes)	5 (Always)	5 (Always)	3 (Sometimes)	5 (Always)	5 (Always)
<b>(N) Doesn't seem to know what is going on in the class</b>	3 (Sometimes)	3 (Sometimes)	2 (Never)	3 (Sometimes)	2 (Never)	2 (Never)
<b>(I) Ask questions to get more information</b>	4 (Sometimes)	3 (Sometimes)	3 (Sometimes)	4 (Sometimes)	4 (Sometimes)	5 (Always)
<b>(D) Talk with classmate too much</b>	4 (Sometimes)	3 (Sometimes)	3 (Sometimes)	3 (Sometimes)	3 (Sometimes)	2 (Never)
<b>(I) Raise his/her hand to answer question or volunteer information</b>	2 (Never)	2 (Never)	5 (Always)	5 (Always)	5 (Always)	5 (Always)
<b>(E) Gets discouraged and stop trying when encountering an obstacle in school work</b>	4 (Sometimes)	3 (Sometimes)	2 (Never)	2 (Never)	1 (Never)	1 (Never)
<b>(D) Needs to be reprimanded</b>	3 (Sometimes)	3 (Sometimes)	2 (Never)	2 (Never)	4 (Sometimes)	3 (Sometimes)

**Table 2:** Student Engagement Observation Checklist (SEOC)

However, Table 2 illustrates that learning platforms wield different results as observed by the researcher. L2 which used Baamboozle, could not foster the gaming environment as effectively as L5 and L6, which used Kahoot! and Quizziz respectively. L5 and L6 scored 5 in items that are relevant to student participation which are (E) Work well with other students and (I) Participate actively in discussions, whereas L2 scored lower.

Participants were less engaged with Baamboozle possibly due to the mechanics of the application as unlike Kahoot! and Quizziz, Baamboozle only requires one device, which is controlled by the teacher whereas the other learning platforms used, the students were given a device so that they can answer the questions that are shown on the whiteboard. This means that students require a certain level of interactivity for a gamified lesson to effectively foster participation which is supported by other researchers such as Kiiashko and Yashkina (2021) and Zhang and Yu (2022) who mentioned that the autonomy that gamification provides is the reason as to why students become more motivated to participate.

Themes	Sub-themes	Excerpts from Field Note (FN)
Increased Motivation	Gamified Environment	<p><i>"—taunting made the other students— more competitive and determined"(FN, L5)</i></p> <p><i>"Group members even scolded if they noticed their friends were slacking"(FN, L5)</i></p> <p><i>"Competitiveness highly and positively impacted students' energy and participation"(FN, L6)</i></p>
	Positive Reinforcement	<p><i>"The researcher explained that volunteers will be rewarded— volunteer increased drastically" (FN, L3)</i></p> <p><i>"Encourage students to answer even if they might be incorrect"(FN, L3)</i></p> <p><i>"Requested more reflective questions so they can receive a reward for answering"(FN, L3)</i></p>

**Table 3:** Field Notes Excerpts

In addition, positive reinforcement was most effective in encouraging student participation. Students who were shy or less proficient in using English were highly participative in the lesson as they were determined to get the reward for volunteering and participating in the lesson. Additionally, students were not focused on avoiding mistakes as shown in Table 3, *"encourage students to answer even if they might be incorrect"(FN, L3)* and in Table 2, where the item *(E) Gets discouraged and stop trying when encountering an obstacle in school work*, decreased throughout the research. This signifies that positive reinforcement allows students to view making mistakes as something that is a part of the process and encourages them to try harder regardless of the outcome, essentially reducing students' language anxiety or self-doubt, which is something that has been discussed by other researchers as well such as Rafiq et al. (2020), Desnenko et al. (2021), and Rahim et al. (2023).

Unexpectedly, in subsequent lessons, the effects of the reward system were still observable even in non-gamified lessons as students were considerably more inclined to participate in discussions or activities compared to prior lessons where gamification was yet to be

implemented. This was particularly apparent in the fourth observation, a non-gamified lesson that was conducted after the researcher implemented a reward system. The researcher observed that although participants were less excited, their cooperation maintained. Once the researcher compared L1 and L4, which were both non-gamified lessons, it could be seen that there was improvement in students' overall participation and attentiveness, illustrated in Table 2, where items that pertain to attentiveness such as *(E) Pays attention in class* and *(I) Participate actively in discussions* increased from 3 to 4.

### **Theme 2: Improvement in Class Activities**

<b>Theme</b>	<b>Sub-Theme</b>	<b>Excerpts from Interview (I)</b>
Improvement in Class Activities	Activities Promoting Engagement	<p><i>"I like both, because both are fun"(B, I2)</i></p> <p><i>"The whole class is cooperative because the games are challenging"(B, I2)</i></p> <p><i>"Te games make it more fun"(C, I3)</i></p>
	Sense of Achievement	<p><i>"I feel proud whenever I get candy"(A, I1)</i></p> <p><i>"When there are games the boys become annoying. So I want to beat them"(A, I1)</i></p> <p><i>"I always get excited when I get the rewards"(B, I2)</i></p> <p><i>"Very happy and it makes me more motivated to learn English—"(C, I3)</i></p> <p><i>"I like to see me win and answer correctly"(C, I3)</i></p>

**Table 4:** Improvement in Class Activities

The interviewees held the opinion that gamification had a positive impact on their class activities as can be seen in Table 4. When asked about the use of gamification, the responses they gave had an emphasis on fun. The consensus that students have for gamification is that it provides entertainment for them, which is why they are more motivated to participate. However, it can also be understood that students became more engaged not purely because of entertainment. As shown in the table above, students found gamified lessons and activities to be challenging, and this element is what caused them to be more engaged in lessons overall. The participants' opinion can be understood as the researcher applied gamification through implementing a reward system as well as learning platforms such as Kahoot! and Quizziz, which gives students a reason to compete and challenge their classmates.

Additionally, gamified activities were able to create a better sense of achievement in the students, which promoted participation as the students wanted to pursue that sense of achievement. This finding proves that students are interested in classroom activities where they can experience gratification as well as receiving tangible achievements for their efforts, as mentioned by one interviewee, *"I always get excited when I get the rewards"(B, I2)*.

### **Theme 3: Improvement in Classroom Environment**

<b>Theme</b>	<b>Sub-Theme</b>	<b>Excerpts from Interview (I)</b>
Improvement in Classroom Environment	Cooperative Classmates	<p><i>"The boys become easier to manage during games, so activities move more smoothly" (A, I1)</i></p> <p><i>"The whole class is cooperative because the games are challenging" (B, I2)</i></p> <p><i>"My group becomes more cooperative because we want to answer questions together" (C, I3)</i></p> <p><i>"Makes the class more easier because students are easier to manage" (C, I3)</i></p>

**Table 5:** Improvement in Classroom Environment

The participants held positive views towards the classroom environment during gamified lessons. Table 5 shows that interviewees attributed the overall positive classroom environment to gamification and cooperation from their classmates. It was interpreted that students struggled with activities during English lessons because of their classmates' behaviour and that gamification addressed this issue and provided students a better experience. Other than that, the participants cited that their classmates were more cooperative because gamification made activities more challenging. This finding validates Yacob et al.'s (2022) statement that gamification gives opportunities for students to interact and collaborate with their classmates, which may explain why the students perceive their classmates to be more cooperative in gamified lessons. Moreover, based on the responses shown in Table 5, non-gamified lessons perhaps provide insufficient challenge for the students, which causes unenthusiasm to participate and that students are impartial to activities that do not contain any obstacles as the students mentioned that their classmates are more cooperative because of how gamification makes activities more challenging.

### **Limitations**

Despite data concurring with previous findings, there are limitations in the study such as researcher bias. Data and findings could possibly be interpreted in a manner that is positive or beneficial for this study, as such the researcher could also have interpreted behaviours that were observed during this study in a biased way that aligns with what the researcher wanted to observe. Additionally, although participants were asked to give their honest opinions, participant bias might have affected the outcome as participants might have answered questions according to what they think the researcher wants instead of giving an unbiased opinion.

### **Recommendations**

The findings of this study proved that gamification using apps such as Kahoot!, Quizziz, and Baamboozle holds great potential in improving secondary school students' participation during English lessons. Teachers should therefore consider integrating digital games to motivate students to learn English in school. This is especially aligned with the Ministry of Education's aim to improve the digital literacy of school students as well as teachers. A paper-free option is also

available on Quizziz, this may be a useful alternative if students cannot bring gadgets to school. Since this study was conducted in a relatively short period of time, future studies can focus on the long-term effects of implementing gamification in English classes.

## CONCLUSION

The findings of this study suggest that the use of gamification and receiving positive reinforcement enhances student participation and that students held positive views on gamified English lessons. The findings indicated that gamification can enhance student participation and decrease language anxiety, which effectively increases the motivation of students. Findings also showed that the students find enjoyment in English lessons through gamification, become more cooperative through gamification, and that their motivation is influenced by their surroundings. As such, educators should consider experimenting with their teaching practices by utilising gamification, especially for those struggling with students who seem disengaged and unmotivated to learn English. In particular, the study demonstrates how gamification can become a substantial tool to further one's practice or improve the learning experience of students.

### Co-Author Contribution

The authors declare no conflict of interest. Author1 conducted the fieldwork, prepared the literature review, and oversaw the writing. Author 2 guided the data collection procedures and reviewed the manuscript.

### Ethics Statement

The research followed all applicable ethical standards. Participation was voluntary, and confidentiality was ensured.

## REFERENCES

Bodyk, O., & Karnoza, I. (Eds.). (2024). Gamification in English Language Teaching: Theoretical Foundations of Motivation Via Game Strategies. *Complexities of Education of Modern Youth and Students*. <https://doi.org/10.46299/sg.2024.2.15>

Braun, V., & Clarke, V. (2021). Thematic Analysis. In *SAGE Publications Ltd*. SAGE Publications Ltd. <https://uk.sagepub.com/en-gb/eur/thematic-analysis/book248481>

Creswell, J. W. (2006). *Qualitative inquiry and research design: Choosing Among Five Approaches*. SAGE Publications, Incorporated.

Desnenko, S., Pakhomova, T., Starostina, S., & Tokareva, J. (2021). Gamification in the formation of digital skills of future teachers. *E3S Web of Conferences*, 273, 12118. <https://doi.org/10.1051/e3sconf/202127312118>

Finn, J. D., Folger, J., & Cox, D. (1991). Measuring Participation among Elementary Grade Students. *Educational and Psychological Measurement*, 51(2), 393–402. <https://doi.org/10.1177/0013164491512013>

Hussain, S., Akram, M., & Hussain, M. A. (2021). Effects of Motivational Strategies on ESL Learners' Proficiency: A Study of Graduate Students. *Pakistan Journal of Educational Research*, 4(1). <https://doi.org/10.52337/pjer.v4i1.153>

John, J. G., Gopal, R., Singh, C. K. S., Yesupatham, K. M., & Pratama, H. (2023). Reaching out to group contingencies in the ESL classroom. *Journal of Higher Education Theory and Practice*, 23(1). <https://doi.org/10.33423/jhetp.v23i1.5794>

Kakar, Z. U. H., Rasheed, R., Rashid, A., & Akhter, S. (2023). Criteria for Assessing and Ensuring the Trustworthiness in Qualitative Research. *International Journal of Business Reflections*, 4(2), 150–173. <https://doi.org/10.56249/ijbr.03.01.44>

Kiiashko, D., & Yashkina, V. (2021). Using the Platform Kahoot! as a Means of Gamification in the Process of Teaching English as ESL. *Anglistics and Americanistics*, 1(18), 79–83. <https://doi.org/10.15421/382113>

Lincoln, Y. S., Guba, E. G., & Pilotta, J. J. (1985). Naturalistic inquiry. *International Journal of Intercultural Relations*, 9(4), 438–439. [https://doi.org/10.1016/0147-1767\(85\)90062-8](https://doi.org/10.1016/0147-1767(85)90062-8)

Naeem, W., Ashraf, Z., & Afsar, Z. A. (2023). Factors causing ESL students' demotivation to learn English. *Global Language Review*, VII(I), 114–122. [https://doi.org/10.31703/glr.2023\(viii i\).11](https://doi.org/10.31703/glr.2023(viii i).11)

Oranga, J., & Matere, A. (2023). Qualitative Research: Essence, types and Advantages. *OALib*, 10(12), 1–9. <https://doi.org/10.4236/oalib.1111001>

Ponce, O. A., Gómez-Galán, J., & Pagán-Maldonado, N. (2022). Qualitative research in education. *IJERI International Journal of Educational Research and Innovation*, 18, 278–295. <https://doi.org/10.46661/ijeri.5917>

Rafiq, K. R. M., Pazilah, F. N., Tong, G. Y., Yunus, M. M., & Hashim, H. (2020). Game On! Development and evaluation of computer games for ESL Classroom. *International Journal of Scientific and Technology Research*, 9(2), 1976–1980. <https://www.ijstr.org/final/print/feb2020/Game-On-Development-And-Evaluation-Of-Computer-Games-For-Esl-Classroom.pdf>

Rahim, M. E. A., Rahim, E. M. A., Razawi, N. A., & Mohamed, N. (2023). MORE Thank Child's Play: Tackling speech anxiety among Malaysian ESL learners through Gamification. *Ideology Journal*, 8(2). <https://doi.org/10.24191/ideology.v8i2.450>

Razawi, N. A., Mohamed, N., Abd Rahim, M. E., & Abd Rahim, E. M. (2023). Improving the use of lecture videos to increase student engagement in ESL blended learning classrooms. *Students' Perception and Challenges of Learning the English Subjects Through Online Classes*, 18(2), 71–99. <https://ir.uitm.edu.my/id/eprint/81001/>

Stahl, N. A., & King, J. R. (2020). Expanding Approaches for Research: Understanding and Using Trustworthiness in Qualitative Research. *Journal of Developmental Education*, 44(1), 26–28. <https://www.jstor.org/stable/45381095>

Yacob, N. S., Rahman, S. F. A., Mohamad, S. N. A., Rahim, A. a. A., Rashid, K. K. A., Aldaba, A. M. A., Yunus, M. M., & Hashim, H. (2022). Gamifying ESL Classrooms through Gamified Teaching and Learning. *Arab World English Journal*, 8, 177–191. <https://doi.org/10.24093/awej/call8.12>

Zajda, J. (2021). Constructivist learning theory and creating effective learning environments. In *Globalisation, comparative education and policy research* (pp. 35–50). [https://doi.org/10.1007/978-3-030-71575-5\\_3](https://doi.org/10.1007/978-3-030-71575-5_3)

Zhang, Q., & Yu, Z. (2022). Meta-Analysis on investigating and comparing the effects on learning achievement and motivation for gamification and Game-Based learning. *Education Research International*, 2022, 1–19. <https://doi.org/10.1155/2022/1519880>