

AI and Immersive Technologies in Language Education

Wei Lun Wong*

Universiti Kebangsaan Malaysia, Malaysia

Gavin Junjie Wu

Macao Polytechnic University, Macau SAR, China

Artificial intelligence (AI) and immersive technologies are expanding opportunities for language learners to obtain feedback, revise writing, and rehearse communication. Their educational value depends on how these opportunities support learning and informed participation. Wu et al. (2025) locate recent technological developments within broader concerns about learner affect, teacher development, and immersive learning. This wider perspective is useful for understanding the nine articles in this special issue. Together, they examine how technological assistance interacts with critical thinking, authorship, communicative practice, and teacher agency. We bring these contributions into dialogue to consider the pedagogical conditions under which innovation supports learners' developing capabilities.

This special issue first examines how learners exercise cognitive control when working with AI. Vo and Barrot (2026) first examine ChatGPT's editing of essays across proficiency levels. Their analysis shows improvements in six of seven language-quality indicators and reduced disparities among groups of texts. These findings identify a potentially valuable form of linguistic assistance for writers with different language resources. However, for pedagogy and assessment, the interpretation must remain tied to what was examined. Improvements in edited essays do not, establish improvement in writers' independent competence. The study opens a discussion about how editing can be incorporated into activities that require writers to understand revisions and apply relevant knowledge in subsequent tasks.

Altalib (2026) develops this discussion by examining perceived voice and psychological ownership among Saudi EFL undergraduates. The findings show that recognising one's voice in a text and feeling that the text belongs to oneself are related but distinct experiences. Participants associated ownership with the extent to which they transformed and accepted responsibility for AI contributions. Teng's (2025a) study of writing feedback similarly identifies differences in learners' engagement, ranging from copying AI output to using feedback more deliberately. These studies suggest that writing development should be examined through learners' decisions as well as the resulting texts. Pedagogical activities can support this relationship by asking learners to explain significant revisions and identify the assistance they used.

Learners' purposes and emotional experiences further shape their engagement. Rong and Saeed (2026) identify distinct orientations towards AI-mediated informal English-speaking practice among multilingual undergraduates in Malaysia. Performance priorities, emotional motivation, and efficiency-related anxiety and dependence featured differently across these orientations. Complementary work by Ren et al. (2026) identifies associations involving AI feedback modalities, engagement, writing anxiety, and writing performance in Malaysian higher education. Although the studies concern different language activities, both direct attention to variation within learner populations. Their findings encourage guidance

*Corresponding author. Email: colinw@ukm.edu.my

that responds to learners' goals and emotional experiences. For educators, this means considering how individual learners experience assistance when judging its educational benefit.

The two contributions on immersive environments extend this discussion to the organisation of communicative practice. Sukavatee and Khlaisang (2026) report improved oral communication scores following task-based activities in a gamified metaverse. Learners also described greater confidence and collaboration, alongside difficulties with connectivity, platform stability, and screen fatigue. Fincham and Park (2026) examine public-speaking practice in immersive virtual reality, where application-generated feedback and performance analytics were combined with instructor facilitation. Their study highlights learners' engagement with feedback from multiple sources. Across these contributions, the learning opportunity emerges through the relationship between the environment, the task, and the guidance available to participants. For teachers, this means planning how learners will interpret feedback and use repeated practice to adjust their performance.

Deliberate design is also central to Barrot's (2026) CLARIFIES+ framework. The framework treats prompting as a way of specifying instructional requirements, including learner characteristics, task purposes, constraints, and expected outputs. Its adaptive layer accommodates clarification, process controls, and safeguards. This approach connects AI literacy with teachers' responsibility to judge whether generated material serves a particular educational purpose. As a conceptual and practical proposal, CLARIFIES+ offers a structure for classroom investigation. Its contribution to the issue is to make pedagogical expectations explicit and open to evaluation, while retaining teachers' responsibility for interpreting the quality and appropriateness of AI responses.

Wang et al. (2026) identify indirect associations between AI literacy and critical thinking through AI-assisted problem-solving ability and AI reliance. Their mixed-methods findings invite attention to learners' ways of using AI, alongside their knowledge of the technology. Cong-Lem et al. (2026) approach this concern through a short experiential learning intervention. Their quasi-experimental study reports immediate improvements in critical thinking following explicit instruction in critical AI engagement. These outcomes warrant further investigation of retention and transfer. The two contributions establish a connection between understanding AI and learning to evaluate its assistance during language-related tasks.

These contributions position AI literacy as a capacity expressed through decisions during learning. Teng (2025b) extends this perspective by documenting variation in how writers of English as a foreign language (EFL) plan, monitor, and evaluate their use of ChatGPT. Such variation suggests that access to the same tool can support different forms of engagement. For teaching, an important implication is to make evaluation explicit. Learners can compare AI suggestions with task criteria, justify their choices, and reflect on what they have learned. These processes are particularly consequential in writing, where polished output may obscure learners' contributions.

Related work by Wong and Fong (2025) provides a useful example of designing AI assistance around local language resources. Their primary-school writing intervention used a learner corpus to ground examples and feedback in pupils' own educational context. Classroom observations and teacher reflections suggested greater willingness to revise, while formulaic borrowing and differences in digital literacy remained concerns. This study complements the issue's emphasis on agency by showing why the evidence supplied to an AI system matters pedagogically. Local texts can provide relevant material for noticing and revision, but teachers still need to guide learners in interpreting examples and making independent writing decisions.

Teachers' capacity to provide such guidance depends partly on their working conditions. Wu and Miller (2025) examine the contrasting experiences of two teachers and show how institutional support, peer collaboration, and personal beliefs shaped their engagement with AI. Their analysis places teacher agency within the professional settings in which technological decisions are made. This contribution strengthens the issue's argument that informed participation requires opportunities to learn and

exercise judgement. Professional development should include sustained discussion of classroom cases, collaborative evaluation of tools, and opportunities to adapt practices. Institutional guidance and time for professional learning are necessary considerations when teachers are expected to make these decisions responsibly.

Viewed together, the nine articles suggest that agency is enacted through relationships among people, technologies, and educational arrangements. Learners exercise agency when they evaluate assistance, explain choices, and take responsibility for their work. Teachers support these processes through task design and feedback, while institutional arrangements influence what teachers can reasonably provide. This perspective connects the issue's diverse contributions without assuming that writing tools, conversational AI, and immersive environments operate in identical ways. It also gives pedagogical innovation a clear evaluative focus: whether technological assistance expands learners' opportunities to participate and develop capabilities.

The practical implications concern both teaching and assessment. Learning activities should make learners' decisions visible through brief explanations of revisions, evaluations of feedback, or subsequent performances. Assessment can consider this process evidence alongside the quality of the final product. Further research should examine retention and transfer over time, compare pedagogical arrangements, and investigate unequal access to benefits. In immersive learning, comparative designs can help distinguish the contributions of task structure, instructor support, and the technological environment. We invite readers to engage with the nine articles as resources for developing language education in which pedagogical judgement directs technological possibilities and learners retain meaningful responsibility for their learning.

References

- Altalib, A. (2026). Voice and ownership in AI-assisted L2 writing. *International Journal of TESOL Studies*, 8(4), 27-53. <https://doi.org/10.58304/ijts.260702>
- Barrot, J. (2026). The CLARIFIES+ framework: A contextualized prompting approach for generative artificial intelligence. *International Journal of TESOL Studies*, 8(4), 122-143. <https://doi.org/10.58304/ijts.260215>
- Cong-Lem, N., Nguyen, T. T., & Nguyen, K. N. H. (2026). Critical thinking in the age of generative AI: Effects of a short-term experiential learning intervention on EFL learners. *International Journal of TESOL Studies*, 8(4), 164-184. <https://doi.org/10.58304/ijts.250522>
- Fincham, N. X., & Park, L. (2026). Learner utilization of multimodal feedback during public speaking practice in immersive virtual reality. *International Journal of TESOL Studies*, 8(4), 98-121. <https://doi.org/10.58304/ijts.260214>
- Ren, Y., Wong, W. L., Barrot, J., & Zhang, L. J. (2026). Learning styles, engagement and anxiety in AI-mediated writing: A multimodal feedback study. *International Journal of Applied Linguistics. Advance online publication*. <https://doi.org/10.1111/ijal.70120>
- Rong, L., & Saeed, M. A. (2026). Exploring multilingual learners' AI-mediated informal digital English-speaking practice: A Q-methodology study. *International Journal of TESOL Studies*, 8(4), 54-74. <https://doi.org/10.58304/ijts.260602>
- Sukavatee, P., & Khlaisang, J. (2026). From tasks to talks: Enhancing EFL oral communication through gamified metaverse in higher education. *International Journal of TESOL Studies*, 8(4), 75-97. <https://doi.org/10.58304/ijts.260210>
- Teng, M. F. (2025a). Metacognitive awareness and EFL learners' perceptions and experiences in utilising ChatGPT for writing feedback. *European Journal of Education*, 60(1), Article e12811. <https://doi.org/10.1111/ejed.12811>

- Teng, M. F. (2025b). Understanding EFL student writers' metacognitive awareness in utilizing ChatGPT. *System*, 135, Article 103848. <https://doi.org/10.1016/j.system.2025.103848>
- Vo, T. D., & Barrot, J. S. (2026). Differential effects of generative AI editing on the language quality of essays across proficiency levels. *International Journal of TESOL Studies*, 8(4), 5-26. <https://doi.org/10.58304/ijts.260802>
- Wang, Y., Dong, H., & Yang, L. (2026). Beyond AI use: How AI literacy is linked to critical thinking through AI-assisted problem-solving ability and AI reliance. *International Journal of TESOL Studies*, 8(4), 144-163. <https://doi.org/10.58304/ijts.260930>
- Wong, W. L., & Fong, S. (2025). A new era with artificial intelligence powered learner corpora for teaching and learning of English as a second language in primary school education. *Applied Language Sciences*, 1, Article 250105. <https://doi.org/10.65553/ALS.250105>
- Wu, J. G., Lee, S.-M., Zou, D., & Xian, J. (2025). A decade of innovation in language education: Insights from eight leading CALL-related journals. *Applied Language Sciences*, 1, Article 250102. <https://doi.org/10.65553/ALS.250102>
- Wu, J. G., & Miller, L. (2025). Smart or sweat: The bittersweet journey of teachers' AI literacy. *International Journal of TESOL Studies*, 8(4), 185-194. <https://doi.org/10.58304/ijts.250124>

Dr. Wei Lun Wong is a senior lecturer at the Faculty of Education, Universiti Kebangsaan Malaysia (UKM), specialising in TESOL, corpus linguistics, applied linguistics and artificial intelligence (AI) in language education. He serves as an Academic Editor of PLOS ONE and Associate Editor of Cogent Education (Language Education Section). He has also served on the Editorial Board of several international Scopus journals. His research has appeared in SSCI/SCI journals, including Scientific Reports, The Asia-Pacific Education Researcher, International Journal of Applied Linguistics, SAGE Open and Educational Review. His scholarly contributions focus on corpus-informed language pedagogy, AI-mediated language learning, academic writing and educational innovation. He also actively contributes to international scholarly publishing through editorial responsibilities and peer-review activities.

Dr. Junjie Gavin Wu received his first Ph.D. in Applied Linguistics from City University of Hong Kong and his second Ph.D. in Computer Science from the University of Warwick. He is a Tenured Assistant Professor and Ph.D. Supervisor at Macao Polytechnic University, as well as the Vice President of PacCALL. He is Editor-in-Chief of SN Social Sciences (Scopus), Editor-in-Chief of Applied Language Sciences, an Executive Associate Editor of Computers & Education: X Reality (ESCI), an Associate Editor of Immersive Technologies, and an Executive Associate Editor of Artificial Intelligence in Language Education (Castledown). He has authored over 100 English publications, with around 40 papers appearing in SSCI/SCI journals. He has published books with Cambridge University Press, Routledge, and Springer and spearheaded over 10 special issues.