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Developing an Immersive VR Program for Tourism English Learners through Gamification Tasks

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This study aims to develop an immersive virtual reality (VR) program for tourism English learners through gamification tasks. English for tourism, a part of English for Specific Purposes (ESP), focuses on real-world language use in work-related contexts. An immersive VR program is designed to provide learners with a real-time and interactive experience. However, typical VR programs are not sufficient for ESP learners, who require more practical and contextualized learning. To address this gap, this study integrates gamification tasks into an immersive VR program. A review of 40 journal articles analyzed the benefits of VR and gamification in language learning. The analysis of the VR related journal articles reported the potential benefits of immersive environments for learning, while the gamification analysis revealed that key outcomes such as motivation, engagement, and skill improvement play a critical role in enhancing language learning experiences. Based on these findings, the study develops an immersive VR program that incorporates various gamification tasks such as fill-in-the-blank exercises, grading, and virtual sites such as hotel receptions, rooms, and restaurants to create a more engaging and practical learning environment for tourism English learners. The pedagogical implications of incorporating VR and gamification into the tourism English classroom are also discussed.

[immersive VR program/tourism English/gamification task/ESP learning]

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I. INTRODUCTION

As moving into a digitally enhanced era where humans and digital technologies coexist, language education needs fundamental change. From primary and secondary education to higher education, teaching and learning in schools and communities are undergoing transformation. According to the Ministry of Education (MOE, 2024), in order to ensure that digital technologies are used in ways that enhance the value and essential functions of education, it is necessary to put forward principles for technology that are based on public and educational purposes. In 2025, MOE is promoting AI digital textbooks to improve teaching methods for the era of digitally enhanced society. It is believed that personalized education is crucial for developing talented students, but in the current education environment, it is not easy to accomplish digitally enhanced teaching and learning (Chang, 2024; Chang et al., 2024; Mudra, 2020). The reason for this is that although many smart devices have been distributed to educational settings as a result of COVID-19, there have been problems such as access issues and difficulties in using digital programs. However, the use of digital technology-integrated teaching materials was evaluated as positive (MOE, 2023b). Advanced technologies such as AI, which have been developing at a rapid pace in recent years, offer new prospects for personalized education that considers students' competencies and attributes (MOE, 2023a).

In traditional tourism English learning, the fundamental goal of instruction is to strengthen English communicative competence in the tourism industry, but in the present era, knowledge information processing competency (KIPC) is equally regarded as important. Therefore, it is necessary to develop a variety of technology-based teaching materials to meet the needs of tourism English learners (Chang, 2023; Chang et al., 2024). Traditionally, the most effective way to develop tourism English communicative competency is to teach English in authentic circumstances, as found in the tourism industry. However, providing such an environment in the classroom can be time- and cost-intensive. By compensating for this shortcoming, VR technology can teach tourism English in an authentic environment. VR is a three-dimensional (3D) environment that is a computerized representation of an imaginary world or part of the real world (Southgate, 2020). Teaching in an educational environment created in VR can revolutionize traditional teaching methods.

Thus, this study focuses on how tourism English language teaching can be applied in a hotel environment created in VR. Choi (2021) created a VR-based English classroom environment and applied it to an elementary school class to determine whether VR technology is a suitable for English language teaching. Xin and Yoon (2022) also conducted a study to analyze the factors affecting the learning effect of VR education in university education, focusing on undergraduate students majoring in English, and found that it had a positive effect on learning overall and increased the sense of immersion in learning.

Compared to the general English course, the tourism English course requires more immersive learning and VR technology can provide authentic teaching material. According to Kapp (2012), gamification is defined as an integration of game elements and game thinking in activities that are not games, and some distinctive features of gamification are found, which are users, challenges (tasks), points, levels, badges, and ranking of users. As such, VR technology is being actively used not only for tourism English learning but also for general English learning, and it is showing promising research results. VR technology is instrumental in education, and it can be used as digital teaching material. Therefore, it is necessary to consider the expansion and the content of the education to be provided through VR technology. This study aims to develop an immersive VR-based program that includes tourism English students to complete gamification tasks while utilizing their tourism English speaking, reading, and listening skills in a variety of scenario-based authentic environments. In the process, students acquire English in a natural way through the dialogue provided by VR and improve their communication skills in the tourism industry through an immersive learning process. This will confirm whether digital English education through VR is a methodology that can have positive effects on tourism English ESP classes and the research questions for this study are formed as follows.

1. What are the benefits of an immersive VR program and gamification for tourism English learners?
2. What kind of tasks are suitable for an immersive VR program for tourism English learners?
3. How can we design an immersive VR program-based tourism English instruction?

II. LITERATURE REVIEW

1. VR and Gamification in Language Learning

VR aims to immerse the user in a real or virtual environment and simulate what is physically present, created through computing elements (Lampropoulos et al., 2020). VR is mainly characterized by interactivity, immersion and immediacy (Freina & Ott, 2015). It uses computer systems to accurately make users perceive virtual environments and experiences (Blascovich & Bailenson, 2011). Especially in education, it has gained popularity as a helpful teaching and learning tool due to its immersive and interactive nature (Hu-Au & Lee, 2017). Recent advancements in digital devices and equipment have further increased the adoption of VR to reduce the cost of teaching and learning (Olmos et al., 2018). VR can support a variety of teaching and learning styles by creating safe, immersive and

unique environments, which can increase engagement and motivation and enable real-time communication between educators and learners even when traditional learning is infeasible (Han, 2020). In these environments, students engage in experiential learning, perform complex tasks and develop cognitive skills (Hamilton et al., 2021). It is important that immersive technologies are applied effectively within the educational environment. VR replaces this, enriching educational programs and providing future learning opportunities (Billingsly et al., 2019). VR can foster positive learning behaviors and attitudes and support compelling learning experiences in K-12 and higher education settings through the hands-on experiences it provides (Natale et al., 2020) because it provides opportunities to enrich learning, support different teaching methods, and enhance student stimulation and motivation (Araiza-Alba et al., 2022). As a result, VR can be effectively applied in a variety of educational settings and subjects such as language learning (Blyth, 2018; Elhambakhsh et al., 2024; Hasan et al., 2024), communication skills (Shorey et al., 2019), healthcare (Pears et al., 2020) and career design (Kim et al., 2020).

Gamification can be used in several contexts and has become a field of study applicable to various academic disciplines (Nacke & Deterding, 2017). Gamification is associated with game-like experiences, gameness, and other factors that make games fun, challenging, engaging and immersive, which enhance user engagement, motivation, and experience (Deterding, 2012; Deterding et al., 2011; Seaborn & Fels, 2015). Due to the nature of gamification, it can make the learning experience more interactive and enjoyable, increase students' interest, engagement, self-efficacy and focus on the subject matter and encourage them to achieve better learning outcomes (Bouchrika et al., 2019; Kim et al., 2017; Yildirim, 2017). Recent studies discussed the adoption and integration of gamification in education (de Borges et al., 2014; Dehghanzadeh et al., 2024; Dicheva et al., 2015; Huang et al., 2020; Manzano-León et al., 2021; Martí-Parreño et al., 2016; Nadi-Ravandi & Batooli, 2022; Nah et al., 2014; Sailer & Homner, 2019; Swacha, 2021; Zeybek & Saygı., 2024). In particular, it is an effective pedagogy that can enrich traditional curricula and bring new potential with its ability to be used in conjunction with other approaches and technologies (O'Donovan, 2012; Sanchez et al., 2011). As a result, there has been much research on applying gamification in various fields of learning. There has been engaging in history and cultural heritage education (Bonacini & Giaccone, 2021; Moseikina et al., 2022) and language learning (Dehganzadeh & Dehganzadeh, 2020; Dehghanzadeh et al., 2019), healthcare and medical education (Ang et al., 2018; McCoy et al., 2016; Sandrone & Carlson, 2021), music education, sports (Fernandez-Rio et al., 2020; Ferriz-Valero et al., 2020) as well as vocational education (Dahalan et al., 2024; Jayalath & Esichaikul, 2020).

2. Tasks for Technology-based Tourism English Learning

Technology-based approaches have significantly impacted tourism English learning, integrating digital tools to enhance language acquisition and practical communication skills in a professional context (Chang, 2024). Rahman and Wibawa (2022) explained the implementation of e-learning modules designed explicitly for tourism English, emphasizing vocabulary and situational language skills essential for tourism professionals. These modules often use platforms such as Moodle or mobile applications, allowing students to learn self-paced with resources tailored to industry-specific vocabulary and interactive scenarios. For example, Phaiboonnugulkij's (2023) research on blended learning for Thai EFL tour guides illustrates how digital content and real-world simulations facilitate the acquisition of metacognitive language skills essential for guiding and interacting with clients. Studies suggest that immersive technologies such as VR and augmented reality (AR) are particularly effective in contextualizing tourism English learning. Hsu et al. (2023) investigated the use of AR to improve speaking accuracy and contextual vocabulary acquisition, which are crucial for tourism professionals interacting with international visitors. Similarly, Liu's (2022) application of VR in tourism English curricula demonstrates how digital simulations of real tourism scenarios support dyadic learning and improve learners' comfort in using the language authentically in different contexts. These advances highlight the transformative role of technology in equipping students with the language skills needed for the tourism industry while providing flexible, interactive learning opportunities.

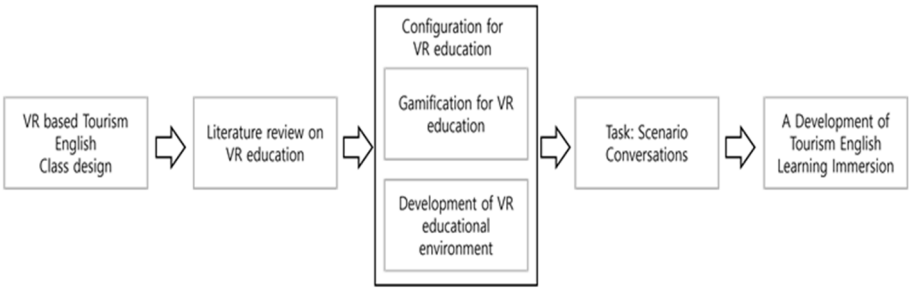
Researchers advocate task-based approaches that simulate real-life tourism scenarios and develop practical language skills relevant to the tourism industry for effective task development in tourism English training. Olivares and Piedad (2020) illustrate task-based learning by having students develop a tourist guide for a local site. This project promotes English language skills and a deeper understanding of the cultural context crucial for effective communication in tourism. In addition, digital tools and blended learning methods are becoming central to designing tasks for tourism English. Phaiboonnugulkij (2023) discusses blended teaching, which combines face-to-face and online learning strategies, allowing tourism students to practice speaking and listening in diverse, real-life-inspired tasks. Suaidi et al. (2024) conducted a study to identify the shortcomings of traditional lectures and class discussions in learning tourism English. They taught students in person to identify the tourism English learning environment caused by the need for language learning strategies and materials and found that the lack of role-playing was the most significant shortcoming. Hien (2024) analyzed the data from an online survey of students to determine what students need to learn English in a tourism class at Ho Chi Minh City University of Industry and Trade (HUIT) and found that students should take more project-based courses to use English more in real life.

III. METHOD

1. Research Procedure

In this study, in order to develop an VR immersive program for tourism English learners, gamification tasks are designed on the basis of meta-analysis of VR and gamification in language learning related journal articles. The research procedure is described in Figure 1.

FIGURE 1
Research Procedure



2. Data Collection and Analysis

To review the literature on VR and gamification in language learning, 18 journal articles on VR studies were collected ($N = 18$), and 22 journal articles on gamification studies were collected ($N = 22$). Search engines such as Google Scholar, ScienceDirect, KISS, DBpia and Kyobo-scholar were used to collect the data. In this search, the publication period was set from 2020 to 2024, and the publication language and nationality of the journal were not restricted. The search terms are “VR” + “language” + “learning” and “gamification” + “language” + “learning” and Appendix A shows the list of collected journal articles. The collected data from the search was analyzed using Orange Data Mining 3.75 ver. and a word cloud visualization was created to explore and analyze the effect of VR and gamification in language learning.

IV. FINDINGS AND DISCUSSION

1. Benefits of VR and Gamification in English Leaning

The word cloud in Figure 2 presents the most frequently mentioned key concepts in research papers related to VR-based language learning, including “virtual reality,” “VR,” “language,” “students,” “learners,” and “education,” reflecting the primary focus of research in this field. It emphasizes the focus of research is on how VR is used in educational contexts, particularly for language learning. Words like “immersive,” “experiential,” “environment,” and “interactive” suggest that VR provides a more engaging and interactive learning experience, offering a rich, simulated environment for language practice. Words such as “study,” “research,” “teaching,” “vocabulary,” and “skills” point to the research-driven nature of the topic, analyzing the impact of VR on specific language learning skills, such as vocabulary acquisition and speaking. The mention of “cultural,” “intercultural,” and “foreign language” suggests that VR is also used to create culturally immersive scenarios, helping learners gain a deeper understanding of the language context. Words like “technology,” “technologies,” “applications,” and “video” highlight the technical tools and platforms through which VR is implemented, underscoring the role of digital solutions in this field. Words like “anxiety,” “problems,” “control group,” and “perceptions” may indicate that the document discusses challenges faced by students and educators when integrating VR, as well as methods to assess its effectiveness. In short, this word cloud illustrates a detailed exploration of VR’s role in language learning, highlighting both the potential benefits of immersive learning environments and the need for further research into its educational applications.

FIGURE 2
Data Mining of VR in Language Learning



The word cloud visualization of journal articles related to gamification in language learning shown in Figure 3 highlights words like “learning,” “language,” “students,” “gamification,” “study,” and “education” and it is concentrated on the application of gamification in educational contexts, particularly related to language learning. Words such as “motivation,” “engagement,” “positive,” and “experience” suggest that gamification is perceived as a beneficial approach in education, contributing positively to student motivation and engagement. Words like “vocabulary,” “skills,” “performance,” and “process” highlight areas where Gamification is applied, particularly in language acquisition and skill-building. Frequent mentions of “study,” “research,” “results,” “analysis,” and “data” indicate a research-driven approach, likely discussing findings on gamification's effectiveness. Words like “digital,” “technology,” “platform,” and “apps” reflect the digital nature of gamification, emphasizing the use of mobile or online platforms. The mention of “Duolingo” suggests the study may reference this app as a case or example of gamified language learning. In short, this word cloud highlights a focus on gamification’s role in language education, where motivation, engagement and skill improvement are central outcomes.

FIGURE 3
Data Mining of Gamification in Language Learning



2. Gamification Tasks of an Immersive VR Program

An immersive VR program was built with a focus on gamification, one of the most important elements of VR-based education, to provide an immersive and authentic experience for students. According to Bygate et al. (2001), a task is regarded as an activity, requiring learners to use language, with emphasis on meaning. Thus, the gamification tasks for tourism English learners on an immersive VR program are designed on the fundamental role of task, which provides the authentic experience of using tourism English. Table 1 shows

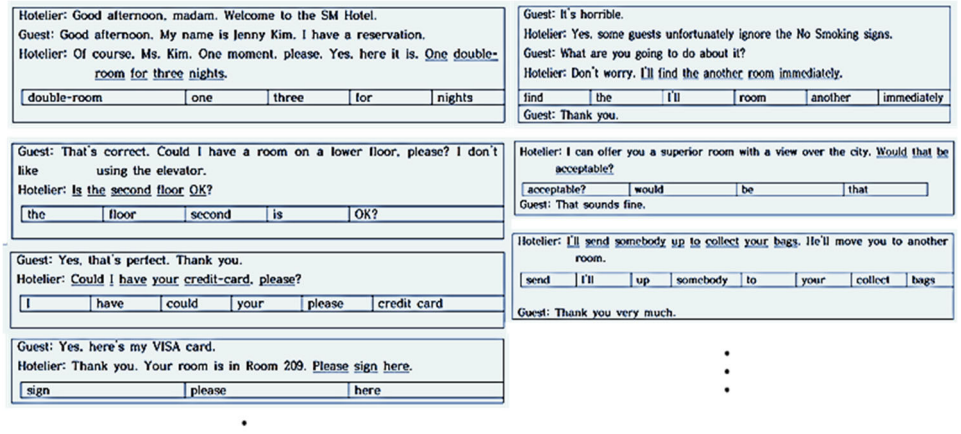
the gamification tasks for tourism English learners. Gamification elements were used for the way of playing and a grading service. To activate the gamification tasks on VR, three virtual places and four modules were mounted on the VR program.

TABLE 1
Gamification Tasks of an Immersive VR Program

Elements of Gamification	Activities
The way of playing	Fill in the blanks of words
The number of virtual places	3
A grading service	correct/incorrect sound
The number of modules	4

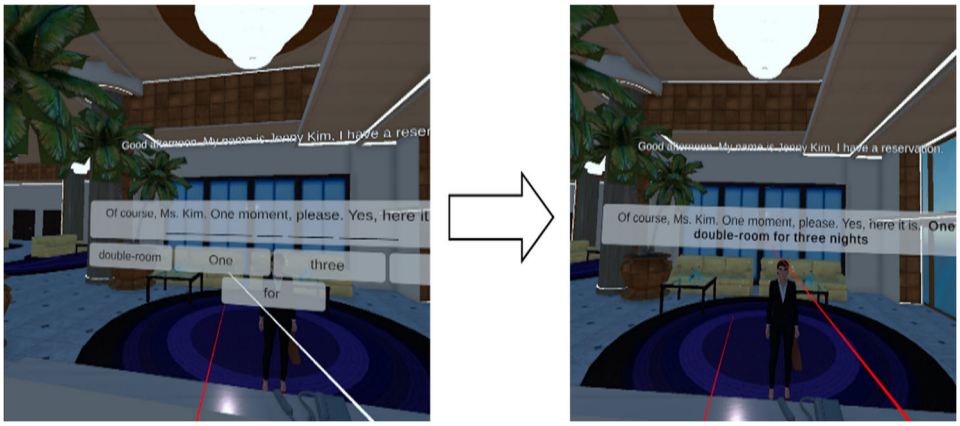
To create a VR-based tourism English learning program, dialogue scripts for each situation were developed and saved in the program. Then, as shown in Figure 4, the underlined parts of the script were broken down into words to be used as separate gamification elements. In the case of dialogue scripts, there are four scripts in total.

FIGURE 4
Script of an Immersive VR Program



The dialogue script in Figure 4 is used to teach the gamification elements that students need to perform as they practice speaking, with the fill-in-the-blank game shown in Figure 5. The words to be filled in the blanks are randomly placed, and when the correct word is clicked, the correct sound is heard, and when the incorrect word is clicked, the incorrect sound is heard to help students learn English, and when all the sentences are completed, the students can read the sentences once again to repeat the learning effect.

FIGURE 5
Gamification Tasks in an Immersive VR Program



3. Design of an VR Program for Tourism English Learners

According to Chang (2020), for ESP learners, the instructional modules based on the duties and responsibilities of perspective jobs were designed and confirmed as effective for ESP learners. Thus, for the immersive VR-based tourism English learning program, virtual sites were created to give students the feeling of learning tourism English in the field so that they could immerse themselves in the class. The virtual sites are created by "reservation" "housekeeping" and "food and beverage service" which were developed in terms of hoteliers' duties and responsibilities. The Figure 6 shows the virtual sites in this study.

FIGURE 6
Virtual Sites in an Immersive VR Program



Reception **Hotel restaurant**



Hotel room 1 **Hotel room 2**

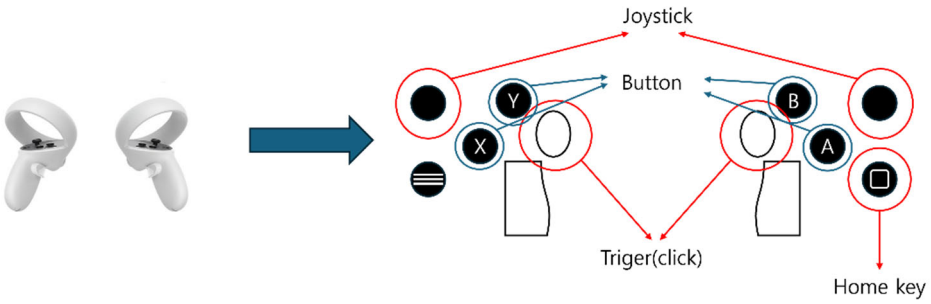
This immersive VR program allows students to focus on learning English by having conversations according to the voice in VR and playing the gamified game elements as shown in Table 1. A list of conversations for each virtual location was stored in the program so that they could be familiar with the English conversations to be used in each situation. Table 2 shows the design of the VR program for the tourism English class.

TABLE 2
VR Program Design for Tourism English Learning

Task	Individual task: Conversation with Avatar	Virtual place	Module of English learning
Scenario Conversation	**Step 1**: One-on-one conversation according to the lines set for each module **Step 2**: Filling in the blanks of words and complete the sentence **Step 3**: Talking about a completed sentence	Hotel lobby	Module 1: Working as a hotel receptionist
		Hotel restaurant	Module 2: Taking orders
		Hotel room	Module 3: Handling a guest problem
			Module 4: Asking amenities; towels and toiletries

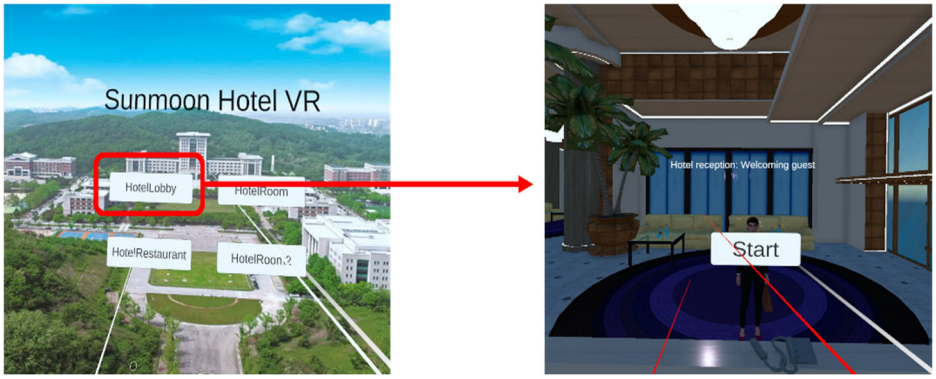
To create the VR-based tourism English program, it's important to get the VR equipment, so learners need to work with the controller that comes with the VR headset. The Figure 7 shows the PC equivalent of a keyboard and mouse. The configuration of the controller is shown in Figure 7. The functions of the controller used in this study are triggers, buttons, and the home key.

FIGURE 7
Control Device of a VR Immersive Program



When students first start the program, they will see the main screen, shown on the left in Figure 8, with buttons to select each of the study locations. The student can choose what they want to learn, and in Figure 8, they've assumed that they want to learn a dialogue situation in a hotel lobby. If the controller is recognized correctly, an imaginary line (ray) is drawn in front of the controller. If the button is interacted with correctly, the color of the line changes to red. Turning red indicates that the button click event can be performed normally. When they click the button using the trigger function on that controller, they are taken to a space where they can have a dialogue, as shown on the right in Figure 5.

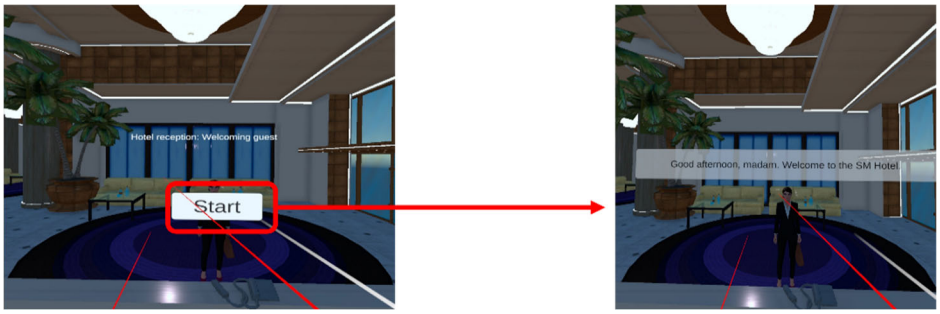
FIGURE 8
Main Display of an Immersive VR Program



When the Start button is clicked via a trigger, as shown in Figure 9, the training proceeds. The learning is based on a spoken dialogue from the guest avatar in front of the learner, and the learner can manually click the buttons on the controller in Figure 9 to continue the dialogue. The content of the dialogue is based on the dialogue script in Figure 2, and the gamification element of the dialogue is triggered by the learner clicking on the appropriate

words in the blanks to complete the sentence and continue the conversation, as shown in Figure 9.

FIGURE 9
One-on-One Conversation



4. Discussions

This study explored the potential of immersive VR combined with gamification to enhance English language learning for tourism students and provided key insights into the benefits of integrating these technologies in educational settings. Firstly, this study reviewed VR in language learning and proposed an immersive VR program that allowed tourism English learners to experience practical, context-specific situations such as hotel reservations, guest room service and food and beverage service. By simulating real-life tasks, a VR program not only enhanced language acquisition but also facilitated learners' competence in using English in professional contexts (Hu-Au & Lee, 2017). Secondly, gamification elements such as fill-in-the-blank exercises, interactive dialogue tasks and a grading service were incorporated to maintain learners' motivation and reinforce their language skills. These gamification tasks allowed students to receive immediate feedback, such as auditory cues for correct or incorrect answers, which further motivated learners to focus on accuracy and progress. The grading service and level-based design added a competitive and rewarding aspect to language learning, which proved effective in maintaining students' interest and commitment to learning. This is consistent with previous research highlighting that gamification increases engagement and retention in language learning (Dehganzadeh & Dehganzadeh, 2020; Dehghanzadeh et al., 2019). Therefore, based on these findings, the study needs to be tested in actual educational settings to see if it is an appropriate educational material for learners, and it will be applied to actual classes.

V. CONCLUSIONS

This study concludes that the integration of immersive VR and gamification into tourism English language learning offers significant pedagogical benefits by enabling students to practice language skills in simulated, industry-specific scenarios. By creating an engaging environment with immediate feedback and interactive dialogue, VR-based gamification promotes both motivation and skill enhancement, addressing the needs of tourism students who require practical English communication skills. The program demonstrates that VR can bridge the gap between traditional classroom learning and real-world application, helping learners to better prepare for professional environments. The pedagogical implications of this study suggest that the research on English education through VR (Choi, 2021; Southgate, 2020; Xin & Yoon, 2022) has been further developed and is currently being used in VR can serve as an effective tool for authentic learning in English for ESP contexts, particularly in tourism. Teachers can use VR environments to create contextualized learning modules that simulate task completion, providing students with the opportunity to apply English skills in a practical way. In addition, incorporating gamification elements increases student engagement and enhances learning outcomes, making tourism English suitable for courses that aim to develop English communicative competence in specific industries.

However, the study also acknowledges its limitations, particularly in terms of accessibility and the potential for VR to fall short of replicating natural conversations. The high cost associated with VR technology limits its implementation, particularly in resource-constrained educational settings. In addition, the structured nature of VR interactions may not fully prepare students for spontaneous language use. Future research could explore more affordable and adaptable VR solutions, as well as methods of combining VR-based learning with real-life conversational practice, to fully address these limitations.

REFERENCES

Ang, E. T., Chan, J. M., Gopal, V., & Shia, N. L. (2018). Gamifying anatomy education. *Clinical Anatomy, 31*(7), 997−1005. https://doi.org/10.1002/ca.23249

Araiza-Alba, P., Keane, T., & Kaufman, J. (2022). Are we ready for virtual reality in K-12 classrooms? *Technology, Pedagogy and Education, 31*(4), 471-491. https://doi.org/10.1080/1475939x.2022.2033307

Billingsley, G., Smith, S., Smith, S., & Meritt, J. (2019). A systematic literature review of using immersive virtual reality technology in teacher education. *Journal of Interactive Learning Research, 30*(1), 65-90.

Blascovich, J., & Bailenson, J. (2011). *Infinite reality: Avatars, eternal life, new worlds, and the dawn of the virtual revolution.* William Morrow.

Blyth, C. (2018). Immersive technologies and language learning. *Foreign Language Annals, 51*(1), 225-232. https://doi.org/10.1111/fan.12327

Bonacini, E., & Giaccone, S. C. (2021). Gamification and cultural institutions in cultural heritage promotion: A successful example from Italy. *Cultural Trends, 31*(1), 3-22. https://doi.org/10.1080/09548963.2021.1910490

Bouchrika, I., Harrati, N., Wanick, V., & Wills, G. (2019). Exploring the impact of gamification on student engagement and involvement with e-learning systems. *Interactive Learning Environments, 29*(8), 1244-1257. https://doi.org/10.1080/10494820.2019.1623267

Bygate, M., Skehan, P., & Swain, M. (2001). *Researching pedagogic tasks, second language learning, teaching and testing.* Longman.

Chang, H. J. (2020). PBL-based ESP course design to develop intercultural communicative competence. *Soonchunhyang Journal of Humanities, 39*(2), 289-313. https://doi.org/10.35222/IHSU.2020.39.2.289

Chang, H. J. (2023). The effect of AI chatbot-based tourism English instruction on intercultural communicative competence. *Journal of English Teaching through Movies and Media, 24*(2), 15-30. https://doi.org/10.16875/stem.2023.24.2.15

Chang, H. J. (2024). ESP instruction design based on digital literacy for tourism English learners. *Journal of English Teaching through Movies and Media, 25*(3), 60-71. https://doi.org/10.16875/stem.2024.25.3.60

Chang, H. J., Park, S. M., Lee, M. K., Hwang, Y., Jeon, M. K., Lee, H. J., Kim, J. E., Yun, T. J., Lim, J. H., & Kim, J. A. (2024). When digital literacy meets English education. Hankookmunhwasa.

Choi, W. K. (2021). Exploring elementary school students' perceptions and affective domain effects on VR-based English classes. *Elementary English Education, 27*(4), 29-49. https://doi.org/10.25231/pee.2021.27.4.29

Dahalan, F., Alias, N., & Shaharom, M. S. N. (2024). Gamification and game-based learning for vocational education and training: A systematic literature review. *Education and Information Technologies, 29*(2), 1279-1317. https://doi.org/10.1007/s10639-022-11548-w

de Borges, S., Durelli, S., Reis, V. H. S., & Isotani, S. (2014). A systematic mapping on gamification applied to education. In Y. K. Cho & S. Y. Shin (Eds.), *Proceedings of the 29th annual ACM symposium on applied Computing* (pp. 216-222). ACM. https://doi.org/10.1145/2554850.2554956

Dehganzadeh, H., & Dehganzadeh, H. (2020). Investigating effects of digital gamification-based language learning: A systematic review. *Journal of English*

Language Teaching and Learning, 12(25), 53-93. https://doi.org/10.22034/elt.2020.10676

Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaee, E., & Noroozi, O. (2019). Using gamification to support learning English as a second language: A systematic review. *Computer Assisted Language Learning, 34*(7), 934-957. https://doi.org/10.1080/09588221.2019.1648298

Dehghanzadeh, H., Farrokhnia, M., Dehghanzadeh, H., Taghipour, K., & Noroozi, O. (2024). Using gamification to support learning in K-12 education: A systematic literature review. *British Journal of Educational Technology*, *55*(1), 34-70. https://doi.org/10.1111/bjet.13335

Deterding, S. (2012). Gamification: Design for motivation. *Interactions, 19*(4), 14-17. https://doi.org/10.1145/2212877.2212883

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness. In A. Pictur & A. Lugmayr (Eds.), *Proceedings of the 15th International Academic MindTrek Conference on Envisioning Future Media Environments (MindTrek' 11)* (pp 9-15). ACM. https://doi.org/10.1145/2181037.2181040

Dicheva, D., Dichev, C., Agre, G., & Angelova, G. (2015). Gamification in education: A systematic mapping study. *Journal of Educational Technology & Society, 18*(3), 75-88.

Elhambakhsh, S. E., Neysani, M., & Nikbakht, A. (2024). Exploring L2 educators' training and professional development needs in VR English language learning. *Heliyon, 10*(17), e36700. https://doi.org/10.1016/j.heliyon.2024.e36700

Fernandez-Rio, J., Heras, E., de las, González, T., Trillo, V., & Palomares, J. (2020). Gamifcation and physical education. Viability and preliminary views from students and teachers. *Physical Education and Sport Pedagogy, 25*(5), 509-524. https://doi.org/10.1080/17408989.2020.1743253

Ferriz-Valero, A., Østerlie, O., Martínez, S. G., & García-Jaén, M. (2020). Gamification in physical education: Evaluation of impact on motivation and academic performance within higher education. *International Journal of Environmental Research and Public Health, 17*(12), 4465. https://doi.org/10.3390/ijerph17124465

Freina, L., & Ott, M. (2015). A literature review on immersive virtual reality in education: State of the art and perspectives. *The International Scientific Conference eLearning and Software for Education, 1*(20), 133-141. https://doi.org/10.12753/2066-026X-15-020

Hamilton, D., McKechnie, J., Edgerton, E., & Wilson, C. (2021). Immersive virtual reality as a pedagogical tool in education: A systematic literature review of quantitative

learning outcomes and experimental design. *Journal of Computers in Education, 8*(1), 1-32. https://doi.org/10.1007/s40692-020-00169-2

Han, I. (2020). Immersive virtual field trips in education: A mixed-methods study on elementary students′ presence and perceived learning. *British Journal of Educational Technology. 51*(2), 420-435. https://doi.org/10.1111/bjet.12842

Hasan, S., Wang, J., Anwar, M. S., Zhang, H., Liu, Y., & Yang, L. (2024). Investigating the potential of VR in language education: A study of cybersickness and presence metrics. In L. Lei & Y. Li (Eds.)*, 2024 13th International Conference on Educational and Information Technology (ICEIT)* (pp. 89-196). IEEE. ttps://doi.org/10.1109/ICEIT61397.2024.10540709

Hien, N. T. (2024). Teaching English for tourism in order to cater to the specific requirements of English majors at Ho Chi Minh City University of Industry and Trade. *Journal of Knowledge Learning and Science Technology, 3*(1), 81-92. https://doi.org/10.60087/jklst.vol3.no1.p92

Hsu, K. C., Barrett, N. E., & Liu, G. Z. (2023). English for tourism and AR-assisted context-aware ubiquitous learning. *Computer Assisted Language Learning*, *36*(1), 1-25. https://doi.org/10.1080/09588221.2023.2202701

Huang, R., Ritzhaupt, A. D., Sommer, M., Zhu, J., Stephen, A., Valle, N., Hampton, J., & Li, J. (2020). The impact of gamification in educational settings on student learning outcomes: A meta-analysis. *Educational Technology Research and Development*, *68*(4), 1875−1901. https://doi.org/10.1007/s11423-020-09807-z

Hu-Au, E., & Lee, J. J. (2017). Virtual reality in education: A tool for learning in the experience age. *International Journal of Innovation in Education, 4*(4), 215-226. https://doi.org/10.1504/IJIIE.2017.091481

Jayalath, J., & Esichaikul, V. (2020). Gamification to enhance motivation and engagement in blended eLearning for technical and vocational education and training. *Technology, Knowledge and Learning, 27*(1), 91-118. https://doi.org/10.1007/s10758-020-09466-2

Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education.* Pfeiffer.

Kim, K. G., Oertel, C., Dobricki, M., Olsen, J. K., Coppi, A. E., Cattaneo, A., & Dillenbourg, P. (2020). Using immersive virtual reality to support designing skills in vocational education. *British Journal of Educational Technology, 51*(6), 2199-2213. https://doi.org/10.1111/bjet.13026

Kim, S., Song, K., Lockee, B., & Burton, J. (2017). What is gamification in learning and education? *Springer International Publishing,* 25-38. https://doi.org/10.1007/978-3-319-47283-6_4

Lampropoulos, G., Keramopoulos, E., & Diamantaras, K. (2020). Enhancing the functionality of augmented reality using deep learning, semantic web and knowledge graphs: A review. *Visual Informatics, 4*(1), 32-42. https://doi.org/10.1016/j.visinf.2020.01.001

Liu, Y. (2022). The application of computer technology in tourism English teaching. In *2nd International Conference on Artificial Intelligence, Automation, and High-Performance Computing* (Vol. 12348, pp. 974-979). https://doi.org/10.1117/12.2641407

Manzano-León, A., Camacho-Lazarraga, P., Guerrero, M. A., Guerrero-Puerta, L., Aguilar-Parra, J. M., Trigueros, R., & Alias, A. (2021). Between level up and game over: A systematic literature review of gamification in education. *Sustainability, 13*(4), 2247. https://doi.org/10.3390/su13042247

Martí-Parreño, J., Méndez-Ibáñez, E., & Alonso-Arroyo, A. (2016). The use of gamification in education: A bibliometric and text mining analysis. *Journal of Computer Assisted Learning, 32*(6), 663-676. https://doi.org/10.1111/jcal.12161

McCoy, L., Lewis, J. H., & Dalton, D. (2016). Gamification and multimedia for medical education: A landscape review. *Journal of Osteopathic Medicine, 116*(1), 22-34. https://doi.org/10.7556/jaoa.2016.003

Ministry of Education. (2023a). *AI Digital Textbook Promotion Plan.* Ministry of Education.

Ministry of Education. (2023b). *Digital-based Education innovation Plan.* Ministry of Education.

Ministry of Education. (2024). *Digital educational Norms.* Ministry of Education.

Moseikina, M., Toktamysov, S., & Danshina, S. (2022). Modern technologies and gamification in historical education. *Simulation & Gaming, 53*(2), 135-156. https://doi.org/10.1177/10468781221075965

Mudra, H. (2020). Digital literacy among young learners: How do EFL teachers and learners view its benefits and barriers? Teaching *English with Technology, 20*(3), 3-24. https://eric.ed.gov/?id=EJ1264169

Nacke, L. E., & Deterding, S. (2017). The maturing of gamification research. *Computers in Human Behavior, 71*, 450-454. https://doi.org/10.1016/j.chb.2016.11.062

Nadi-Ravandi, S., & Batooli, Z. (2022). Gamification in education: A scientometric, content and cooccurrence analysis of systematic review and meta-analysis articles. *Education and Information Technologies, 27*(7), 10207-10238. https://doi.org/10.1007/s10639-022-11048-x

Nah, F. F. H., Zeng, Q., Telaprolu, V. R., Ayyappa, A. P., & Eschenbrenner, B. (2014). Gamification of education: A review of literature. *Springer International Publishing, 1,* 401-409. https://doi.org/10.1007/978-3-319-07293-7_39

Natale, A. F. D., Repetto, C., Riva, G., & Villani, D. (2020). Immersive virtual reality in K-12 and higher education: A 10-year systematic review of empirical research. *British Journal of Educational Technology, 51*(6), 2006-2033. https://doi.org/10.1111/bjet.13030

O'Donovan, S. (2012). Gamification of the games course. *University of Cape Town.* https://pubs.cs.uct.ac.za/id/eprint/771/

Olivares, M., & Piedad, S. (2020). *Enhancing writing skills in 11th graders through the creation of a Pamplona tourist guide using task-based learning* [Unpublished doctoral dissertation]. University of Pamplona.

Olmos, E., Cavalcanti, J. F., Soler, J. L., Contero, M., & Alcañiz, M. (2018). Mobile virtual reality: A promising technology to change the way we learn and teach. In S. Yu, M. Ally, & A. Tsinakos (Eds.), *Mobile and ubiquitous learning: An international handbook* (pp. 95-106). Springer. https://doi.org/10.1007/978-981-10-6144-8_6

Pears, M., Yiasemidou, M., Ismail, M. A., Veneziano, D., & Biyani, C. S. (2020). Role of immersive technologies in healthcare education during the COVID-19 epidemic. *Scottish Medical Journal, 65*(4), 112-119. https://doi.org/10.1177/0036933020956317

Phaiboonnugulkij, M. (2023). Language learning strategies instruction via English for community-based tourism blended lessons. *3L: Southeast Asian Journal of English Language Studies, 29*(4), 178–193. https://doi.org/10.17576/3L-2023-2904-12

Rahman, A., & Wibawa, B. (2022). Developing English for tourism learning model based on hypermedia. *Education Quarterly Reviews, 5*(4), 361-381. https://doi.org/10.31014/aior.1993.05.04.670

Sailer, M., & Homner, L. (2019). The gamification of learning: A meta-analysis. *Educational Psychology Review, 32*(1), 77-112. https://doi.org/10.1007/s10648-019-09498-w

Sanchez, É., Ney, M., & Labat, J. M. (2011). Jeux sérieux et pédagogie universitaire: De la conception à l'évaluation des apprentissages[Serious games and academic pedagogy: From conception to evaluation of learning]. *Revue Internationale Des Technologies En Pédagogie Universitaire, 8*(1-2), 48. https://doi.org/10.7202/1005783ar

Sandrone, S., & Carlson, C. (2021). Gamification and game-based education in neurology and neuroscience: Applications, challenges, and opportunities. *Brain Disorders, 1*, 100008. https://doi.org/10.1016/j.dscb.2021.100008

Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies, 74*, 14-31. https://doi.org/10.1016/j.ijhcs.2014.09.006

Shorey, S., Ang, E., Ng, E. D., Yap, J., Lau, L. S. T., & Chui, C. K. (2020). Communication skills training using virtual reality: A descriptive qualitative study. *Nurse Education Today, 94*, 104592. https://doi.org/10.1016/j.nedt.2020.104592

Southgate, E. (2020). *Virtual reality in curriculum and pedagogy.* Routledge.

Suaidi, M., Pius, O. H., & Mengo, N. (2024). The implementation of teaching and learning English for Tourism of Tourism and Hospitality Majors. *Journal Evaluation in Education (JEE), 5*(3), 118-122. https://doi.org/10.37251/jee.v5i3.1050

Swacha, J. (2021). State of research on gamification in education: A biometric survey. *Education Sciences, 11*(2), 69. https://doi.org/10.3390/educsci11020069

Xin W, & Yoon, M. K. (2022). A study on the influence factors of virtual reality teaching on college students' learning performance: Taking English majors as an example. *HSS21, 13*(6), 4553-4567. https://doi.org/10.22143/HSS21.13.6.315

Yildirim, I. (2017). The effects of gamification-based teaching practices on student achievement and students' attitudes toward lessons. *The Internet and Higher Education, 33*, 86-92. https://doi.org/10.1016/j.iheduc.2017.02.002

Zeybek, N., & Saygı, E. (2024). Gamification in education: Why, where, when, and how? A systematic review. *Games and Culture*, *19*(2), 237-264. https://doi.org/10.1177/15554120231158625

APPENDIX A

A list of collected journal articles

1. Virtual Reality (VR)

Alfadil, M. (2020). Effectiveness of virtual reality game in foreign language vocabulary acquisition. *Computers & Education, 153,* 103893. https://doi.org/10.1016/j.compedu.2020.103893

Chen, B., Wang, Y., & others. (2022). The effects of virtual reality-assisted language learning: A meta-analysis. *Sustainability, 14*(6), 3147. https://doi.org/10.3390/su14063147

Hsu, L. (2024). Exploring EFL learners' acceptance and cognitive absorption at VR-based language learning: A survey and experimental study. *Heliyon, 10*(1), e24863. https://doi.org/10.1016/j.heliyon.2024.e24863

Huang, X., & colleagues. (2021). A systematic review of AR and VR enhanced language learning. *Sustainability, 13*(9), 4639. https://doi.org/10.3390/su13094639

Jeong, J. Y., Seo, S. J., & others. (2020). A study on language anxiety and learning achievement through immersive virtual reality English conversation learning

program. *Journal of the Korea Convergence Society, 11*(1), 119-126. https://doi.org/10.15207/JKCS.2020.11.1.119

Jin, S. (2021). The effects of digital virtual reality game-based language learning on English language learners′ development of vocabulary and cultural knowledge and affective attitudes. *Journal of English Teaching through Movies and Media, 22*(3), 78–89. https://doi.org/10.16875/stem.2021.22.3.78

Klimova, B. (2021). Use of virtual reality in non-native language learning and teaching. *Procedia Computer Science, 192*, 1783–1789. https://doi.org/10.1016/j.procs.2021.08.141

Maeng, J. (2021). *A Korean language education plan using virtual reality: For beginner learners* [Unpublished master's thesis]. Chung-Ang University. https://doi.org/10.23169/cau.000000234652.11052.0000474

Maskati, E., & others. (2021). Using virtual reality (VR) in teaching students with dyslexia. *International Journal of Emerging Technologies in Learning, 16*(9), 145-158. https://doi.org/10.3991/ijet.v16i09.19653

Park, H. (2022). Effects of virtual reality-based English learning on Korean university students' speaking ability. *Multimedia-Assisted Language Learning, 25*(4), 93-110. https://doi.org/10.15702/mall.2022.25.4.93

Peixoto, B., Pinto, R., & others. (2021). Immersive virtual reality for foreign language education: A PRISMA systematic review. *IEEE Access, 9*, 3068858. https://doi.org/10.1109/ACCESS.2021.3068858

Pinto, R. D., Peixoto, B., & others. (2021). Foreign language learning gamification using virtual reality—A systematic review of empirical research. *Education Sciences*, *11*(5), 222. https://doi.org/10.3390/educsci11050222

Romero, W. G. (2020). *A developmental study on instructional principles for intercultural experiential learning with the use of 360 videos in the foreign language classroom* [Unpublished master's thesis]. Seoul National University. https://doi.org/10.23170/snu.000000160038.11032.0001187

Song, C., Shin, S. Y., & colleagues. (2023). Optimizing foreign language learning in virtual reality: A comprehensive theoretical framework based on constructivism and cognitive load theory (VR-CCL). *Applied Sciences, 13*(23), 12557. https://doi.org/10.3390/app132312557

Song, S. (2023). Application of VR technology in middle school students' English speaking. *Journal of Education, Humanities and Social Sciences, 9*(1), 6408. https://doi.org/10.54097/ehss.v9i.6408

Tai, T. Y., Chen, H. H. J., & colleagues. (2022). The impact of a virtual reality app on adolescent EFL learners' vocabulary learning. *Computer Assisted Language Learning, 35*(3), 263-287. https://doi.org/10.1080/09588221.2020.1752735

Valijarvi, R.-L., & colleagues. (2024). Designing a VR speech simulation game for foreign language learning and teaching. *Language Education and Technology, 4*(1), 55-78.

2. Gamification

Aguilos, V., & colleagues. (2022). Gamification of virtual language learning: A case study with Thai undergraduate students. *International Journal of Information and Education Technology, 12*(10), 893-899. https://doi.org/10.18178/ijiet.2022.12.10.1726

Al-Dosakee, K., & colleagues. (2021). Gamification in teaching and learning languages: A systematic literature review. *Revista Romaneasca Pentru Educatie Multidimensionala, 13*(2), 297-314. https://doi.org/10.18662/rrem/13.2/436

Amaya-Díaz, I.Y., & Bajaña-Zajia, J.X. (2020). The use of gamification to enhance the English as a foreign language. *Polo del Conocimiento, 5*(3), 188-203. https://doi.org/10.23857/pc.v5i3.1388

Amin, S. N. (2021). Gamification of Duolingo in rising students' English language learning motivation. *Jurnal Bahasa Lingua Scientia, 13*(2), 191-213. https://doi.org/10.21274/ls.2021.13.2.191-213

Chen, C. M., & others. (2023). A game-based learning system based on the gamification framework to promote employees' Japanese learning. *Computers & Education, 201*, 104899. https://doi.org/10.1016/j.compedu.2023.104899

Dehghanzadeh, H., & colleagues. (2021). Using gamification to support learning English as a second language: A systematic review. *Computer Assisted Language Learning, 34*(8), 827−861. https://doi.org/10.1080/09588221.2019.1648298

Dehghanzadeh, H., & others. (2020). Investigating effects of digital gamification-based language learning: A systematic review. *Journal of English Language Teaching and Learning, 12*(26), 85-105. https://doi.org/10.22034/elt.2020.10676

De La Cruz, K. M. L., & others. (2023). Use of gamification in English learning in higher education: A systematic review. *Journal of Technology and Science Education, 13*(4), 109-129. https://doi.org/10.3926/jotse.1740

Fernández Portero, I., & Castillo Rodríguez, C. (2022). Gamification in the English language class: Analysis of pre-service teachers' perceptions. *Dehesa, 17*(3), 50-67.

Fufang, Z., & Han, S. W. (2021). An analysis of utilizing gamification of language apps to improve learners′ flow: Focused on Korean language learning app in China. *Journal of Communication Design, 77*(3), 39-52. https://doi.org/10.25111/jcd.2021.77.39

Gil-Acirón, L. Á. (2022). Benefits of gamification in second language learning. *Epos, 38*(1), 123-141.

Ha, S. Y., & Jeong, E. T. (2024). The effect of gamification design of language learning application on learning productivity. *Journal of Integrated Design Research, 23*(1), 12-25. https://doi.org/10.21195/jidr.2024.23.1.006

Hou, J., & others. (2022). Applying gamification incentives in the Revita language-learning system. In M. Chris (Eds.), *Proceedings of the 9th Games and Natural Language Processing Workshop* (pp. 7-16). European Language Resources Association.

Huseinović, L. (2024). The effects of gamification on student motivation and achievement in learning English as a foreign language in higher education. *MAP Education and Humanities, 4*(10), 20-31. https://doi.org/10.53880/2744-2373.2023.4.10

Ishaq, K., & others. (2021). Mobile-assisted and gamification-based language learning: A systematic literature review. *PeerJ Computer Science, 7*, e496. https://doi.org/10.7717/peerj-cs.496

Jiménez-Sánchez, M., & Gargallo-Camarillas, N. (2020). Gamification and students' motivation: Using Quizizz in the English as a foreign language (EFL) classroom. *Acta Marisiensis Philologia, 2*(3), 112-119. https://doi.org/10.2478/amph-2022-0035

Mohandas, E. S., & colleagues. (2020). Language gamification in ESL classroom: Teaching perspective. *European Journal of Open Education and E-Learning Studies, 5*(2), 32-40. http://dx.doi.org/10.46827/ejoe.v5i2.3445

Mohzana, M. (2023). Evaluation of the use of gamification in language learning for students in Indonesia. *International Journal of Language and Ubiquitous Learning, 1*(4), 10–23. https://doi.org/10.70177/ijlul.v1i4.681

Prathyusha, N. (2020). Role of gamification in language learning. *International Journal of Research and Analytical Reviews, 7*(4), 90-97. http://ijrar.org/viewfull.php?&p_id=IJRAR2004090

Rahmani, E. F. (2020). The benefits of gamification in the English learning context. Indonesian *Journal of English Education, 7*(1), 21-35. https://doi.org/10.15408/ijee.v7i1.17054

Salimei, A., & Zangeneh, H. (2022). The effect of gamification on vocabulary learning (learning English as a second language) among the fifth-grade elementary school students. *Technology of Education Journal, 16*(4), 25-38. https://doi.org/10.22061/tej.2022.8550.2686

Wulantari, N. P., & others. (2023). The role of gamification in English language teaching: A literature review. *Journal on Education, 6*(1), 25-38. https://doi.org/10.31004/joe.v6i1.3328

Examples in: English
Applicable Languages: English
Applicable Levels: Tertiary

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