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ENHANCING ENGLISH LANGUAGE LEARNING THROUGH VIRTUAL REALITY: A CONCEPTUAL FRAMEWORK ON THE MEDIATING ROLE OF IMMERSIVE ENGAGEMENT ON LEARNER OUTCOMES

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Abstract:

This paper conceptualizes how immersive engagement may serve as a mediating factor between VR use and learner outcomes to build on research that evaluates the role of VR in facilitating English language learning. Theoretical perspectives were integrated, using a narrative synthesis and a conceptual analysis approach, focusing mainly on Experiential Learning Theory and Multimedia Learning Theory. Data was collected and reviewed from literature using Scopus database to identify key themes, gaps and propositions for a conceptual framework. A conceptual framework was suggested that positions immersive engagement—entailing behavioral, affective, and cognitive aspects—as the core mechanism through which VR experiences lead to enhanced language learning outcomes. Some highlights include VRs capacity to decrease anxiety, increase learner motivation, as well as support vocabulary acquisition and communication skills in contextualized, immersive environments. This framework provides theoretical guidance for researchers as well practical guidance for educators, developers, and policymakers. Its focus is thus on intentional design features of VR — interactivity, realism, and usability — as well as on the need to improve accessibility and infrastructure in order to maximize pedagogical impact. This study aims to fill that theoretical gap and provides a framework for a conceptual model that can direct future empirical research and guide the practical integration of VR technology in English language instruction.

Keywords:

Engagement, Framework, Immersion, Technology, VR

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Introduction

The incorporation of technology into learning spaces has profoundly changed conventional instructional practices, especially language learning. Among the emerging technologies, the Virtual Reality (VR) has drawn much attention with its ability to create interactive, immersive, and context-rich environments, enhancing learner engagement and performance. The ability of virtual reality (VR) to recreate environments we would experience in real life opens new doors for English language learners to practice their communicative skills in contexts that come more naturally than other forms of classroom settings allow (Lee et al., 2024; Nicolaidou et al., 2023). With the need for effective English language learning remaining a worldwide constant, the implementation of VR to address longstanding problems in language teaching, such as insufficient exposure to genuine contexts and learner anxiety, has become more critical than ever.

Despite growing research on VR in educational settings, studies investigating the use of VR for English language learning seem to be fragmented. Research suggests the possibility of using VR to increase student motivation, commitment, and self-efficacy, as well as to promote vocabulary learning and speaking skills (Raman et al., 2023; Seefried et al., 2024). However, reviews do not usually explore the mediatory processes through which VRs influence learning outcomes. Designing for immersive engagement—a multifaceted construct that spans behavioral, affective, and cognitive dimensions—has emerged as a key mediating force linking VR experiences with increased learning effectiveness (Lee et al., 2024; Sun et al., 2020).Yet no research has sought to answer the question of how immersive engagement mediates the use of VR and learner outcomes in English language teaching in a unique way.

This study fills this gap by creating a conceptual model of the mediating role of immersive engagement in VR-supported English language learning. Although VR has proven as an efficient means of engagement and improving learning outcomes in previous works, little work has been done systematically examining the processes behind these relationships (Yu & Duan, 2024). By fusing task-based language learning (TBL) principles and user experience design in virtual reality (VR), this article strives to bridge the gap between theory and practice and provide to developers and instructors actionable insights. This proposed framework articulates a nexus between technological innovation and pedagogical efficacy and serves as a guide for how to maximize the potential of VR in language education.

To conclude, this study is relevant in practice and theory respects, and its significance is twofold. It contributes to theoretical knowledge by elucidating the mediating processes and how VR interacts with language learning outcomes, enhancing current models for technology mediated language learning. At a concrete level, it provides practical guidance on the development of VR tools that shall better leverage immersion and, thus, the quality of learning that can be achieved.

The practical aspects need to be addressed, with regards to applying virtual reality solutions so the approach is not existing in silo, but is congruently equitable and scalable (Yang et al., 2020; Piayura et al., 2024). Indeed, this research has potent significance for educators, legislators and technologists alike who are eager to explore the potential impact that the emerging space of virtual reality may have on the delivery of language learning. The current study takes a holistic perspective through integrating core assumptions of experiential learning

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theory and multimedia learning theory inherent in the theory together to explore how virtual reality, immersive engagement, and learning outcomes interact.

The paper proceeds as follows: in Section 2 the theoretical foundations that substantiate the conceptual development are reviewed, building on Experiential Learning Theory (ELT) and Multimedia Learning Theory (MLT). Next, Section 3 introduces a comprehensive conceptual model and hypotheses regarding the mediating effect of immersive engagement on the relationship between VR and English learning. Section 4 considers how the model we propose might inform future empirical inquiries and pedagogical practices. Lastly, Section 5 presents final reflections that discuss theoretical contributions, practical implications, and limitations of the proposed conceptual framework. This paper is expected to provide a theoretical basis for further empirical studies and practice-oriented developments with respect to the field of VR-supported English language instruction.

Literature Review

Virtual Reality (VR) in English Language Learning

English as a language learning and virtual reality (VR) is a paradigm shift in language learning by educators. VR technologies present interactive environments that mimic the physical world, and learners have a new opportunity to develop their language skills in contextually rich environments (Lee et al., 2024). This function is especially vital for ELLs as it overcomes barriers such as limited exposure to real world interactions and the anxiety often linked to practice in unaccommodating surroundings (Taguchi & Hanks, 2024). Previous research revealed that virtual reality enhances not only behavioral participation, but also emotional and cognitive levels of learning and is thus a multi-dimensional medium to foster language learning (Wang & Zhou, 2024). Moreover, virtual reality (VR) shows promise of providing instant feedback and contextualized language input, which align with the goals of contemporary instructional approaches, such as task-based language teaching (TBLT), reflecting authentic tasks rather than rote memorization (Seefried et al., 2024).

However, it cannot be considered the perfect solution, and it has its own problems in the process of VR applied to English learning. However, technical shortcomings related to hardware constraints and software design can impact its effectiveness in learning environments (Di Natale et al., 2020). In addition, VR content needs to be well-designed to fit learning goals and learner needs. Interactive VR environments, for instance, can enhance learners' confidence and motivation, whereas poorly designed scenarios may lead to boredom or frustration (Shi et al., 2024). In its current form however, despite the significant promise of VR, its effectiveness depends on careful consideration in its implementation and continuous enhancement of both the technology and pedagogy.

Immersive Engagement

The most literally effective aspect of using VR for language learning is the use of the technology as an immersive experience, which acts as a key mediator between the simulation technology and any pedagogical objectives. Previous research indicates that VR can promote affective and cognitive involvement of learners to a large extent through interactive and realistic scenarios that simulate real communication (Sun et al., 2020). Students Engagement has been directly related to improved educational outcomes as people learn and remember better when emotionally invested and in the right state of mind (Xin, 2022). For instance,

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studies have already shown that students engage in virtual reality (VR) language tasks report an increased sense of enjoyment, self-efficacy, and motivation, which all reinforce continued engagement as well as enhanced performance outcomes (Wang & Zhou, 2024).

Besides individual benefits, immersive engagement also facilitates social interaction, which is a fundamental part of language learning. Highly immersive VR environments enable learners to practice verbal and non-verbal communication skills in interactive situations, fostering interactional growth and cultural sensitivity (Taguchi & Hanks, 2024). However, the level of interactivity among VR systems is not equal, and its impact on engagement is not uniform. While some research indicates that heightened interactivity may improve learning gains, other research finds that excess complexity may reduce the overall quality of the experience (Harris & Sun, 2022). These findings indicate the need for balance between usability and interactivity for optimizing immersion in VR-supported language instruction.

Learner Outcomes

Ultimately, the goal of associating VR with English language learning is to enhance the attainment of the learners, defined here as grammatical linguistic competence, retention, and affective well-being. According to a review of empirical studies, it is shown that VR can noticeably improve that general effect of language learning elements, which refer to grammar, vocabulary, pronunciation, and discourse management (Sally Wu & Alan Hung, 2022). For instance, studies demonstrate the potential of virtual reality learning to enhance the English-speaking performance and communication willingness of elementary learners, revealing prospects for development in communicative competence (Shi et al., 2024). In addition, the ability of the virtual reality to provide a low-pressure setting helps reduce the learners' anxiety thus enabling the learners to practice without fearing being judged, thus being a key factor in confidence and autonomy development (Nowak & Kaplan-Rakowski, 2024).

The cognitive and affective benefits additionally strengthen these findings. Evidence indicates that VR not only improves test performance after immediate testing but also supports long-term retention since students are bound to remember what they have learned through simulation (Xin, 2022). Second, VR supports the emotional well-being of learners by providing a feeling of presence and immersion, hence overall satisfaction with the learning process (Nowak & Kaplan-Rakowski, 2024). However, to what extent VR affects learner success depends on the level of environmental realism, instructional design quality, and the level of learner immersion. It is important to control these variables if the revolutionary promise of VR is to be realized in language learning.

Methodology

Conceptual Analysis and Narrative Synthesis

This paper uses a conceptual analysis and narrative synthesis framework to investigate the use of Virtual Reality (VR) in English language learning, and explores how immersive engagement mediates learner outcomes. Such works stress that conceptual papers are typically not original empirical studies but rather synthesize and integrate prior theoretical insight as well as empirical evidence to arrive at new or reformed conceptual approaches (Green et al., 2006). Therefore, this paper uses current literature to formulate a conceptual model informed by theory.

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A narrative synthesis was selected to enable the inclusion of mixed literature: empirical articles, theoretical contributions and methodological papers. Interpretive synthesis facilitates the construction of an overarching theoretical framework by interpreting and connecting the diverse contributions of the literature under one coherent story (Braun & Clarke, 2006). This study explores nuanced interactions between VR technologies, immersive learner engagement, and educational outcomes using narrative synthesis methodology, which informs the articulation of an integrated conceptual framework.

Approach to Literature Integration

Among others, the integration of literature included a systematic identification, selection and synthesis of academic works from peer-reviewed journal articles, conference proceedings, relevant theoretical papers, etc. To ensure that the presented conceptual insights were robust and representative of current research trajectories, literature was collected systematically.

Data were primarily extracted from the Scopus database, which has comprehensive, multidisciplinary coverage of published academic literature. The literature search was conducted using a well-developed search string intended to capture our basic elements of interest relevant to the research question as follows:

("virtual reality" OR "vr" OR "immersive technology" OR "simulated environment")
AND ("english language" OR "language learning" OR "language acquisition" OR esl)
AND (education OR teaching OR learning OR instruction)
AND (engagement OR motivation OR interaction OR participation)
AND ("assessment" OR "evaluation" OR "feedback" OR "performance")

The search was conducted iteratively with the guidance and input of domain experts in educational technology and language learning, ensuring both comprehensiveness and relevance.

Data Collection Procedure

The first literature search was restricted to 2013 to 2024 English publications, to feature more recent innovations in VR technology and updated pedagogical trends. Identified articles were screened in a detailed two-stage manner:

- Initial Selection: Title and abstracts were screened based on predefined inclusion criteria, specifically: relevance to VR applications in language learning; coverage of immersive engagement; and evidence relating to learner outcomes. We included only English-language papers and excluded non-peer-reviewed studies and irrelevant studies.
- Full-text Screening: The articles that passed through the initial screening were re-examined in full text to confirm their eligibility and relevance. The last batch of articles included peer-reviewed studies and theoretical contributions to the field that directly addressed VR, immersive engagement and learners' outcomes in the specific contexts of English language teaching.

These stringent filtering mechanisms assured that subsequently the conceptual synthesis was performed on relevant high-quality scholarly works.

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Conceptual Development Process

The narrative development of the proposal can be seen as a phased approach involving three distinct phases:

- Functional Constructs Identification:
  The analysis of selected literature allowed us to clearly define key constructs such as immersive engagement (comprising behavioral, affective, and cognitive dimensions), VR affordances, and language learner outcomes.
- Integration of Theory:
  The research is conceptually framed primarily by Experiential Learning Theory (ELT; Kolb, 1984), Multimedia Learning Theory (MLT; Mayer, 2005), and principles of Task-based Language Learning (TBL; Ellis, 2003). Thus, to synthesize these theories came together to explain in a well-rounded manner that immersive VR environments to drive meaningful language learning experiences.
- Synthesis and Model Articulation:
  Based on extensive empirical studies and theoretical perspectives, a conceptual model was developed to illustrate how immersive engagement mediates the relationship between VR usage and language learner outcomes. This synthesis was carried out by examining and linking a range of literature together to create significant theoretical intertwinements and implications for pedagogy.

This systematic conceptual analysis enables a theoretically grounded framework that generates approachable and actionable insights, which right the new empirical validation and pedagogical practice. Figure 1 highlighted the important steps in data collection and review strategies conducted for this study.

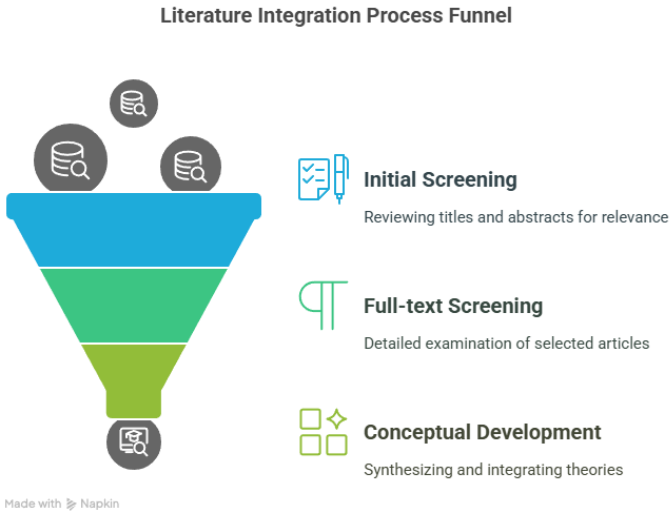

Figure 1 Key Steps To Data Collection And Review Strategy

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Findings

Key Findings from the Narrative Review

Table 1: Table of Key Findings

Aspect	Key Findings	Descriptions
Engagement	VR significantly increases engagement and motivation.	Studies consistently highlight that VR environments enhance behavioral, affective, and cognitive engagement by providing immersive and interactive experiences (Khasawneh, 2024; Lee et al., 2024; Nicolaidou et al., 2023).
Confidence and Anxiety	VR reduces anxiety and boosts confidence in learners.	By creating safe, judgment-free spaces for practice, VR helps learners overcome language anxiety and build self-efficacy (Košatka et al., 2023; Taguchi & Hanks, 2024; Yu & Duan, 2024).
Learning Outcomes	VR improves vocabulary acquisition, verbal communication, and overall proficiency.	Interactive VR scenarios have been shown to enhance specific language skills, such as vocabulary retention and communicative competence, through task-based learning (Lee et al., 2024; Seefried et al., 2024; Luan et al., 2024).
Realism and Interactivity	Higher realism and interactivity in VR environments correlate with better learning effectiveness.	Realistic simulations and interactive features foster deeper engagement and improve knowledge retention, making learning more effective (Sun et al., 2020; Harris & Sun, 2022; Suarez-Pareja & Rojas, 2025).
Technical Challenges	Technical issues can hinder the pedagogical effectiveness of VR..	Hardware limitations, software glitches, and connectivity problems may disrupt the learning experience, emphasizing the need for reliable systems (Taguchi & Hanks, 2024).
Design Improvements	Continuous improvements in VR content and design are necessary for optimal outcomes.	Well-designed VR applications that align with learning objectives and user needs lead to better learner outcomes (Piayura et al., 2024; Luan et al., 2024).
Accessibility	Accessibility and usability are crucial for broader adoption of VR in educational settings.	Ensuring equitable access to VR technology and designing user-friendly interfaces are essential for scaling its implementation across diverse learner populations (Yang et al., 2020).

Summary of Key Findings

This narrative review reveals that VR can notably improve the engagement of learners both on behavioral, affective, and cognitive aspects. Such ubiquitous engagement stems from experiential and hands-on learning, wherein learners can be connected and interactive, collaborative and productive, and engaged deeply and meaningfully with language learning content. They create lively learning spaces that encourage students to stay engaged with their studies and ultimately achieve better educational data.

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Additionally, VR can alleviate feelings of anxiety in learners. Moreover, with a safe, supportive, and non-restrictive virtual milieu, learners can practise their linguistic skills without the threat of being rated adversely. This environment increases learners' confidence and sense of efficacy significantly, increasing their overall communication willingness and providing motivation for participating in language activities.

It is also evident that the unique and engaged features of VR lead to significant improvements in language learning results. Whether the users' learning is receptive or productive, the effectiveness of VR for vocabulary retention, verbal communication skills, and language proficiency is supported by empirical evidence. VR simulations create an immersive experience, enabling learners to use the language in context and facilitating more contextualized and sustainable language acquisition.

When it comes to realism and interactivity, the review underlines that these characteristics are directly linked to more effective learning. Greater realism and interactive elements of VR settings thus drive deeper cognitive processing, which leads to improved comprehension and memory encoding. As a result, VR simulations designed with real-life situations can greatly enhance the effectiveness of teaching languages.

The identified technical issues underscore that under the right pedagogical settings, hardware limitations and software bugs can limit the real educational effect of VR. These challenges highlight the need to create dependable, resilient virtual reality setup that can facilitate immersive learning experiences. So, meeting these challenges is vital to help ensure VR can be widely adopted and successful in educational settings.

Continuous iteration and design improvements were stated to be key to improving the learner experience and consequently the learning outcome. VR applications must not only be aligned with educational goals and learner needs but also provide highly effective instruction. Improvement in design features and content quality is needed to keep learners hooked and increase learning impact.

The accessibility was proved to be an important point for a broader adoption and successful use of VR tech in the education environment. VR technologies need to be accessible and cognitive load ensured, not only to satisfy a wider cohort of learners but also to champion equitable education for all. Addressing accessibility becomes intrinsic to growing VR solutions effectively.

Development of Theoretical Framework

Introduction to the Theoretical Framework

Theoretical support for this study is taken from both Experiential Learning Theory (ELT) and Multimedia Learning Theory (MLT), which jointly provide a robust framework for comprehending the impact of Virtual Reality (VR) on English language acquisition. That premise was expanded into the Experiential Learning Theory by Kolb (1984) who suggested that people learn by going through the process of concrete experience, reflective observation, abstract conceptualization and active experimentation. This theory aligns neatly with the immersive quality of VR and allowing learners to rehearse in realistic simulations reflective of real-world situations and supports experiential learning. As another example, Multimedia

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Learning Theory (Mayer, 2005) dovetails with ELT to illustrate how the simultaneous exposure of visual, auditory, and kinesthetic stimuli enhances our cognitive processing of the material, as well as our retention of the knowledge. In combination, these theories offer two theoretical frameworks for examining the ways in which VR encourages and enhances immersive learner engagement in association with outcomes for learners engaged in the learning of English.

Application of the Theory in the Context of the Study

This study adds to the existing literature by employing ELT and MLT as the core explanation for the mediating effect of immersion on the learnability of English through VR enhancement. According to ELT, VR environments provide learners with opportunities for concrete experiences—e.g., practicing conversational skills in simulated real-world contexts—and reflective observation enabling learners to critique their performances and revise their strategies (Kolb, 1984). For example, the strengths of VR to mimic a scenario which can range from ordering foods at a restaurant to attending a job interview allows learners to practice how to use the language in a low-stakes environment. Simatalos notes that the multimodal design of VR—integrating visual, auditory and interactive elements—lowers cognitive load and increases understanding (Mayer, 2005). The study emphasizes that by integrating these theories, they show how VR promotes behavioral, affective, and cognitive engagement which, in turn, enhance language proficiency and confidence.

Conceptualization of the Framework

The theoretical model developed in this paper combines the principles of ELT and MLT to account for the associations among VR, immersive engagement, and learner outcomes. In its essence, VR is the innovative technology that builds immersive environments for experiential learning. Immersive engagement is a multidimensional construct consisting of behavioral, affective and cognitive components, and serve as the mediating factor that connects VR use and improved learner outcomes. Behavioral engagement, affective engagement, and cognitive engagement, while the former illustrates active participation in VR activities, the latter reflects emotional investment and motivation, and the latter represents deep processing of linguistic content. It has been shown that these dimensions add to better results like vocabulary acquisition, verbal communication skills, and less spoken anxiety (Lee et al., 2024; Sun et al., 2020). It also considers external factors that may affect the effectiveness of VR applications, including technical barriers and accessibility.

Based on the previous deliberations, Figure 2 highlighted the proposed framework for the study.

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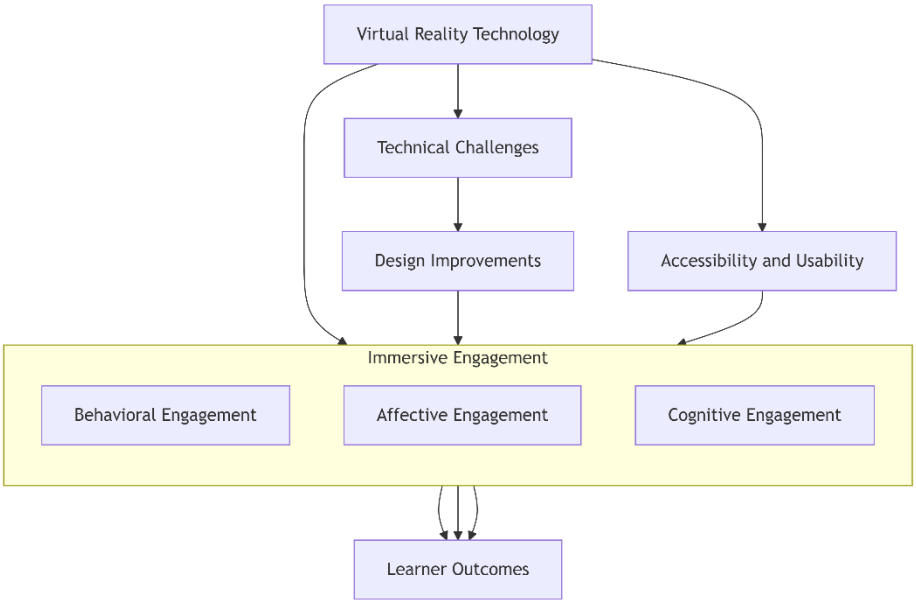

Figure 2: Theoretical Framework of the Study

Figure 2 showed the present conceptual framework that placed immersive engagement as the primary mediator that bridges the experience of VR with meaningful outcomes for the learner. Immersive engagement, which has behavioral, affective, and cognitive components, is fundamental to the connection between VR experiences and actual education outcomes like improved vocabulary, improved verbal communication, and improved learner confidence (Liu et al. 2022).

Many elements, including technical challenges, design improvements and accessibility, are essential external factors shaping the efficacy of VR technologies. By combating technical barriers and improving the design of VR applications, VR environments become pedagogically viable, friendly to all users, and broadly accessible. This integrated approach underscores the importance of combining technology with sound pedagogy to maximize the benefits of VR for language learning.

Practical Implications and Application

The theoretical framework will be beneficial for teachers, developers and policy makers wishing to adopt VR to support English language learning. For the educators, the framework suggests that VR based activities should be designed and aligned to the experiential learning cycle of this framework and also to the principles of multimedia design of MLT. VR applications can require learners to analyze what they have done, remind themselves of how they could have approached a problem or a situation differently, and find solutions going forward, etc., using embedded reflective prompts. Developers use the framework to build VR apps that achieve a high level of engagement by finding a balance between interactivity and realism/usability. However, since VR acquisition costs can be prohibitive, policymakers can give attention to initiatives that promote equitable access by overcoming barriers of cost and infrastructure (Yang et al., 2020). Furthermore, the framework highlights the need for continuous evaluation and enhancement of VRS tools to guarantee alignment with pedagogical goals and learner requirements.

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This theoretical framework is an attempt to justify the transformative properties of VR in the English language learning process integrating the two theories: Experiential Learning Theory and Multimedia Learning Theory. The framework draws VR phenomenon through using immersive engagement as the mediating factor between VR use and the learners outcome. This work also fills gaps in the literatures and provides a model synthesizing theoretical insight and empirical evidence. To summarize, the framework offers valuable perspectives that can guide the design of VR-based language instruction, and highlights the importance of intentional design, application and evaluation of VR to maximize the benefits of this technology for language learning.

Conceptual Proposition Development

Virtual Reality (VR) in English Language Learning Affects Learner Outcomes

Through advances in VR, these immersive environments can affect learners in a huge way by enhancing their motivation and providing individualized context. Thus, one can imitate a real-life situation with VR that involves all three: behavioral, affective, and cognitive engagement, which significantly impacts language proficiency, motivation, and retention (Lee et al., 2024; Nicolaidou et al., 2023). With the ability to generate a sense of presence and provide immediate feedback, VR has been shown to improve vocabulary retention and communication skills (Luan et al., 2024; Piayura et al., 2024), especially in task-based language learning. Moreover, VR alleviates anxiety and enhances learners' self-efficacy via safe practice environments, resulting in autonomy and a desire to communicate (Raman et al., 2023; Yu & Duan, 2024). However, the impact of VR will depend on the appropriateness of VR design, such as interactivity, realism, etc., and ill-designed VR applications may decrease engagement and learning outcomes (Harris & Sun, 2022; Sun et al., 2020). Solving technical issues and providing accessibility are important to unlock the full potential of VR as well (Taguchi & Hanks, 2024; Yang et al., 2020). Based on these insights, the following proposition is developed:

Proposition 1: The Use Of Virtual Reality In English Language Learning Positively Affects Learner Outcomes.

Virtual Reality (VR) in English Language Learning Affects Immersive Engagement

In the case of English language learning, Virtual Reality (VR) has an instrumental role in promoting immersive participation from students by offering interactive, realistic, and contextually rich environments and experiencing the full range of learners' behavioral, affective, and cognitive dimensions. Research certificates that the realistic nature of VR replicating life scenarios supports presence, which substantially enhances learner motivation, enjoyment, and emotional engagement with learning (Lee et al., 2024; Nicolaidou et al., 2023). Especially in the case of high-immersion VR environments, they offer controlled experiences allowing learners to safely practice language skills without fear of judgment, hence reducing anxiety and building confidence (Raman et al., 2023; Yu & Duan, 2024). In addition, the interactivity and realism of VR applications leads more cognitive engagement because they allow learners to perform tasks with cognitive skills such as critical thinking and problem-solving (Sun et al., 2020; Harris & Sun, 2022). In spite of this, the degree to which VR applications are immersive, interactive, realistic, and usable is highly contingent on their design, and poorly designed systems may disengage users or frustrate them (Luan et al., 2024; Taguchi & Hanks, 2024). Focusing on these design considerations is key for harnessing the

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power of VR for impactful and engaging educational experiences. Based on these insights, the following proposition is developed:

Proposition 2: The Use Of Virtual Reality In English Language Learning Positively Influences Immersive Engagement.

Immersive Engagement Affects Learner Outcomes

Immersive engagement mediates the relationship between VR and learner outcomes in English language learning because it directly triggers the behavior, affect, and cognition involved in meaningful language learning. Research confirms that immersion leads to a deeper engagement in learning experiences, resulting in a better grasp of a language, enhanced motivation, and higher retention rates (Lee et al., 2024; Nicolaidou et al., 2023). For example, learners with high behavioral engagement level (the involvement in interactive VR tasks) enhance their vocabulary and communicative competence (Luan et al., 2024; Piayura et al., 2024). Likewise, affective engagement, marked by higher levels of enjoyment and lower levels of anxiety, promotes the willingness to communicate among learners and their confidence in using the language in general (Raman et al., 2023; Yu & Duan, 2024). On the other hand, cognitive engagement guarantees the mental investment of learners in the processing of linguistic content, a factor that plays a key role in the process of long-term retention and application of language skills (Sun et al., 2020; Harris & Sun, 2022) Nonetheless, the efficacy of VR experiences is determined by the quality of the immersive experience, where the lack of design considerations can hurt the user engagement and lead to adverse outcomes (Taguchi & Hanks, 2024). Based on these insights, the following proposition is developed:

Proposition 3: Immersive Engagement Positively Affects Learner Outcomes In English Language Learning.

The Relationship Between Virtual Reality (VR) in English Language Learning and Learner Outcomes by Immersive Engagement

Demonstrating the relationship between VR and learner outcomes required an explanation of the mediating role of immersive engagement, in that the bridging of VR affordances with improved learning decision through the benefits of immersion in VR. VR establishes surround environments that trigger behavioral, affective, and cognitive engagement, which not only stimulates deeper language content engagement but also encourages meaningful experiences in the language learning process (Lee et al., 2024; Nicolaidou et al., 2023). For example, the naturalness and immersion of VR applications allow learners to practice language skills in authentic situations, facilitating language use and vocabulary acquisition, and enhancing both motivation and reducing anxiety (Luan et al., 2024; Piayura et al., 2024). Moreover, it has been found that immersive experiences enhance learners' willingness to communicate and confidence in using the target language, which are key factors in promoting positive learner outcomes (Raman et al., 2023; Yu & Duan, 2024). However, the nature of this relationship is contingent on the quality of VR design in terms of interactivity, realism, and usability, as poorly designed systems may be unable to maintain engagement and negatively impact learning outcomes (Sun et al., 2020; Harris & Sun, 2022). Tackling these design factors is paramount as they can significantly facilitate and enhance the mediating process of immersive engagement in VR-supported language learning. Based on these insights, the following proposition is developed:

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Proposition 4: The Relationship Between Virtual Reality In English Language Learning And Learner Outcomes Is Mediated By Immersive Engagement.

Thus, the theoretical propositions presented in this paper offer crystal clear theoretical avenues and inform future empirical research and practices. Through exploring the relationship between VR technology, immersive engagement and learner outcomes, these propositions lay the groundwork for further inquiry aimed at harnessing the educational power of VR within language learning environments.

Conclusion

This conceptual paper posits immersive engagement as a theoretical bridge connecting Virtual Reality (VR) technology and learner outcomes in the milieu of English language learning. Drawing on theoretical underpinnings from Experiential Learning Theory and Multimedia Learning Theory, this manuscript aims to develop an integrated conceptual framework that can provide insights into how VR can replace traditional language learning contexts with immersive, interactive, and meaningful experiences. The 3 central propositions demonstrate the theoretical trajectories through which VR promotes learner engagement in behavioral, affective, and cognitive dimensions, as well as contribute to better language proficiency, motivation, and lower levels of learner anxiety.

By examining the mechanisms which explain the role of VR, this study significantly advances theoretical understanding of how VR works, addressing an important gap in the extant literature. On a practical level, the proposed framework serves as an entry point to help promote application and inform the intentional design of VR tools by educators, developers, and policy makers. Nevertheless, because of the theoretical nature of this study, further empirical investigation is needed to confirm and detail the suggested framework. Future research could empirically address effects in long-term scenarios, scalability and cost effectiveness, and study more diverse populations of learners, thereby adding to theoretical insights and demonstrating the true transformative nature of VR in language education.

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