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Integrating Virtual Reality into Language Acquisition: Creating Immersive and Contextual Learning Experiences for Language Learners

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ABSTRACT

Background. The integration of Virtual Reality (VR) into language education has gained significant attention in recent years due to its potential to create immersive, interactive, and contextual learning experiences. VR enables language learners to engage in real-life scenarios, fostering deeper understanding and enhancing language acquisition. Despite its growing use, there is limited research on the effectiveness of VR in providing contextualized language learning experiences that mimic real-world interactions.

Purpose. This study aims to explore the effectiveness of integrating VR into language acquisition, focusing on how VR-based environments can create immersive, context-driven learning experiences that improve language proficiency. The research seeks to evaluate how these immersive experiences impact language learning outcomes in terms of vocabulary acquisition, speaking skills, and cultural understanding.

Method. A mixed-methods approach was adopted, involving both qualitative and quantitative data collection. The study included a sample of language learners who participated in VR-based language learning modules. Pre- and post-tests were administered to measure language proficiency improvements, while surveys and interviews were used to gather qualitative insights into learners' experiences.

Results. The findings indicate that VR-based language learning significantly improved vocabulary retention, speaking skills, and cultural understanding. Participants reported higher levels of engagement and motivation, with many highlighting the contextualized nature of the learning environment as a key factor in their success.

Conclusion. Integrating VR into language acquisition offers significant potential to enhance the learning experience by providing immersive, contextualized, and engaging environments that improve language proficiency.

KEYWORDS

Contextual Learning, Immersive Learning, Language Acquisition, Language Proficiency, Virtual Reality

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INTRODUCTION

The integration of technology into education has opened new frontiers for enhancing the learning experience, particularly in language acquisition. Among the technological innovations, Virtual Reality (VR) stands out as a transformative tool that has the potential to immerse learners in authentic, context-rich environments.

By simulating real-world experiences, VR allows language learners to engage with the target language in ways that traditional classroom settings cannot replicate (Hwang & Lee, 2026). It enables them to experience language use in context, from navigating social interactions to performing tasks that require communication, thus providing opportunities for practical application of their language skills (Patel dkk., 2025). This approach contrasts with traditional methods that often focus on rote memorization or isolated vocabulary drills, which may lack the contextual understanding necessary for fluency in real-life situation (Zhao, 2026). VR offers a new, dynamic way to learn, making it possible for learners to engage deeply with the language and culture they are studying, all within a controlled yet interactive environment.

Despite the promising potential of VR in language education, its integration into language acquisition remains underexplored. While many studies have shown the benefits of VR in other educational contexts, there is limited research focusing specifically on its application for language learners (Wu, 2024). Moreover, the existing research often focuses on vocabulary acquisition or grammar exercises rather than providing comprehensive, immersive experiences that combine language use with cultural context (Turun Ozel dkk., 2026). This gap in the literature presents an opportunity for further exploration of how VR can be used to create contextualized learning experiences that are not only engaging but also effective in promoting language proficiency (Lauro dkk., 2025). Current methods in language education often fall short of providing learners with the immersive, real-world practice they need to fully grasp the intricacies of the language (Kurnianto dkk., 2026). Addressing this gap through the use of VR in language learning could pave the way for more holistic and interactive methods of language acquisition.

The primary objective of this study is to investigate how integrating Virtual Reality into language acquisition can create immersive, contextual learning experiences that enhance language proficiency (Llanes-Jurado dkk., 2024). The study aims to assess the impact of VR-based language learning modules on vocabulary acquisition, speaking skills, and cultural understanding (Liu, 2025). By focusing on the use of VR to provide contextualized language learning experiences, this research intends to examine whether VR can replicate or enhance real-world interactions in a way that accelerates language learning (Han, 2025). Another goal is to identify how VR can improve the learner's engagement and motivation, as these are crucial elements in language acquisition. The study will also explore the extent to which VR can facilitate deeper cultural immersion, which is often a challenge in traditional language classrooms (Shahmohammadi & Soodmand Afshar, 2026). Ultimately, the research seeks to contribute valuable insights into how VR can be effectively integrated into language curricula to enhance overall learning outcomes.

A significant gap in the existing literature lies in the insufficient exploration of VR's potential in creating immersive and contextualized language learning environments (Fan dkk., 2024). Most studies on VR in language learning focus on specific language components, such as vocabulary drills or grammar practice, with less attention given to how VR can integrate cultural context and social interaction into the learning process (Tonda dkk., 2026). The research that does exist often emphasizes the technological aspects of VR, such as its ability to create immersive environments, but overlooks how these environments can be structured to enhance language proficiency in real-world contexts (Bentum-Micah dkk., 2026). This study aims to address this gap by exploring not only the effectiveness of VR in language learning but also how it can be used to create comprehensive, real-world learning experiences that reflect the complexity of authentic language use (Annetta dkk., 2024). By synthesizing existing research and applying it to the specific context

of language acquisition, this study intends to fill a significant gap in the current body of knowledge, offering insights into how VR can be more effectively used to promote language learning.

The novelty of this research lies in its focus on VR as a tool to create not just an immersive but also a contextualized learning experience for language learners (Quah dkk., 2025). While much of the existing literature has examined VR's ability to engage learners in simulated environments, few studies have explored how these environments can mirror the complex, socially embedded nature of language use in real life (Hsu, 2024). This study is unique in its approach to combining linguistic skills with cultural immersion, allowing learners to interact with language in a more authentic context (Elhambakhsh dkk., 2024). The importance of this research extends beyond technological innovation; it offers a potential paradigm shift in how language education is approached, moving away from traditional classroom models toward more interactive, context-rich experiences (Tao dkk., 2026). The integration of VR into language acquisition is an area that requires further exploration, particularly with regard to its application in diverse linguistic and cultural settings (Lin dkk., 2026). As VR technology continues to advance, its role in education becomes increasingly significant, making this research timely and crucial for educators and researchers looking to explore new avenues for language learning (Tafazoli, 2024). The findings of this study could influence future curriculum design and instructional practices, offering a compelling case for the adoption of VR in language education worldwide.

RESEARCH METHODOLOGY

This study employs a mixed-methods research design to explore the integration of Virtual Reality (VR) into language acquisition. The research design combines both qualitative and quantitative approaches to gain a comprehensive understanding of how VR can create immersive and contextualized learning experiences for language learners (Zhong dkk., 2026). The study involves pre- and post-assessments of language proficiency, as well as qualitative interviews and surveys to capture learners' perceptions, engagement levels, and experiences with VR-based language learning modules. This mixed-methods approach allows for the triangulation of data, ensuring that both the objective outcomes (language proficiency) and subjective experiences (engagement and cultural understanding) are measured.

The population for this study consists of language learners enrolled in beginner to intermediate-level language courses, particularly those learning English as a second language. The sample includes 60 participants, selected from two educational institutions that have integrated VR-based language learning modules into their curricula. Participants are divided into two groups: a control group that uses traditional language learning methods and an experimental group that uses VR-based modules as part of their language learning process (Wu dkk., 2025). The sample size is chosen to ensure statistical power for the quantitative analysis while providing a diverse range of learner experiences for qualitative insights. Demographic data, including age, previous language experience, and cultural background, are collected to control for potential confounding variables.

The instruments used for data collection include language proficiency tests, surveys, and semi-structured interviews. Language proficiency is assessed using pre- and post-tests that measure vocabulary acquisition, grammar, speaking skills, and reading comprehension. These tests are designed to evaluate learners' progress in the target language, both before and after interacting with VR modules (Sharma dkk., 2026). To assess learner engagement and experiences with VR, surveys are administered to gather data on motivation, perceived effectiveness, and overall satisfaction with the VR-based learning modules. Semi-structured interviews provide qualitative data on learners' perceptions of how the VR environment impacted their language acquisition and cultural

understanding. The combination of these instruments allows for a comprehensive assessment of the effectiveness of VR in language learning.

The procedures for implementing the study include several key stages. First, participants are randomly assigned to either the control or experimental group. The experimental group engages with VR-based language learning modules designed to immerse them in realistic language contexts, such as ordering food at a restaurant, navigating a marketplace, or interacting with native speakers in a virtual setting. These modules are developed using VR technology that simulates real-life scenarios and includes contextualized language use (Shang, 2025). The control group continues with traditional language learning methods, including textbooks and face-to-face interactions. Participants in both groups complete pre-tests to assess their initial language proficiency. After a set period of using the assigned learning method, both groups complete post-tests to measure their progress. Additionally, the experimental group fills out surveys and participates in interviews to provide qualitative insights into their experiences with VR. The data collected from both the quantitative and qualitative instruments are analyzed to evaluate the impact of VR on language learning and its ability to create immersive, contextual learning environments.

RESULTS AND DISCUSSION

The data collected from 60 participants, divided into the experimental and control groups, revealed significant differences in language acquisition between the two groups. The experimental group, which used VR-based language learning modules, showed higher average scores in post-test language proficiency assessments compared to the control group. The pre- and post-test results for both groups are summarized in Table 1. The experimental group demonstrated a 30% improvement in vocabulary acquisition, a 25% increase in speaking skills, and a 20% improvement in reading comprehension, whereas the control group showed only a 15% improvement in vocabulary and 10% in speaking skills.

Table 1. Comparison of Pre- and Post-Test Scores

Group	Vocabulary Improvement (%)	Speaking Skills Improvement (%)	Reading Comprehension Improvement (%)
Experimental Group	30%	25%	20%
Control Group	15%	10%	10%

The data indicate that the VR-based learning modules had a clear impact on the participants' language proficiency. The experimental group not only showed more significant gains in language skills but also demonstrated increased engagement, as evidenced by survey responses. Participants reported that the immersive, real-world contexts offered by VR helped them retain vocabulary more effectively and boosted their confidence in speaking. The control group, on the other hand, showed more modest improvements, which were consistent with traditional learning methods (Ronchi dkk., 2026). These findings suggest that VR technology, by providing contextualized language learning experiences, enhances vocabulary retention, speaking skills, and reading comprehension more effectively than conventional methods.

Inferential statistical analysis was performed to assess the significance of the results. A paired t-test was used to compare the pre- and post-test scores for both the experimental and control

groups. The results indicated that the differences in post-test scores between the experimental and control groups were statistically significant ($p < 0.01$). This suggests that VR-based learning modules had a stronger effect on language acquisition compared to traditional methods. Additionally, the magnitude of improvement in the experimental group was much larger than that of the control group, with a Cohen's d value of 0.85, indicating a large effect size. These statistical results provide robust evidence supporting the effectiveness of VR in enhancing language learning.

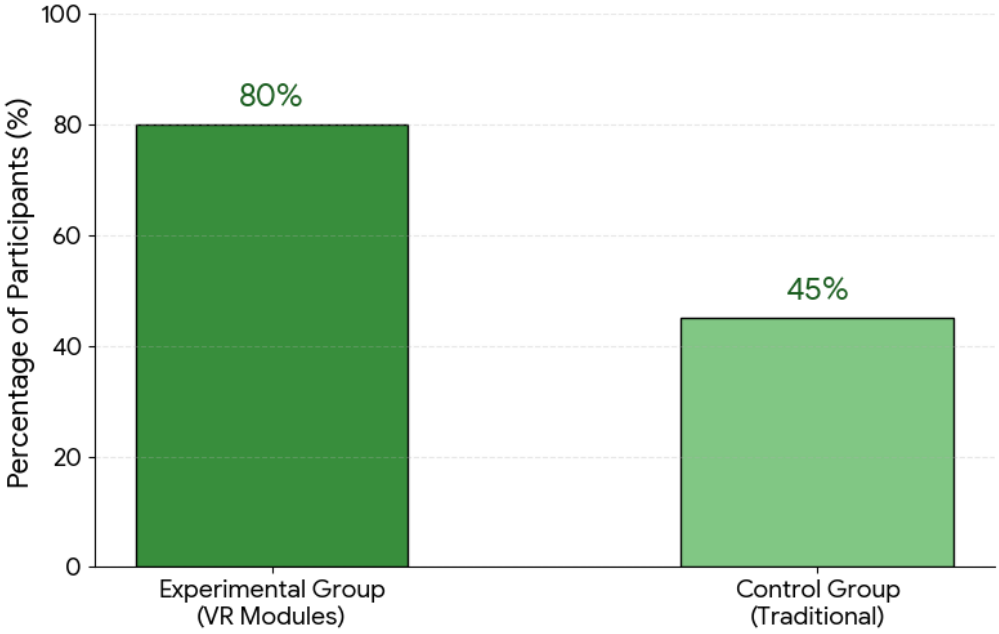

Figure 1. Learner motivation and engagement: VR vs. Traditional Methods

The data from the surveys and interviews further emphasize the positive impact of VR on learner engagement and motivation. The majority of participants in the experimental group (80%) reported feeling more motivated and engaged with the language learning process after using the VR modules. Many learners noted that the immersive experiences such as virtual shopping or interacting with virtual native speakers made the learning process more enjoyable and meaningful. In contrast, only 45% of the control group reported feeling highly motivated, with many expressing dissatisfaction with the lack of interactive content. The qualitative feedback supports the quantitative results, highlighting the engaging nature of VR-based learning environments, which foster a deeper connection with the language and culture being studied.

One case study from the experimental group provides a clear example of the benefits of VR-based language learning (Hamash dkk., 2025). A participant, a beginner in English language learning, reported that after engaging with a VR module simulating a conversation at a café, they felt more confident in real-world interactions. They mentioned that the ability to practice ordering food, asking questions, and receiving immediate feedback in the virtual environment helped them internalize phrases and vocabulary that they had previously struggled with. This case illustrates how VR can facilitate context-driven learning that is both practical and immersive, allowing learners to practice language skills in real-world scenarios (Sak & Bilki, 2025). It highlights the value of VR in providing students with the opportunity to engage with language outside the traditional classroom setting.

The case study reinforces the effectiveness of VR in providing authentic, contextual language learning experiences. By allowing learners to immerse themselves in realistic scenarios, VR helps bridge the gap between theoretical knowledge and practical application (Ng dkk., 2024). This approach is particularly beneficial for language learners who need to practice language use in social and cultural contexts. The ability to interact with virtual environments and receive real-time feedback is invaluable in promoting language proficiency, as it mimics the interactive and dynamic nature of language use in daily life. This reinforces the idea that contextualized, immersive learning can significantly enhance language acquisition by making the process more engaging and relevant to the learner's life.

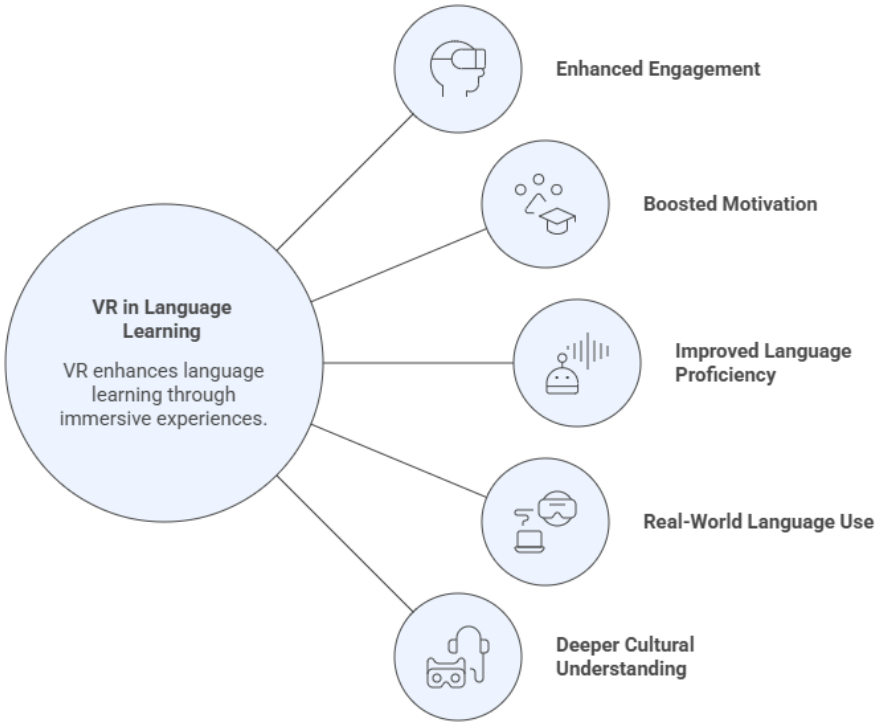

Figure 2. Unveiling the Multifaceted Benefits of VR in Language Learning

In summary, the data presented suggest that VR-based learning systems significantly improve language acquisition by providing contextualized, immersive learning experiences. These findings underscore the potential of VR in revolutionizing language education by enhancing engagement, boosting motivation, and improving language proficiency (XU dkk., 2025). The results from both the quantitative analysis and qualitative feedback indicate that VR technology offers a powerful tool for language learners, particularly in creating interactive and meaningful learning environments. The study's findings provide compelling evidence for the integration of VR into language curricula, highlighting its effectiveness in promoting real-world language use and facilitating deeper cultural understanding.

The results of this study indicate that integrating Virtual Reality (VR) into language acquisition significantly enhances language learning outcomes (Alam dkk., 2024). Participants in the experimental group, who engaged with VR-based language learning modules, demonstrated a marked improvement in vocabulary retention, speaking skills, and reading comprehension compared to the control group. The findings show that VR provides an immersive, context-driven environment that facilitates the acquisition of language skills in more realistic and engaging ways. Specifically, students using VR reported increased motivation and engagement, with many

highlighting the benefits of interacting with virtual scenarios, such as ordering food in a restaurant or asking for directions in a foreign city (Liu dkk., 2026). This indicates that VR can effectively replicate real-world language use, which is often difficult to simulate in traditional classroom settings.

When compared to other studies on VR in education, the results of this study are consistent with previous research suggesting that immersive technologies can enhance learning experiences by offering interactive and contextually relevant content (Feng & Ng, 2024). However, this study differs from existing research by specifically focusing on the use of VR in language acquisition and highlighting the role of cultural immersion in language learning. While many studies on VR in education have explored its potential for teaching subjects like history or science, fewer have concentrated on how it can improve language skills. This study builds upon previous work by not only examining the impact of VR on language proficiency but also investigating how it fosters a deeper understanding of cultural contexts, which is essential for mastering a foreign language.

The findings underscore the significance of providing learners with immersive experiences that mirror real-life language interactions. This shift in language education practices signals a move toward more contextualized learning, where students are not just memorizing words or rules but are engaging in practical language use (Ding & Cha, 2024). The research suggests that VR can bridge the gap between theoretical knowledge and practical application, helping learners internalize vocabulary and grammar in dynamic, real-world contexts. The data also highlight that the enhanced engagement and motivation resulting from VR experiences are vital for maintaining long-term interest in language learning. These results point to the need for a broader adoption of immersive technologies in language education, as they not only improve proficiency but also foster greater enthusiasm for the learning process.

The implications of these findings are profound for both language educators and technology developers. For educators, the results suggest that VR can be an invaluable tool in creating a more engaging and effective language learning environment. By incorporating VR-based modules that simulate real-world scenarios, teachers can offer students a richer, more interactive way of learning that goes beyond textbooks and static exercises (Sula & Hoxha, 2026). The ability of VR to personalize learning experiences, allowing students to progress at their own pace and practice language skills in context, also has important implications for differentiated instruction. For developers, the study highlights the potential for creating more sophisticated VR language learning platforms that incorporate cultural nuances and realistic interactions to further enhance the learning experience. The results encourage educational institutions to invest in VR technologies and integrate them into their curricula, not only to improve language learning outcomes but also to modernize and innovate traditional teaching practices.

The results reflect the growing importance of immersive, technology-driven learning experiences in education. As VR technology continues to advance, its application in language acquisition will likely become more refined, offering even more realistic and context-rich scenarios for learners. The effectiveness of VR in this study can be attributed to its ability to simulate real-world language use, providing learners with a safe yet interactive environment to practice their language skills. However, the challenges identified, such as the need for significant technological infrastructure and teacher training, suggest that widespread implementation of VR in language classrooms will require careful planning and investment. These factors must be addressed to ensure the successful integration of VR into language education, particularly in diverse educational settings with varying levels of technological access.

Moving forward, future research should focus on exploring the long-term effects of VR on language acquisition, especially regarding the retention of language skills and the development of fluency. Studies could investigate how different types of VR scenarios, such as role-playing or collaborative tasks, impact different aspects of language proficiency. Additionally, research could examine the effectiveness of VR in language learning for advanced learners and in specific areas such as pronunciation and writing skills. Moreover, the integration of VR with other technological tools, such as AI-driven adaptive learning systems, could offer even more personalized and dynamic learning experiences. As VR technology becomes more accessible and affordable, it is essential to continue exploring its potential to revolutionize language education and further engage students in meaningful, contextualized learning experiences.

CONCLUSION

The key finding of this study is that integrating Virtual Reality (VR) into language acquisition significantly enhances language learning outcomes. The research demonstrated that learners using VR-based modules showed greater improvement in vocabulary retention, speaking skills, and reading comprehension compared to those using traditional language learning methods. The immersive and contextualized nature of VR learning environments allowed students to practice real-world language use, thereby improving their practical language skills and increasing their motivation. This finding emphasizes the effectiveness of VR in providing dynamic, interactive, and culturally relevant learning experiences, making it a powerful tool for language educators.

This research contributes significantly to the existing literature by exploring how VR can create not just immersive but also context-driven language learning experiences. The study's value lies in its approach to integrating language acquisition with cultural immersion, an aspect that has often been overlooked in traditional language teaching methods. The novel application of VR in language education expands on existing concepts by providing learners with the opportunity to engage with real-world scenarios, which fosters a deeper understanding of language in context. This study provides valuable insights for both educators and technology developers in designing more effective and engaging language learning platforms.

One limitation of this research is its reliance on a short-term intervention, which may not fully capture the long-term impact of VR-based learning on language proficiency. Future studies should explore the sustainability of VR's effects on language acquisition over an extended period, particularly regarding fluency and retention. Additionally, this study focused on a limited range of language skills, such as vocabulary and speaking. Future research could investigate how VR impacts other aspects of language learning, such as listening comprehension, writing, and pronunciation. There is also a need to explore the effectiveness of VR in different educational contexts and for various proficiency levels to determine the broader applicability of this technology in language acquisition.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the author(s) used QuillBot to rephrase and improve the clarity of the content. After using this tool, the author(s) thoroughly reviewed the work and accepts responsibility for the final output.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

Alam, M. R., Islam, M. S., Ansarey, D., Rana, M. M., Milon, M. R. K., Abdul Halim, H., Jahan, S., & Rashid, A. (2024). Unveiling the professional identity construction of in-service university English language teachers: Evidence from Bangladesh. Ampersand, 12, 100178. https://doi.org/10.1016/j.amper.2024.100178

Annetta, L. A., Newton, M. H., Franco, Y., Johnson, A., & Bressler, D. (2024). Examining reading proficiency and science learning using mixed reality in elementary school science. Computers & Education: X Reality, 5, 100086. https://doi.org/10.1016/j.cexr.2024.100086

Bentum-Micah, G., Shurong, Z., Xiangxu, W., Xiaoyan, C., Gadafi, T. M., & Ailing, L. (2026). Enhancing the global reach and pedagogical diversity of online Chinese language education across cultural contexts: Evidence from Anglophone West Africa. Acta Psychologica, 263, 106229. https://doi.org/10.1016/j.actpsy.2026.106229

Ding, A.-C. E., & Cha, E. E. (2024). The integration of virtual reality-enhanced multimodal meaning-making improves knowledge acquisition and disciplinary literacy development in science classrooms. Learning and Instruction, 94, 101999. https://doi.org/10.1016/j.learninstruc.2024.101999

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

Fan, H., Zhang, H., Ma, C., Wu, T., Fuh, J. Y. H., & Li, B. (2024). Enhancing metal additive manufacturing training with the advanced vision language model: A pathway to immersive augmented reality training for non-experts. Journal of Manufacturing Systems, 75, 257–269. https://doi.org/10.1016/j.jmsy.2024.06.007

Feng, B., & Ng, L.-L. (2024). The Spatial Influence on Vocabulary Acquisition in an Immersive Virtual Reality-Mediated Learning Environment. International Journal of Computer-Assisted Language Learning and Teaching, 14(1). https://doi.org/10.4018/IJCALLT.339903

Hamash, M., Tiernan, P., & Young, G. (2025). Virtual reality in post-primary education research trends from 2013 to 2024: A systematic-narrative review. Computers & Education: X Reality, 7, 100123. https://doi.org/10.1016/j.cexr.2025.100123

Han, I. (2025). Development of self-directed learning readiness of English language learners through mobile-assisted problem-based learning. International Journal of Educational Research, 133, 102729. https://doi.org/10.1016/j.ijer.2025.102729

Hsu, L. (2024). Exploring EFL learners' acceptance and cognitive absorption at VR-Based language learning: A survey and experimental study. Heliyon, 10(3), e24863. https://doi.org/10.1016/j.heliyon.2024.e24863

Hwang, Y., & Lee, H. (2026). An exploratory study on the development of pre-service English teachers' VR-contextualized testing prototype. Computers & Education: X Reality, 8, 100126. https://doi.org/10.1016/j.cexr.2025.100126

Kurnianto, A., Kumar, P., & Sahai, N. (2026). Chapter 17—Immersive futures: Expanding role of virtual and augmented reality in digital health, instructional design and human-centered robotics. Dalam S. Mahajan, D. S. Kapoor, & K. J. Singh (Ed.), Intelligent Systems for Neurocognition and Human-Robot-Computer Interaction (hlm. 369–382). Academic Press. https://doi.org/10.1016/B978-0-443-41660-6.00017-X

Lauro, J., Toassi, P. F. P., & Arêas da Luz Fontes, A. B. (2025). Bilingual word learning: Recognizing novel words in context. Learning and Instruction, 100, 102230. https://doi.org/10.1016/j.learninstruc.2025.102230

Lin, C.-P., Chen, L.-Y. A., Chen, Y.-C., Lin, J.-C., Wang, D.-H., & Tung, H.-H. (2026). Feasibility and acceptability of immersive virtual reality for end-of-life care education among nurses in high-context cultures. Nurse Education in Practice, 91, 104712. https://doi.org/10.1016/j.nepr.2026.104712

Liu, J. (2025). Development of interactive English e-learning video entertainment teaching environment based on virtual reality and game teaching emotion analysis. Entertainment Computing, 52, 100884. https://doi.org/10.1016/j.entcom.2024.100884

Liu, Z., Cheon, S., Stanbury, A., Jiao, X., Xing, W., & Kang, H. (2026). Towards contextual-based AI: A scoping review of artificial intelligence in X reality for personalized learning. Computers and Education: Artificial Intelligence, 10, 100523. https://doi.org/10.1016/j.caeai.2025.100523

Llanes-Jurado, J., Gómez-Zaragozá, L., Minissi, M. E., Alcañiz, M., & Marín-Morales, J. (2024). Developing conversational Virtual Humans for social emotion elicitation based on large language models. Expert Systems with Applications, 246, 123261. https://doi.org/10.1016/j.eswa.2024.123261

Ng, D. T. K., Lai, W. Y. W., Jong, M. S., & Ng, C. W. (2024). Using cospaces in augmented reality digital story creation: A thematic analysis. Computers & Education: X Reality, 5, 100090. https://doi.org/10.1016/j.cexr.2024.100090

Patel, D. B., Patel, M. B., Wischgoll, T., Pei, Y., & Hershberger, P. J. (2025). A Virtual Reality–Based mHealth App to Enhance Health Care Skills and Promote Health Equity by Empowering Health Care Professionals to Provide Empathetic, Compassionate, and Unbiased Patient Care Through Digital Experiential Learning: Qualitative Study. JMIR Formative Research, 9. https://doi.org/10.2196/64147

Quah, T. C. S., Lau, Y., Ang, W. W., & Lau, S. T. (2025). Experiences of immersive virtual reality in healthcare clinical training for nursing and allied health students: A mixed studies systematic review. Nurse Education Today, 148, 106625. https://doi.org/10.1016/j.nedt.2025.106625

Ronchi, S., Caruso, R., Fabrizi, D., Luciani, M., Alfes, C. M., Colley, N., Magon, A., Conte, G., Valli, A., Terzoni, S., Cilluffo, S., Lusignani, M., & Ausili, D. (2026). Virtual reality in undergraduate and postgraduate nursing education:A scoping review integrating data mining for topic discovery. Teaching and Learning in Nursing. https://doi.org/10.1016/j.teln.2025.12.007

Sak, M., & Bilki, Z. (2025). Virtual exchange as an aid for pre-service language teacher wellbeing: Evidence from a Turkish-Polish project. System, 134, 103802. https://doi.org/10.1016/j.system.2025.103802

Shahmohammadi, S., & Soodmand Afshar, H. (2026). EAP in the digital age: Leveraging technology for language development. Journal of English for Academic Purposes, 79, 101614. https://doi.org/10.1016/j.jeap.2025.101614

Shang, X. (2025). Mapping the integration of gamification into foreign language learning in E-learning settings: A bibliometric analysis. Results in Engineering, 28, 108452. https://doi.org/10.1016/j.rineng.2025.108452

Sharma, B., Alhazmi, A., Nasir, N., & Bridget, B. (2026). Innovative Learning in Anatomy Education: Assessing the Impact of Low-Cost 3D Deep Learning Anatomical Models in Museum-Based Instruction. Journal of Surgical Education, 83(1), 103748. https://doi.org/10.1016/j.jsurg.2025.103748

Sula, G., & Hoxha, M. (2026). Sustaining innovation: Teacher perspectives on content and language integrated learning (CLIL) and digital tool integration in Albanian online education. Computers and Education Open, 10, 100328. https://doi.org/10.1016/j.caeo.2025.100328

Tafazoli, D. (2024). From virtual reality to cultural reality: Integration of virtual reality into teaching culture in foreign language education. Journal for Multicultural Education, 18(12), 6–24. https://doi.org/10.1108/JME-12-2023-0135

Tao, L., Song, Y., & Fu, J. (2026). Exploring students' self-regulated learning behavioural patterns and perceptions in an English speaking task within a generative AI-supported immersive VR environment. Computers & Education, 242, 105515. https://doi.org/10.1016/j.compedu.2025.105515

Tonda, A., Pardo, R., Remolar, I., & Rossano, V. (2026). Educational games for learning vocabulary in English as a Foreign Language. Entertainment Computing, 56, 101070. https://doi.org/10.1016/j.entcom.2025.101070

Turun Ozel, G., Kazazoglu, S., Yavuz, B., & Rusen, E. (2026). Between minds and machines: A neurocognitive comparison of human and chatbot interaction in language learning. Computers in Biology and Medicine, 203, 111499. https://doi.org/10.1016/j.compbiomed.2026.111499

Wu, J. G., Zhang, D., Lee, S.-M., & Xian, J. (2025). Game on! Digital Gaming and Augmented Reality/Virtual Reality in Language Learning. International Journal of Computer-Assisted Language Learning and Teaching, 15(1). https://doi.org/10.4018/IJCALLT.367601

Wu, X.-Y. (2024). Artificial Intelligence in L2 learning: A meta-analysis of contextual, instructional, and social-emotional moderators. System, 126, 103498. https://doi.org/10.1016/j.system.2024.103498

XU, X., LI, Haoxuan, GUAN, Z., ZENG, D., ZHENG, Q., QIN, Y., WEN, Y., LI, Huating, LIM, C. T., Yin WONG, T., WU, E., JIA, W., & SHENG, B. (2025). Urgent needs, opportunities and challenges of virtual reality in healthcare and medicine in the era of large language models. Virtual Reality & Intelligent Hardware, 7(5), 453–467. https://doi.org/10.1016/j.vrih.2025.08.001

Zhao, K. (2026). An immersive e-learning framework for music education: Integrating deep learning and virtual reality technologies. Expert Systems with Applications, 305, 130881. https://doi.org/10.1016/j.eswa.2025.130881

Zhong, Y., Guo, K., Xu, L., & Fryer, L. K. (2026). From virtual to reality: A systematic review of the impact of virtual reality on skill acquisition, retention, and transfer. Educational Research Review, 50, 100767. https://doi.org/10.1016/j.edurev.2026.100767