DEMYSTIFYING THE DIGITAL REALM

APPLYING THE RESEARCH BEHIND LANGUAGE LEARNING AND TASK-BASED LEARNING TO VIRTUAL REALITY

immerse

INTRODUCTION

Virtual reality is a powerful medium for creating meaningful and engaging learning experiences, allowing educators and their learners to engage in deeply immersive, real-time synchronous learning.

A useful VR platform engages learners, supports the best practices in language learning, and delivers measurable impact on learning. By exploring current applications of VR learning and training, language acquisition theory, and language teaching practices, we can apply the research to a world-class virtual reality language learning solution that solves problems for educators simply, efficiently, and without the need to learn to code.

In this paper, we share what we know about VR, what we have learned from the research, and how we have merged research and practice to create a tool that instructors and learners can use with confidence to deliver meaningful language-learning experiences.

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The Evolution of Virtual Reality, From Gaming to Training to Language Learning

Virtual reality (VR) describes the practice of using a device—usually a headset like the Oculus Quest 2, HTC Vive, or Sony PSVR—to experience a 3D digital world where users can engage with real or artificial interlocutors (Dickey, 2005; Carter & Click, 2013; Hew & Cheung, 2010). VR invites users to enter a new world as a digital persona (avatar), ready to interact with other people, characters, and objects.

Many may dismiss VR as simply a gaming platform; however, the technology is already being widely used across a number of industries as a way to train, develop experience, and enhance soft skills. In a 2020 study, PWC reported that VR was used to develop leadership skills in new managers. Their findings indicated that VR learning reduced the overall time to train new skills, improved learner confidence in diversity and inclusion management by 40 percent, and had a positive impact on future action.

Other industries are using VR too. In healthcare, lack of understanding may have deadly consequences for patients. A university study reported using VR training to raise patient awareness about the consequences of drug interactions to prevent strokes (Balsam et al., 2019). Before VR training, only 22

percent of the participants understood the consequences of drug interactions, while 83 percent understood the dangers after their VR experiences. As access increases, VR training and VR experience will be valuable skills in the future workforce (Dalto, 2018).

"After VR training on possible drug interactions, 83% of patients understood their risk, compared to 23% of patients trained using traditional methods."

VR differs from other types of technology in how it creates a feeling of presence in the virtual world, interactivity with the environment, and immersion in the space (Batista et al., 2020; Krokos et al., 2018; Melchor-Couto, 2019; Mütterlein, 2018). Presence is "the subjective experience of being in one place or environment, even when one is physically situated in another" (Witmer & Singer, 1998). VR engages the user by responding in real-time to user movements, further building on the feelings of presence. This, coupled with the situational focus of immersion (as the headset blocks out interference and distractions from the real-world) allows the user to become fully situated in the new reality.

These particular features—presence, direct interaction, and immersion--make VR a critically important EdTech tool for language educators. VR allows language educators to transfer best practices from the language learning classroom into the digital space in ways that are impossible to recreate with other technology. Unlike other EdTech platforms, VR is perfectly suited for delivering language experiences that use field-tested best practices to build long term proficiency.

What Drives Effective Language Learning?

Effective language teaching provides numerous opportunities for learners to work together, share knowledge, and communicate with others. In general, this focus on interaction and communication are key aspects of communicative language teaching. Creating meaningful communicative language experience requires providing opportunities that are structured to incorporate collaborative interaction where language can be naturally used to share ideas, solve problems, and complete tasks (Ellis, 2003; Larsson, 2001; Tricomi, 1986; Scarcella et al., 1992). The most effective task activities—problems to be solved—engage learners to use speaking, listening, reading, or writing (the communicative language skills) at an appropriate level of difficulty, where learners can complete activities using English with scaffolding from instructors

where necessary (Benigno et al., 2017; Scarcella et al., 1992). In language learning, various scales and frameworks, such as the internationally recognized Common European Framework of Reference (CEFR) inform our understanding of the challenge of skills taught. Skilled language educators use a combination of experience supported by scales and frameworks to create meaningful learning tasks that effectively challenge learners while simultaneously promoting language use.

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Creating Meaningful Learning Experiences

Task-based experiences are most meaningful when selected and developed by instructors who have deep knowledge of learners, their interests, and their needs (Thornbury, 1997). Well-structured tasks and problem-based experiences also engage higher order thinking skills, including the application and synthesis of language to communicate new innovations and solutions (Ellis, 2003; Harmer, 2001; Willis & Willis, 2007). Well-constructed tasks also incorporate topics of interest and direct relevance to learners' own lives, which improves motivation and increases learner engagement— both critical for long term success (Dörnyei, 2005, 2014). Finally, task-based learning experiences promote success for learners by providing an opportunity for learners to immerse fully in the new language, wherever the classroom is located (Fortune, 2012; Kubanyiova, 2017; Swain & Lapkin, 2013). To summarize, effective language learning includes:

- Focused real-world interaction
- Level-appropriate challenges
- Topics of interest relevant to learners
- Opportunities to use higher order thinking skills
- Conversations that allow personal sharing and exploration
- Tasks and problems that require interaction
- Opportunities to immerse completely in a new language

"Task-based learning experiences promote success for learners by providing an opportunity for learners to immerse fully in the new language, wherever the classroom is located."

Applying the Research Behind Language Learning to the Digital World

Online language learning supported through web-based applications, video conferencing, and learning management systems can produce language learning experiences that build on acquired skills and develop new language abilities. This is especially true when educators can utilize various aspects of task-and problem-based learning to offer a variety of hybrid and blended experiences that develop language (Marcum & Kim, 2020).

It is specifically the ability to deliver engaging and focused task- and problem-based learning that makes VR an effective tool for language educators. With VR, instructors can recreate the synchronous learning experience of creating a task, observing learner performance, and providing point of need support seamlessly inside a digital environment. Further, early indications from the research provide insight

into the efficacy of VR to increase motivation, engage learners, and improve language proficiency. In one study, learners enjoyed VR learning because the experience provided optimum focus, engaged emotion and imagination, and removed distractions from the learning experience (Kaplan-Rakowski & Wojdyński, 2018).

Observing Language Learning Outcomes in Virtual Reality

VR platforms and worlds have existed for decades, and a number of pioneering language educators are beginning to probe the potential of language instruction in virtual worlds. Currently, the adoption of VR for language learning is an evolving field; however, the pioneers of VR research provide promising indications about the use of VR and its positive impact on engagement, motivation, and language proficiency. Several studies on VR-enhanced language learning experiences provide insight into the current state of the landscape for both learners and educators.

How Learners Feel About Virtual Reality Language Learning

From the learner perspective, learners describe presence as highly satisfying. Being immersed in VR encourages language use, even though learners may not be aware of how much language they are speaking (Kassim et al., 2019). VR is also an effective tool for supporting the development of new vocabulary. Initial research into the efficacy of VR instruction on language acquisition shows that learners "improved their phonological, morphological, grammar, and syntax knowledge, and virtual world learning assisted in the development of a more complex and higher level of thinking" (Chen, 2016). In a recently published study, learners were presented with new language as part of a virtual field trip experience. Learners described that learning vocabulary in the virtual world was more fun, and they felt more comfortable using the language, which led to a significant difference in learner achievement compared to the control group using traditional vocabulary exercises (Alfadil, 2020).

There are also other indications that VR vocabulary practice improves learner accuracy during assessment, and has a significant impact on improving vocabulary knowledge for learners who underperformed using traditional vocabulary learning methods (Legualt et al., 2019).

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Of course, VR learning is only just beginning to take its place in the EdTech toolbox and there is still much to learn, specifically when it comes to leading instruction, designing tasks, and facilitating VR experiences. Experts agree that VR instruction and strategies need to be meaningfully designed for the immersive spaces (Cook et al., 2019). Further, a comprehensive analysis of VR in language education identified task-based learning as an area of greatest interest to educators implementing and researching VR experiences (Lin & Lan, 2015). This leaves a great deal of room for new innovations around effective VR instruction.

Building on the Research—An Immerse Perspective

Language learning and language development are all about communication and VR language learning experiences bring person-to-person interaction to the digital learning space. Informed by the research, we have crafted a robust platform to allow any language teacher (regardless of their technical skills) to facilitate fun and engaging VR experiences that will help learners continue to improve their language proficiency and allow engagement, wherever they are. Understanding the needs of instructors, we worked to develop facilitation tools and training resources, to make launching into VR teaching as intuitive as possible.

Further, we have created a custom library of fully structured VR learning experiences that are aligned to the CEFR for easy off-the-shelf implementation. Each objective aligned lesson provides a fully developed task or problem-based learning experience where learners can use language to share ideas, learn new information, and solve problems.

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with VR. Our teacher training modules demonstrate how to lead the pre-built experiences that allow facilitators to become familiar with instructional methods and begin to develop a personal VR teaching style. As instructors become familiar with the experience and transfer classroom practice into the VR classroom, we will be ready to support the creative new learning experiences and fully realize the potential of customizable, task-based learning that is the most relevant to your learners.

Of course, a VR learning experience must be easy and intuitive for both educators and learners. Currently, the learners we have engaged have found the overall experience to be positive. We provided the Oculus Go VR headset to 60 Japanese professionals who were interested in VR language learning to understand initial reactions to the learner experience.

"84% of learners reported that practicing in the Immerse VR platform improved their confidence in English."

All participants had opportunities to join virtual synchronous classes, led by experienced language educators. Following the experiences, we conducted a survey to understand learners' impressions of the experience and how our VR learning platform can positively impact language development. Participants indicated that VR improved their confidence in speaking with others (84 percent), while 64 percent indicated that VR practice improved their

overall confidence with English.Finally, 64 percent of participants indicated they preferred using VR to learn English over a laptop or PC and 9 out of 10 of our participants (89 percent) indicated they were satisfied learning English in VR.

Currently we are undergoing further implementation and research with language institutions in Japan, South Korea, Italy, Spain, and Brazil. We are excited to continue to work with additional learners and language institutions around the world to study the impact of VR language learning on confidence, motivation, language skill development, and overall proficiency development at scale.

Conclusion

The future of learning is digital, and we at Immerse are excited to be a part of the digital revolution. As technology has continued to rapidly evolve, we believe the modern instructor needs all the resources and tools to support learning and provide meaningful learner experiences. In language education, one critical tool missing from the EdTech toolbox is a robust platform for language facilitation that fully engages person-to-person interaction and promotes fluency. That missing tool is Virtual Reality.

VR devices are becoming increasingly smaller and more affordable, signaling a fast-emerging need for well-designed, research-informed VR instruction platforms that are intuitive to use, support appropriate learning experiences, and provide measurable results.

Thanks to the pioneering language educators researching at the edge of technology adoption, we have created a robust, virtual language learning experience platform that is easy to use, built for task-based learning, and designed to delight and engage learners.

Immerse has built a platform responding to the research informed needs of high-quality language instruction, and we are ready to engage with language educators across the globe to grow our research, improve our learning experiences, and provide greater opportunities for customizing and fine-tuning VR instruction to support the needs of all language students. We believe that VR is not the future of language education, but the current reality available to all educators who are ready to Immerse in conversation.
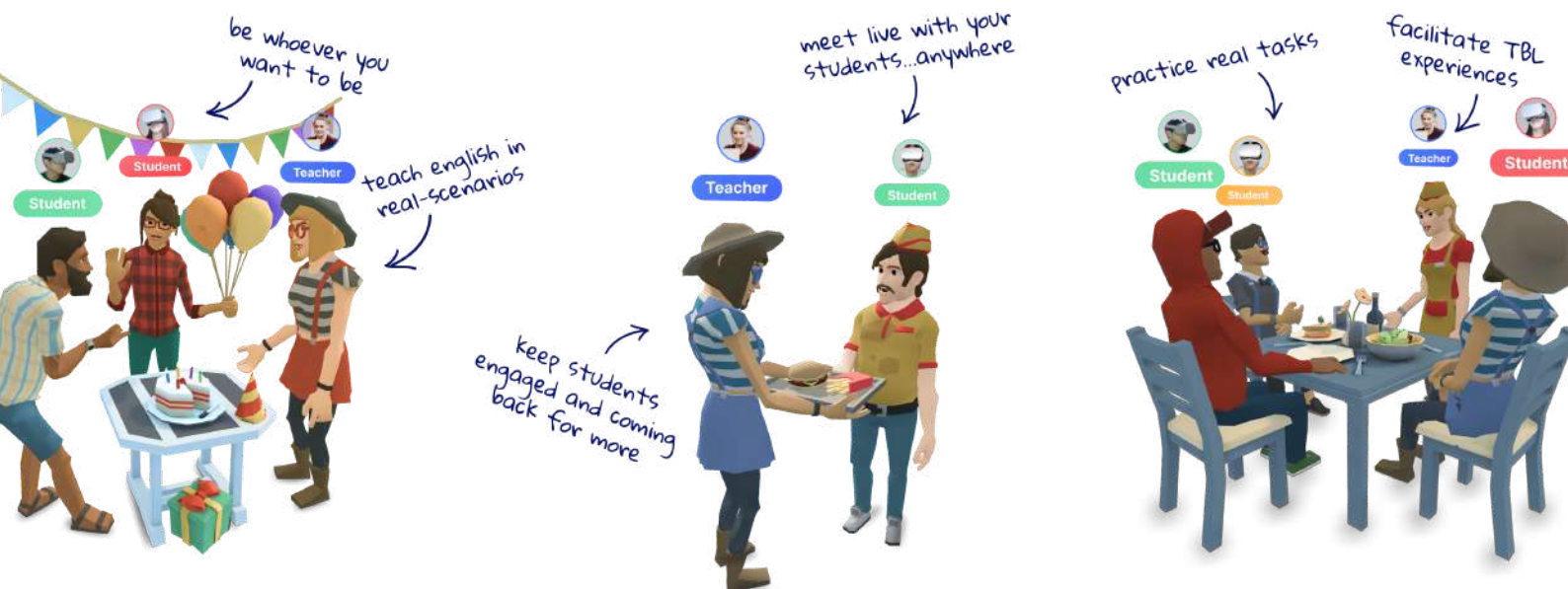
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About Immerse

Immerse is a passionate team of VR engineers, interdisciplinary designers, and language education specialists dedicated to helping bring language institutions into the 21st century. Our mission is to transform the way English is taught and learned using virtual reality. Learn more at www.immerse.online.