

## On the Improvement of EFL Students' Virtual Interaction via Game-based Tasks

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Received: 18 December 2021

Accepted: 17 July 2022

### Abstract

The role of games in improving EFL students' motivation to participate in interactive practices has been highly emphasized in past research. Although Iranian students are reluctant to interact in online language classes, the current study explored the impact of using game-based tasks on Iranian students' virtual interaction in EFL classes. The subjects included 35 female students in the seventh grade of a junior high school in Tabriz, Iran were selected by convenience sampling method. Classroom Action Research was conducted in four stages: planning, acting, observing, and reflecting. Innovative game-based activities, such as Roleplay, This or That, Café Owner, and Let's Make Salad were used to improve students' interaction. Interviews, tests, and class observations were used to collect and triangulate the data. In this study, descriptive statistics were used to analyze the obtained data. The findings revealed that the use of games could improve students' interaction in online language classes. The results can yield useful implications for language teachers and materials developers in increasing EFL students' virtual interaction through different game-based techniques.

*Keywords:* Action Research; EFL students; Game-Based Tasks; Online Classes; Virtual Interaction

### 1. Introduction

In the educational context, digital transformation is not new (Kopp et al., 2019); however, with the rapid spread of the Coronavirus, the director-general of the World Health Organization (WHO) March 2020 announced the necessity of social distancing during this pandemic (WHO, 2020). Therefore, the pandemic pushed schools to migrate to online platforms (Adedoyin & Soykan, 2020). This condition led to emergency online education (Bozkurt et al., 2020) that would bring a revolution in the teaching-learning process while adding technology-related problems to the educational ones.

English, as an international language, is one of the subjects being taught in Iranian schools and plays an important role in high school courses (Khanahmadi & Nasiri, 2022). Since English is considered a foreign language in Iran, learners of this language might get few

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opportunities to practice a real conversation or be familiar with its people or culture (Chasten, 1976). It is considered that learning a language occurs by interaction through negotiating the meaning (Long, 1996), and one of the most important elements in learning a language, especially in communicative language learning is interaction (Sundari, 2017). Moreover, according to Brown (2000), interaction is the heart of communication and is defined as the “collaborative exchange of thoughts, feelings or ideas between two or more people, resulting in a reciprocal effect on each other” (p. 165). It can also increase students’ commitment to learning as well (Gabriel, 2004; Rovai & Barnum, 2003).

Interaction in the online environment is different from face-to-face classes (Kearsley, 2000). While interaction is face-to-face in physical classrooms, it is through the school's online platforms or social media applications in online classes. However, not every student is willing to participate in these types of classes. Understanding online interaction between students is important as it affects their learning (Trentin, 2000). Flottemesch (2000) argues that the quality of online courses is judged by learners' perceptions of their online interactions in class. Given this, maintaining balanced online interaction is a challenging task for a teacher while keeping students engaged and improving their communication skills and communicative competence (Mariano & Silva, 2018). To enhance interaction and cooperation, teachers should use authentic activities to create a meaningful and joyful learning environment (Ahmadpour et al., 2022).

As Israel (2017) puts it, games can provide various levels of interaction. In game-based learning (GBL), games are integrated into the learning process to reach educational objectives (Kim et al., 2009). In addition, GBL is unique in that learners gain satisfaction from solving problems by engaging themselves in the problem-solving process (Anonymous, 2021). Moreover, it allows the students to learn in a non-threatening environment and obtain social interaction with the environment and their peers (Anonymous, 2021).

Interaction is necessary (Hanum, 2017) and a critical factor in online education (Jiang et al., 2019). Furthermore, effective teacher-student interaction is referred to as an essential condition for deep learning in online education (Mu & Wang, 2019). Research has shown that interaction greatly influences foreign language learning. However, interaction in the online classroom does not take place automatically and requires incorporation into the instructional design (Ragan, 1999). Different teaching methods rarely produce interactions between students and instructors in online environments or (in some cases) focus on instructor-student interaction. Moreover, students, particularly in Iran, did not put effort into interaction in online classes as well. It is worth noting that most Iranian students’ online school classes take place at Shaad Application. Shaad is an educational social medium designed by Iran's ministry of education after the Coronavirus breakout to enable online education for Iranian students. It has been updated several times and has provided text and voice chat to its users in the current research.

Furthermore, it is important to mention that despite extensive research on gaming, few Action Research (AR) studies have focused on whether or not GBL can promote interaction in the classroom. An extensive literature search using educational databases did not reveal much-published research regarding the relation between using GBL and online classroom interaction. Thus, the results of this study can be useful for teachers and material developers to get acquainted with the possible effects of gaming on students’ online interaction.

The current research, accordingly, aims to examine the effect of using GBL on the improvement of EFL learners' virtual interaction, especially for classes held during the Coronavirus pandemic as emergent online classes with little current attention to creativity, motivation, interaction, and engagement. Thus, the research questions of the present study are as follows:

Q1. Can Game-based learning improve virtual interaction in Iranian EFL online classes?

Q2. Is there any difference in the number of students' meaningful messages after gaming sessions?

According to the questions mentioned above, the study aims at testing the following null hypothesis:

H<sub>0</sub>1. Game-based learning cannot improve virtual interaction on online platforms.

## **2. Review of Literature**

### *2.1. Theoretical Background*

*2.1.1. Interaction.* Thurmond (2003) defined interaction as the engagement of the learner with the content, teacher, other learners, and technology that is used. Interaction should result in a reciprocal exchange of information that will improve knowledge development (Thurmond, 2003). It can enhance learners' language ability and help them use language successfully (Murtiningrum, 2009).

In an interactive classroom, students are expected to be active and use language to show their mastery of language (Murtiningrum, 2009). Teachers should use language activities that provide interaction. Frequently used methods such as lecturing or recitation are not appropriate modes of language for providing enough interaction (Murtiningrum, 2009). Concerning technology, online interaction can take place through different communication tools such as chats, emails, announcements, etc. (Davidson-Shivers, 2009).

There are different forms of interaction (Davidson-Shivers & Rasmussen, 2006; Moore, 1989; Wagner, 2001) including student-student interaction (students work together in small or large groups); student-instruction interaction (students work with materials or activities); student-learning management system interaction (the application that students can use to manage and complete their assignments and check their grades); and instructor-student interaction (the teacher and learners work together). The last type has been reported to be the most dominant pattern of interaction (Dagarin, 2004).

*2.1.2. Game-based Learning.* Although games are not new ideas in the EFL context and they are believed to be at the center of language teaching programs to encourage interaction (Hadfield, 1990; Yolageldili & Arıkan, 2011), not every teacher is aware of them and their significant role as a key component in EFL classrooms (Gozcu & Caganaga, 2016). A game presents novelty, provides a better atmosphere, and helps learners to focus on the lesson (Heinich, et al., 2002). Educational games which are controlled by rules (Hadfield, 1990) can make the learning process easier and more effective (Cheng & Su, 2011). Besides these elements, they have several other benefits such as attracting students' attention as they are fun and interesting (Mei & Yu-Jing, 2000), preventing boring ordinary classes, and making a positive environment (Gozcu & Caganaga, 2016). Qualified educational games have several

qualities to contemplate among which interactivity is an essential one (Plass et al., 2015). They can also include dynamic visuals, regulations, and objectives (Boctor, 2013).

According to Israel (2017), Game-based Learning (GBL) is the “integration of games and the learning process” (p. 3) and focuses on educational content objectives through games (Kim et al., 2009). GBL should help students to be involved in their education (Boctor, 2013). Using game-like interactions, simulation strategies, or structures to support educational goals (Israel, 2017). GBL reminds learners of what they have already learned, makes complex lessons easier, and engages learners in-class activities (Israel, 2017). Students can recall previous knowledge through games more than the other approaches (Adipat, et al., 2021). However, the teacher should be careful of what games they use in their classroom and relate them to the syllabus, as well as the textbook (Gozcu & Caganaga, 2016).

GBL advocates believe that learners get motivated by educational games. (e.g., Garris et al., 2002; Huang et al., 2013; Malone, 1981; Prensky, 2001). Motivation in learning occurs when learners perceive their competence, experience autonomy, and sense of relatedness to others (Deci & Ryan, 2013).

However, the relationship between educational games and motivation is not always positive (Chen & Law, 2016). Game designers face some challenges in generating intrinsic motivation. Intrinsic motivation is “The doing of an activity for its inherent satisfactions rather than for some separable consequences” (Ryan & Deci, 2000, p56).

*2.1.3. Roleplay.* Role-play is an activity suggested in several approaches for language learning purposes (Tatayama, 1998). The role applies to the part the learner acts according to the teacher's instructions (Richard & Rodgers, 2001). It can enable learners to improve their real-life spoken language (Cook, 2016). For example, in a language class, the teacher may choose a conversation and repeat it out loud and after that, she may choose learners to play the dialogues. This can help learners overcome their shyness and fear (Celce-Murica, 1991). The other kind of activity is that learners pretend to be in a different social context with different social roles. In this kind of activity, teachers give some information about learners' roles such as their personality, names, characteristics, what they think, etc. (Kayi, 2006). Role-play also helps the learners to use their knowledge of the language in different contexts (Richards, 1985).

## *2.2. Related Studies*

Games have various roles and advantages in the classroom (Boyle, 2011; Constantinescu, 2012). Therefore, they have been popular in EFL contexts, and a plethora of research has investigated their effects on various learner and teacher-related variables. Different studies have examined games in face-to-face classrooms, digital games, virtual reality games, computer games, and video games in the educational context. These studies have revealed that games can be useful in classrooms.

For instance, recent research by Christopoulos et al. (2018) focused on learners' engagement while using Hybrid virtual learning, investigating the impact of educational and leisure games on university students. Their results showed that the impact can be positive in the engagement context; however, it varies as leisure games attract more attention. It indicated that not all students are attracted to the same game design. The findings also suggested that

game-like content can improve students' engagement, albeit with no significant effect on the learning process. Furthermore, the study emphasizes that educators should be careful with game designs as the purpose of increasing motivation or engagement is to expand their knowledge.

Yusoff et al. (2017) did research on computer games. They aimed to review related studies in educational games and the function of games in the interaction design tool. Their results revealed many benefits of playing games, showing that games have the potential to educate people based on concept interaction design.

Reinders and Wattana (2015), in a similar study, examined 30 students that attended 18 face-to-face classes and 6 sessions of online Ragnarok games. The authors analyzed samples of both text and voice messages and they found that the games led to significant English interaction.

Creighton and Szymkowiak (2014) studied the effect of cooperative and comparative games on students' classroom interaction frequency. The participants were 32 schoolchildren with learning and behavioral difficulties. They revealed that using cooperative games in the class resulted in a higher amount of interaction than competitive games. Therefore, the study suggested that cooperative games can enhance the degree of classroom interaction.

In addition, Aldabbus (2008) worked on two traditional classes, and two language game classes. Findings showed that a game-based approach can provide more learning opportunities while making an enjoyable environment for students to increase interaction between teachers and students. Findings presented that language games had different positive impacts on the nature of class interaction, teachers' perception of using language games, their behavior with pupils, and pupils' language use.

As suggested by previous studies, games have been successful in face-to-face classrooms. Also, different game designs can be successful in increasing levels of interaction. What is missing in the literature is whether game-based learning can increase virtual interaction in online classes in the Iranian context. Thus, the purpose of this study is to investigate if GBL can improve Iranian students' interaction in the online EFL environment during the pandemic era.

### **3. Method**

#### *3.1. Participants and Setting*

To achieve the objective of the present study, 35 female EFL students being educated in the seventh grade of a junior high school in Tabriz, Iran, were selected as the participants of this study. Subjects were familiar with online classes, and their ages ranged between 13 and 14. Participants were selected by convenience sampling method. Convenience sampling (also identified as Haphazard Sampling) is a nonrandom sampling in which members of the target population who meet specific standards, such as easy accessibility, geographic location, availability at a particular time, or willingness to participate, are included in the study (Dörnyei, 2007). In addition, a 21-year-old teacher trainee who was one of the researchers was in charge of teaching. She was a junior TEFL student at Farhangian University and was participating in her internship classes.

### 3.2. Instrumentation

The data were collected and triangulated using interviews, tests, and class observation. The observation process had two phases. The first phase started several weeks before implementing treatment to recognize the problem and adopt the best solution. The second phase was followed during the implementation of treatment to see and record results. The next tool was interviewing. A semi-structured interview with ten fixed questions and some open-ended questions was conducted in two phases. In qualitative research, the semi-structured method is the most commonly used interview technique (DiCicco-Bloom & Crabtree, 2006). The interview questions are planned (Mason, 2004) and the interview list contains the study's main subjects (Taylor, 2005). It provides a concentrated structure for the interview discussion, although it should not be strictly followed (Kallio et al., 2016). Researchers interviewed in the Persian language. The first interview was given to the teacher and ten students before applying treatment to record their ideas and comments, and the second one was after the treatment. After this, the researchers used indirect performance-referenced tests to observe students' interactivity in the classroom. Finally, the researchers analyzed the data by comparing the results obtained from observation, interviews, and class activities. For this purpose, grounded theory was followed. Grounded theory is a research approach with simultaneous data collection and analysis (Flick, 2013). In grounded theory method analysis is integrated and conducted interactively with data collection (e.g., Bryant, 2017; Corbin & Strauss, 2015, as cited in Bryant & Charmaz, 2019). However, there ought to be an organized scheme (Bryant & Charmaz, 2019). Coding as a process of grounded theory is a form of data management that involves concepts and categories (Blaikie, 2000). Different games were used in this study, including Roleplay, This or That, Café Owner, and Let's Make Salad.

- *Roleplay*: In this activity, all students had to learn the original conversation of the textbook. Then, some students were randomly selected to play a role in the conversation. They had the opportunity to choose their role. This activity was not a typical parroting role play, and students had to change names, places, foods, etc.
- *This or That*: This or that is an easy game that normally entails answering random questions like "apple or banana?". However, in this class students were supposed to ask the full form of this or that questions from their friends so that they could fill the blanks in the school's textbook (e.g., "What's your favorite food? Meat or chicken?")
- *Café Owner*: Students were given a blank café menu and they were supposed to fill it according to the fruits, foods, and drinks they had learned in that session. Then, they had to answer random questions related to the lesson.
- *Let's Make Salad*: This activity is a short game to help students use vocabulary in a context. In this activity, students had to name their favorite salad and the recipe to make it.

### 3.3. Procedures

The research design of this study is Action Research (AR). According to O'Brien (2001), AR is the process of learning by doing that a group of people try to resolve a certain problem, and if they are not satisfied with the results, they can repeat the cycle. It improves educational practice by gathering evidence to implement a change (Clark et al., 2020). In AR,

results emerge while the action develops and although not absolute, they are emergent and ongoing (Koshy, 2010). Therefore, AR has a purposeful intent to improve, refine, reform, and problem-solve issues in educational contexts (Clark et al., 2020).

The present study followed four phases of AR: planning, acting, observing, and reflecting. In the first step, researchers prepared different games for class sessions and planned for each session. In the acting step, researchers implemented the treatment, including games like Role play, This or That, Café Owner, and Let's Make Salad to solve the problem. One of the researchers was in charge of implementing games in the classroom. The observation step was done during the acting step to recognize changes in students' behavior patterns. Finally, in the reflecting step, researchers analyzed data and compared and contrasted them to gain the results.

Before starting the AR process, the researchers joined the online class and observed the teaching and learning process. They got familiar with the teacher and students. The classes were observed to recognize the problem and find the best solution for several weeks before starting research.

The procedure was conducted in two sessions, each session lasting one hour and 10 minutes. In the first session, a normal teaching process was adopted. Normal teaching refers to the usual process of teaching that the class's teacher has preferred. In this case, the teacher used to send all the recorded voices and videos to the group, then gave students 20-30 minutes to cover the whole lesson. After the students announced their readiness, the teacher asked students to answer the exercises in the school textbook, *Prospect One*. However, in the second session, the researcher was supposed to use games. After teaching the main lesson in each part of the textbook, they made sure that students learned each part of the lesson completely, then presented the textbook's activities with a game mixture. At first, participants received instructions through the Shaad application. Then, the researchers sent new forms of activities to students. In some of the activities, students were divided into groups. The interaction in the Shaad application was through text and voice messages. All data remained and saved in the Shaad application's history.

## 4. Results and Discussion

### 4.1. Results

In order to answer the first research question, the study participants got involved in some activities to reveal whether game-based learning could improve interaction in the online classroom. The process took place in two sessions. In the first session, there were no games and the normal teaching process was adopted; however, in the second session, several games were implemented to increase students' interaction. A comparison of these two sessions can be seen in Figures 1 and 2.

Figure 1 shows the data collected from the first session. This graph demonstrates that 42 messages were sent by students and 89 messages were sent by the teacher. According to the results initiating the interaction was mostly by the teacher. Only 13 out of 35 students participated in the classroom, and 8 students volunteered to participate in the activities.

Figure 1  
*First Session's Data Collection*

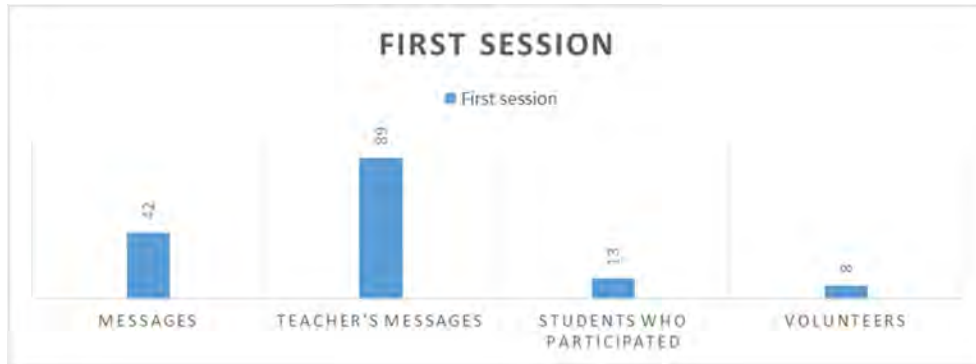


Figure 2 provides a summary of collected data in the second session. Based on this graph, it could be said that there was a significant change in students' interaction patterns. The interaction was more student-centered and 19 students were willing to play games. 25 students participated in the activities; however, some students were not willing to participate in games either.

Figure 2  
*The Second Session's Data Collection*



Table 1 presents the checklist for the class observation. Based on the following table, not all of the students participated in the class, neither the normal teaching method nor the game-based method. Some students enjoyed the games and were interested in extra games. However, there was a significant change in students' interaction patterns. Students with no or low interaction in the normal method started asking questions about games and volunteering to play games. Before sending the main activity to the class group, it was made sure that students read the instructions and answered their questions to avoid misunderstanding during the activity. Games made students more enthusiastic to interact during class time and they were more willing to pay attention to the lessons to be able to play the related games. According to Table 1, the obtained results were satisfying to both authors and the class.



Table 1  
*Classroom Observation Checklist*

Description of class observation	First session	Second session
Are all students attending the activity?	No	No
Are students interested in the activity?	No	Yes
Is there a change in students' interaction?	No	Yes
Are students curious about the activity?	No	Yes
Do students understand the activity?	Yes	Yes
Are students willing to do more practice on the subject?	No	Yes
Are students willing to initiate interaction?	No	Yes
Are the results satisfying?	No	Yes

*4.1.1. Students' Responses on GBL.* According to students' viewpoints based on class observation and interviews, they enjoyed games, and they were more willing to participate. They believed games were more of an entertaining nature rather than a teaching method. They said games could provide more opportunities for interaction and as they followed rules and a goal to achieve, the students felt that games could create a competitive environment. Excerpts from student interview transcripts are presented below.

"Our friends seemed to have lots of energy. Everyone was replying. I was trying to type faster to be chosen for the game." (1)

"I was talking with my friend, and she wasn't satisfied with games at first. She said it is not in the book so it is waste of time. But I believe we don't get bored and we learn something new. It was practical for me." (2)

"It was fun for me. Learning vocabulary with games was easier. I didn't even have to review them after class. We repeated words so many times in the games." (3)

"When you explained the instruction of the games, I felt more serious about joining to the activity. It gave me sort of responsibility." (4)

Consequently, the present study aimed to investigate the improvement of students' virtual interaction through GBL, following the four phases of AR. From the results of the study and research findings, it can be seen that students made improvements in the second session, and they were more interactive in the first session. Students also seemed more willing to participate in the activities. Through observation in the class at first, some students seemed reluctant to play games and regarded them as useless, however, they were enjoying games after the researchers gave them instructions. Students found that interacting with each other is important for learning, and games can help them to meet educational goals.

As noticed, it could be said that GBL had a significant effect on the student's interaction. Furthermore, it is shown that using appropriate games in an online class can increase interaction while meeting educational goals. However, in this study, games could be more effective if games were applied every session during school time and students had a positive former experience with games. In applying games, teachers should consider that it is of high significance to design an appropriate game that is less time-consuming and more in line with the textbook's objectives. Games are, therefore, useful tools in the EFL contexts, since they can motivate students, increase class interaction, help shy students, ease the learning process, bring new experiences to class, and teach hidden objectives. Thus, the obtained results are in accordance with Israel's (2017) study who supported the idea that games could provide some levels of interaction in the classroom and raise their enjoyment and motivation. Besides, our findings are consistent with Aldabbus's (2008) study, indicating that using games can have a significant effect on the nature of the interaction. Also, some authors such as Wattana (2013),

Gaşior (2019), and Jaramillo Arias (2021) conducted research on the effect of games in increasing interaction in the classroom, and their results have shown that different games can be effective in this case.

## 5. Conclusion

In conclusion, this study aimed at improving students' virtual interaction through GBL. It investigated 35 female students who were studying seventh grade of junior high school in Tabriz, Iran. The findings showed a significant difference in interaction patterns between the first session and second session indicating that GBL could increase interaction in online classes. In addition, the study revealed more advantages of using games in language online classes: motivating students, providing competition for students, making it easier to implement textbook practices, covering educational goals, and improving pair and group work.

Accordingly, some suggestions are presented based on this research's findings. EFL Teachers are recommended to use GBL to improve their students' interaction. They should also clearly explain the instruction of games to students. Moreover, game-based activities can be implemented as group or pair tasks. Teachers are also recommended to select and design class games that meet educational goals.

The AR study, however, had some limitations. The main limitation of this research lies in the effect of students' prior negative beliefs about games on their participation patterns. Although learners showed enthusiasm toward participation in games, some students did not believe that games could lead to educational goals. The second limitation can be attributed to the length of the study which could be more effective if it lasted for more sessions.

This study provides some suggestions for further research. Future research can investigate the relationship between virtual interaction and different teaching methods. The effective games for improving interaction can be also investigated in terms of Iranian school settings. The effect of teachers' and students' beliefs about games on the learning process can be also the focus of further research.

## Declaration of Conflicting Interests

The authors declare that they have no conflicts of interest.

## Funding

The authors received no financial support for the research and publication of this article.

## References

- Adedoyin, O., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*.  
<https://doi.org/10.1080/10494820.2020.1813180>
- Adipat, S., Laksana, K., Busayanon, K., Asawasowan, A., & Adipat, B. (2021). Engaging students in the learning process with game-based learning: The fundamental concepts. *International Journal of Technology in Education (IJTE)*, 4(3), 542-552.  
<https://doi.org/10.46328/ijte.169>
- Ahmadpour, F., Mohamadi, S., & Lotfi Dehgan, Z. (2022). The effect of using gaming techniques on students' oral language abilities in EFL online classes: Action research. *Journal of Research in Techno-Based Language Education*, 2(2).

- Aldabbus, S. (2008). *An investigation into the impact of language games on classroom interaction and pupil learning in Libyan EFL primary classrooms* (Doctoral dissertation), Newcastle University.
- Anonymous. (2021). *Methods of teaching*. Retrieved from <https://news.payperlez.com/wp-content/uploads/2021/02/METHODS-OF-TEACHING-R.M.E-UNIT-3.docx>
- Blaikie, N. (2000). *Designing social research*. Cambridge: Polity Press.
- Boctor, L. (2013). Active-learning strategies: The use of a game to reinforce learning in nursing education. A case study. *Nurse education in practice*, 13(2), 96-100.
- Boyle, S. (2011). Teaching Toolkit: An introduction to games-based learning. *UCD Dublin, Ireland: UCD Teaching and Learning/ Resources*. Retrieved from <https://www.ucd.ie/t4cms/UCDTLT0044.pdf.pdf>
- Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., ... & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1-126. <https://doi.org/10.5281/zenodo.3878572>
- Brown, H. D. (2000). *Teaching by Principles* (2nd Ed.). Pearson ESL.
- Bryant, A., & Charmaz, K. (Eds.). (2019). *The SAGE handbook of current developments in grounded theory*. Sage.
- Celce-Murica, M. (1991). *Teaching English as a second language or foreign language* (2<sup>nd</sup> ed.). New York: Newbury House Cengage Learning.
- Cheng, C.-H., & Su, C. H. (2011). A game-based learning system for improving student's learning effectiveness in system analysis course. *Procedia - Social and Behavioral Sciences*, 31, 669–675.
- Chasten, K. (1976). *Developing second language skills, theory, and practice* (3<sup>rd</sup> Ed.). Rand McNally College Publishing Company.
- Chen, C.-H., & Law, V. (2016). Scaffolding individual and collaborative game-based learning in learning performance and intrinsic motivation. *Computers in Human Behavior*, 55, 1201-1212.
- Christopoulos, A., Conrad, M., & Shukla, M. (2018). Interaction with educational games in hybrid virtual worlds. *Journal of Educational Technology Systems*, 46(4), 385-413.
- Clark, J., Porath, S., Thiele, J., & Jobe, (2020). *Action research*. New Prairie Press, Kansas State University Libraries.
- Constantinescu, R. S. (2012). Learning by playing. Using computer games in teaching English grammar to high school students. In *Conference proceedings of e-Learning and Software for Education (eLSE)* (Vol. 8, No. 02, pp. 110-115). Carol I National Defence University Publishing House.
- Cook, V. (2016). *Second language learning and language teaching*. Routledge.
- Creighton, S., & Szymkowiak, A. (2014). The effects of cooperative and competitive games on classroom interaction frequencies. *Procedia - Social and Behavioral Sciences*, 140, 155–163.
- Dagarin, M. (2004). Classroom interaction and communication strategies in learning English as a foreign language. *ELOPE: English Language Overseas Perspectives and Enquiries*, 1(1-2), 127–139. <https://doi.org/10.4312/elope.1.1-2.127-139>

- Davidson-Shivers, G. V. (2009). Frequency and types of instructor interactions in online instruction. *Interactive Online Learning*, 8(1), 23-40.
- Deci, E., & Ryan, R. (2013). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interviews. *Medical Education*, 40(4), 314–321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. New York: Oxford University Press.
- Flick, U. (2013). *The SAGE handbook of qualitative data analysis* (1<sup>st</sup> ed.). Sage.
- Flottemesch, K. (2000). Building effective interaction in distance education: A review of the literature. *Educational Technology*, 40(3), 46–51.
- Gabriel, A. M. (2004). Learning together: Exploring group interactions online. *Revue internationale du e-learning et la formation à distance*, 19(1), 54–72.
- Garris, R., Ahlers, R., & Driskell, J. E. (2002). Games, motivation, and learning: A research and practice model. *Simulation & Gaming*, 33(4), 441–467. <http://dx.doi.org/10.1177/1046878102238607>.
- Gaşior, K. (2019). Classroom interaction in oral language learning events created by EFL storytelling-based games. *New Horizons in English Studies*, 4(1), 35–51. Doi:10.17951/nh.2019.35–51
- Gozcu, E., & Kivanc Caganaga, C. (2016). The importance of using games in EFL classrooms. *Cypriot Journal of Educational Sciences*, 11(3), 126–135.
- Hadfield, J. (1990). A collection of games and activities for low to mid- intermediate students of English intermediate communication games. *Hong Kong: Thomas and Nelson and Sons*.
- Hanum, N. S. (2017). The importance of classroom interaction in the teaching of reading in junior high school. In *Prosiding Seminar Nasional Mahasiswa Kerjasama Direktorat Jenderal Guru dan Tenaga Kependidikan Kemendikbud 2016*
- Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (2002). *Instructional media and technologies for learning*. Pearson Education Ltd.
- Huang, W. D., Johnson, T. E., & Han, S.-H. C. (2013). Impact of online instructional game features on college students perceived motivational support and cognitive investment: A structural equation modeling study. *The Internet and Higher Education*, 17, 58–68. <http://dx.doi.org/10.1016/j.iheduc.2012.11.004>.
- Israel, M. (2017). Game-based Learning and Gamification. In *Sync Training, White Paper*. <https://epale.ec.europa.eu/sites/default/files/game-based-learning-gamification.pdf>
- Jaramillo Arias, A. Y. (2021). Fostering oral interaction skills while using board games in an EFL classroom. *Universidad Pedagógica Nacional*. <http://hdl.handle.net/20.500.12209/13403>
- Jiang, Y. J., Bai, X. M., Wu, W. C., and Luo, X. J. (2019). Analysis of the structural relationship of influencing factors of the online learning experience. *Mod. Distance Educ.* 1, 27–36. doi: 10.13927/j.cnki.yuan.2019.0004
- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured

- 
- interview guide. *Journal of Advanced Nursing*, 72(12), 2954–2965.  
<https://doi.org/10.1111/jan.13031>
- Kayi, H. (2006). Teaching speaking: activities to promote speaking in a second language. *The Internet TESL Journal*, 12(11), 1-6. <http://iteslj.org/Techniques/Kayi-TeachingSpeaking.html>
- Kearsley, G. (2000). *Online education: Learning and teaching in cyberspace* (1<sup>st</sup> Ed.). Wadsworth Publishing Company.
- Khanahmadi, A., & Nasiri, S. (2022). The effect of flipped classroom approach on the Iranian high school EFL learners' performance. *Journal of Research in Techno-Based Language Education*, 2(2).
- Kim, B., Park, H. & Baek, Y. (2009). Not just fun, but serious strategies: Using meta-cognitive strategies in game-based learning. *Computers and Education*, 52(4), 800-810.
- Kopp, M., Gröblinger, O., & Adams, S. (2019). Five common assumptions that prevent digital transformation at higher education institutions. *INTED2019 Proceedings*, 1, 1448–1457.
- Koshy, V. (2010). *Action research for improving educational practice: A step-by-step guide*. Sage.
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 180-240). New York, NY: Academic Press.
- Malone, T. W. (1981). Toward a theory of intrinsically motivating instruction. *Cognitive Science*, 5(4), 333–369.
- Mariano, M., & Silva, A. T. B. (2018). *Social Interactions between Teachers and Students: A Study Addressing Associations and Predictions*. Paidéia (Ribeirão Preto).  
<https://www.scielo.br/j/paideia/a/8SQc6wdsF47QNkpdqmGzWyd/?lang=en>
- Mason, J. (2004). Semi-structured interview. In Lewis-Beck M.S., Bryman A. & Futing Liao E., (Eds.), *The SAGE encyclopedia of social science research methods* (pp. 1021–1022). SAGE Publications.
- Mei, Y. Y., & Yu-jing, J. (2000). *Using games in an EFL class for children*. Daejin University ELT Research Paper.
- Moore, M. G. (1989). Three types of transaction. In M. G. Moore & C. G. Clark (Eds.), *Readings in principles of distance education* (pp. 100-105). University Park, PA: State University.
- Mu, S., & Wang, X. J. (2019). Research on deep learning strategies in online learning. *Distance Educ. China*, 10, 29–39.
- Murtiningrum, S. (2009). Classroom interaction in English learning. *Universitas Sanata Dharma Yogyakarta*.
- O'Brien, R. (2001). An overview of the methodological approach of action research. In R. Richardson (Ed.), *Teoria e Prática da Pesquisa Ação* [Theory and Practice of Action Research]. João Pessoa, Brazil: Universidade Federal da Paraíba.
- Plass, J. L., Homer, B. D., & Kinzer, C. K. (2015). Foundations of game-based learning. *Educational Psychologist*, 50(4), 258-283.

- Prensky, M. (2001). The games generations: How learners have changed. *Digital game-based learning*, 1(1), 1-26.
- Ragan, L. (1999). Good teaching is good teaching: An emerging set of guiding principles and practices for the design and development of distance education. *Cause/Effect Journal*, 22(1), 20-24.
- Reinders, H., & Wattana, S. (2015). The effects of digital gameplay on second language interaction. *Computer-Assisted Language Learning and Teaching (IJCALLT)*, 5(1), 1-21.
- Richards, J. C. (1985). Conversational competence through role-play activities. *RELC Journal*, 16(1), 82-91.
- Richards, J., & Rodgers, T. (2001). *Approaches and methods in language teaching* (2<sup>nd</sup> Ed.). Cambridge University Press.
- Rovai, A. P., & Barnum, K. (2003). On-line course effectiveness: An analysis of student interactions and perceptions of learning. *International Journal of E-Learning & Distance Education*, 18(1), 57-73.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.
- Sundari, H. (2017). Classroom interaction in teaching English as foreign language at lower secondary schools in Indonesia. *Advances in Language and Literary Studies*, 8(6), 147-154. <https://doi.org/10.7575/aiac.all.s.v.8n.6p.147>
- Tatayama, Y. (1998). Explicit and implicit teaching of pragmatic routines: Japanese Sumimasen. *Pragmatics in Language Teaching*, 200-222. <https://doi.org/10.1017/cbo9781139524797.015>
- Taylor, M.C. (2005). Interviewing. In Holloway, E.D. (Ed.), *Qualitative research in health care* (pp. 39-55). Open University Press.
- Thurmond, V.A. (2003). Examination of Interaction Variables as Predictors of Students' Satisfaction and Willingness to Enroll in Future Web-Based Courses While Controlling for Student Characteristics. In C. Crawford, N. Davis, J. Price, R. Weber & D. Willis (Eds.), *Proceedings of SITE 2003--Society for Information Technology & Teacher Education International Conference* (pp. 528-531). Albuquerque, New Mexico, USA: Association for the Advancement of Computing in Education (AACE). Retrieved July 17, 2022 from <https://www.learntechlib.org/primary/p/17955/>.
- Trentin G. (2000). The quality-interactivity relationship in distance education. *Educational Technology*, 40(1), 17-27.
- Wagner, E. D. (2001). Emerging learning trends and the World Wide Web. *Web-Based Training*, 33-50.
- Wattana, S. (2013). *Talking while playing: the effects of computer games on interaction and willingness to communicate in English* [PhD dissertation]. University of Canterbury. <https://doi.org/10.26021/9498>
- WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. (2020, March 11). World Health Organization. Retrieved July 1, 2022, from <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

- 
- Yolageldili, G., & Arikan, A. (2011). Effectiveness of using games in teaching grammar to young learners. *Elementary Education Online*, 10(1), 219–229.
- Yusoff, Z., Kamsin, A., Shamshirband, S., & Chronopoulos, A. T. (2017). A survey of educational games as interaction design tools for affective learning: Thematic analysis taxonomy. *Education and Information Technologies*, 23(1), 393-418.  
<https://doi.org/10.1007/s10639-017-9610-5>

