Beyond the Headset: Rethinking Foreign Language Learning through VR and AI. A Look Back at the VR- and AI-assisted Language Learning Symposium

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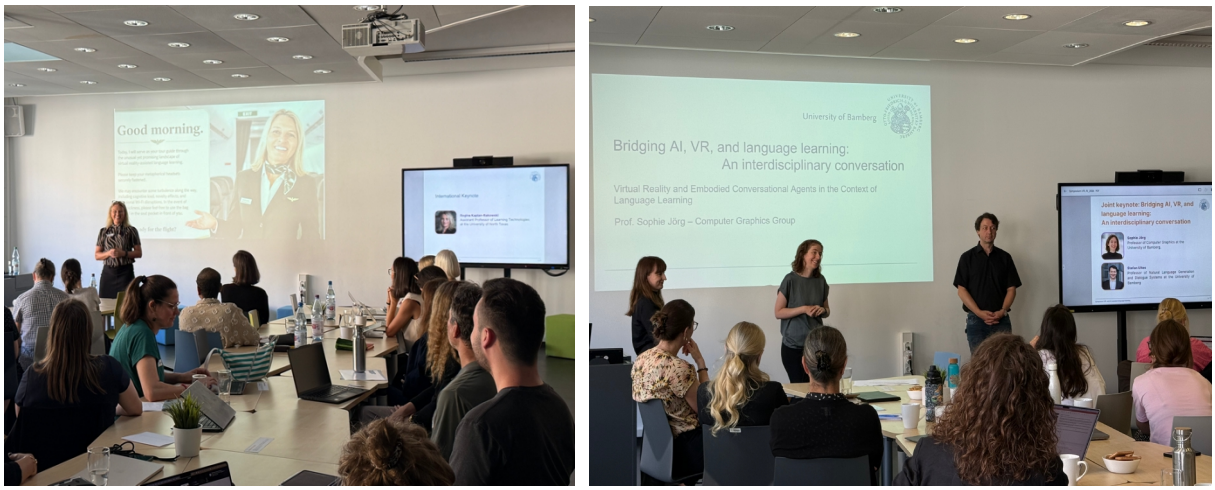
On July 2 and 3 2026, researchers and students gathered at the University of Bamberg for the international symposium "VR- and AI-Assisted Language Learning". Organized jointly by the Chair of English Language Education at the University of Bamberg and the Department of Romance Languages and Literatures at Leibniz University Hannover, in cooperation with the BaTEGS project at the University of Bamberg, the symposium brought together perspectives from language education, applied linguistics, teacher education, computer graphics, and dialogue systems. Rather than presenting virtual reality and artificial intelligence as self-evident innovations, the event asked a more demanding question: Under what pedagogical, technological, and ethical conditions can these technologies contribute meaningfully to language learning?

The program was deliberately designed to encourage exchange across disciplinary and institutional boundaries. Alongside two keynote sessions, four thematic "moonshot" sessions offered researchers five minutes each to present empirical findings, conceptual frameworks, prototypes, and emerging research ideas. A student workshop and a concluding World Café shifted the emphasis from presentation to collaborative exploration. This mixture of input and extended discussion proved particularly productive, as recurring questions could be revisited from different theoretical and practical perspectives.



Keynote by Regina Kaplan-Rakowski; Joint keynote by Sophie Jörg and Stefan Ultes

The symposium opened with a keynote by Regina Kaplan-Rakowski, assistant professor of learning technologies of the University of North Texas, who provided both an overview of research on virtual reality in language education and a forward-looking account of developments at the intersection of VR and AI. Her presentation took the audience on what might be described as a rapid flight through the current VR research landscape: from the geographical distribution of research to frequently investigated areas such as vocabulary learning, speaking, cultural learning, and foreign language anxiety. Drawing on applications including Art Plunge, Marie Curie's Lab, Nature Treks VR, and Guided Meditation VR, she illustrated the diversity of immersive environments already available for educational use.
At the same time, Regina Kaplan-Rakowski cautioned against equating technological novelty with pedagogical value. Referring to the Cognitive Affective Model of Immersive Learning (Makransky & Petersen, 2021) and its further development, she emphasized that learning in VR is shaped not only by immersion and presence, but also by cognitive load, affective responses, agency, and the design of the learning task. Her outlook on brain-activity-sensitive headsets, haptic gloves, bodysuits, and augmented-reality glasses made clear that increasingly embodied and adaptive environments are approaching rapidly. Yet her observation that research is moving towards the point "where VR meets AI" while still knowing remarkably little about the consequences set the tone for the entire symposium: enthusiasm was consistently accompanied by epistemic caution.

Regina Kaplan-Rakowski: "We are going to where VR meets AI... and I think we still do not know enough."

Across four thematic moonshot sessions, the symposium presented a concentrated panorama of current research and development at the intersection of VR, AI, and language education.

The first session, "Transformative Learning in VR: Language, Communication, and Creativity", focused on immersive environments as spaces for reducing speaking anxiety, supporting professionally relevant communication, fostering AI literacy in teacher education, and stimulating creative writing. Contributions ranged from GenAI-supported public-speaking practice and the Empath.AI communication training for nursing to AI-assisted materials development and an experimental VR escape-room study that examined the role of sound in creative processes. The ensuing discussion highlighted a recurring tension between commercially available applications and pedagogically designed, institutionally hosted, or openly licensed environments. Participants repeatedly returned to the principle of "pedagogy before technology", while acknowledging that current software ecosystems often reverse this relationship by allowing existing tools to dictate possible classroom practices.

The second session, "Culture and Global Citizenship in the Age of Intelligent Virtual Worlds", broadened the focus from linguistic competence to intercultural learning, sustainability, cultural heritage, and ethical reflection. Presentations explored VR- and AI-supported international collaboration in primary education, adaptive environments for Global Citizenship Education,

ethical negotiation with AI agents, the co-construction of cultural heritage narratives, and high-immersion VR for Education for Sustainable Development. Together, these contributions showed that immersive technologies should not merely simulate access to distant places or cultures, but can support the negotiation of perspectives, values, identities, and contested cultural narratives.

The third session, "Rethinking Didactic Frameworks for AI and VR", addressed the conceptual and professional foundations required for meaningful implementation. Speakers introduced the notion of "walking through literature" as an embodied mode of literary reception, discussed frameworks for VR-supported oracy development, proposed a multidimensional model of teachers' AI competence, and presented empirical findings from adult education and task-based VR instruction. A central insight was that the pedagogical value of immersive technologies depends less on immersion itself than on task design, curricular integration, teacher instruction, and careful preparation and follow-up.

The fourth session, "Transforming Speaking Practice with AI and VR", concentrated on AI-supported conversational practice. Studies comparing AI-driven VR interviews with human role-play, the SpeakSpace VR prototype for Spanish, and task-based speaking scenarios for English illustrated how immersive environments may provide additional, situated, and comparatively low-pressure opportunities for oral interaction. At the same time, the presentations made clear that such systems cannot be evaluated solely in terms of learner motivation or technological feasibility. Questions of interactional quality, adaptive scaffolding, data protection, responsible AI use, and the relationship between simulated and human communication remain central.

Moohshot sessions

Taken together, the moonshot sessions demonstrated a noticeable maturation of the field: research is moving beyond the question of whether VR and AI can be used in language education towards the more demanding issue of how they can be embedded in theoretically grounded, ethically responsible, and empirically validated learning arrangements.

The following joint keynote by Sophie Jörg and Stefan Ultes made the symposium's interdisciplinary orientation especially tangible. Stefan Ultes, professor of Natural Language Generation and Dialogue Systems at the University of Bamberg, introduced the basic functioning and limitations of large language models and dialogue systems, while Sophie Jörg, professor for Computer Graphics at the University of Bamberg, differentiated between avatars, agents, and other forms of virtual representation. Her discussion of hand movements and non-verbal behavior demonstrated that seemingly minor animation features can substantially influence how virtual interlocutors are perceived. The conversation showed how much language education can gain from closer collaboration with computer science, but also how easily disciplinary assumptions diverge. A technically convincing conversational agent is not automatically a pedagogically productive partner, just as a didactically desirable learning scenario may be difficult to implement reliably.

Workshop by teacher training students

The subsequent student workshop provided an important shift in perspective. Students from a learner-led seminar, part of the project BaKuLe at the University of Bamberg, presented teaching concepts developed around VR and AI, thereby demonstrating how emerging technologies can be integrated into university-based teacher education not only as objects of analysis but also as tools for design. Their contributions underscored that future teachers need opportunities to experiment, evaluate, and revise technology-supported learning scenarios within a structured and critically reflective environment.

Student: "I told the AI not to correct grammar, but it still keeps correcting. What can I do?" – Stefan Ultes: "The LLM does not understand what 'correct' means."

The symposium concluded with a World Café entitled "Reaching for the Stars". Participants discussed questions concerning teacher empowerment, funding, environmental costs, the relationship between VR and AI, and possible future interfaces such as haptic gloves, bodysuits, and augmented-reality glasses. The format made visible both the optimism and the reservations that had shaped the preceding sessions. AI-supported VR may increase speaking time, allow learners to rehearse challenging situations, provide access to otherwise unavailable environments, and create new forms of embodied, adaptive, and culturally situated learning. Yet these possibilities remain

dependent on reliable infrastructure, careful task design, teacher education, accessibility, data protection, sustainable funding, and critical examination of commercial interests.

The most important outcome of the symposium was therefore not a simple endorsement of VR and AI. Instead, it was a shared recognition that the field is moving from proof-of-concept studies towards more demanding questions of learning quality, curricular integration, professional competence, and educational responsibility. The event demonstrated that the future of VR- and AI-assisted language learning will not primarily be determined by technological capability. It will depend on whether researchers, teachers, learners, and developers succeed in designing environments in which technological innovation remains accountable to pedagogical aims.

Lively discussions about the future of VR- and AI-assisted language learning

The symposium's combination of concise research impulses, interdisciplinary keynotes, student participation, and collaborative discussion created a productive space for exactly this kind of negotiation. It suggested that the most promising developments may emerge not from asking what VR and AI can do, but from asking what kinds of language learning, participation, reflection, and human interaction they should support.

The strong interest in a future edition of the symposium, as well as in additional formats for sustained collaboration, showed that the event was not perceived as a conclusion, but as the beginning of a broader conversation and a growing international research community.

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Jennifer Wengler, on behalf of the entire conference team