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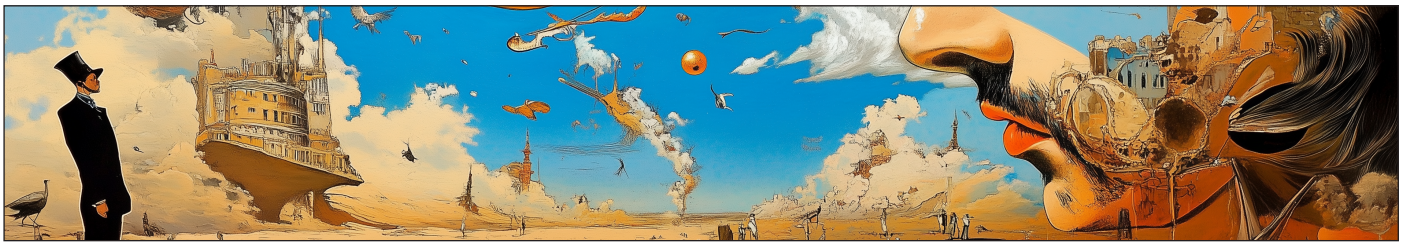

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From "effectiveness" to "access": Rethinking the logic of technology-enhanced language learning

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In recent years, technology-enhanced language learning (TELL) has been marked by growing attention to innovations such as virtual reality (VR) and generative artificial intelligence (GenAI). Numerous empirical studies, along with systematic reviews and meta-analyses, have reported "significant improvements", suggesting that these tools may hold potential for vocabulary learning, oral communication and learner motivation (e.g., Law, 2024; Lee et al., 2025). In the context of English language learning, these affordances are particularly relevant, as vocabulary development, communicative competence, and learner motivation are central goals in English for Academic Purposes and English as a Foreign Language classrooms. Accordingly, studies have called for further research with larger cohorts and over longer periods, perhaps implicitly indicating that such technologies could play an important role in education systems in the future.

Yet such research trajectories often rest on an implicit assumption that these technologies are accessible to learners. In other words, "effectiveness" is presented as a conclusion, while "accessibility" is frequently taken for granted.

In practice, access varies considerably across regions and educational contexts. If this issue is overlooked, then even promising experimental findings may lose much of their value in practice. One illustration could be found in the case of ChatGPT. Its launch triggered widespread academic discussion about its potential in language

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education. A substantial body of work has examined its use in essay feedback, oral interaction and strategy development, with some suggesting that it could enhance efficiency and personalisation in learning (e.g., Owoseni et al., 2024).

However, in certain regions e.g. China, ChatGPT is not available through legitimate and stable channels. Although domestic GenAI platforms such as Deepseek have emerged, they might differ from ChatGPT in functionality, scope and international reach. This raises an important question: can findings based on ChatGPT be assumed to apply equally to other GenAI tools? For many Chinese teachers and students, ChatGPT may not be a readily available resource, but rather an example of what might be called an "imagined effectiveness".

This situation points to a blind spot in TELL research: the accessibility of technology has not been sufficiently examined. The consequences could be at least twofold. First, findings may lack practical relevance, since teachers and learners are often unable to implement the suggested practices. Second, inequalities may be reproduced at the discursive level, with those able to access ChatGPT through overseas channels presented as "pioneers", while the majority are left to engage with a vision of the future that remains out of reach.

A further example could be seen in VR. Experimental studies suggest that VR can improve vocabulary retention, strengthen contextualised learning, and enhance learner motivation through immersive environments (see Lan, 2020). On the basis of these results, VR is often seen as a possible future direction for language education (Cowie & Alizadeh, 2025).

The realities, however, are more complex. Immersive VR devices are costly, their maintenance requires expertise, and they depend on stable infrastructure such as power and connectivity, alongside significant teacher training. In well-funded laboratories or elite schools, VR can indeed display distinctive advantages. But in the majority of educational contexts, the challenges of cost and infrastructure remain significant. In such cases, calls for "widespread adoption" risk translating into a new form of resource concentration, benefiting a minority of institutions while leaving others behind.

Together, the cases of ChatGPT and VR suggest that effectiveness does not automatically translate into educational value. Even when a technology yields positive results in experimental conditions, whether it has substantive impact for most learners depends on its accessibility and the fairness of its distribution. For classroom practitioners, this means that questions of access need to be considered alongside pedagogy. It may be that teachers need to adapt low-cost or locally available tools creatively to achieve similar outcomes.

Thus, it could be said that TELL research appears to contain a tendency to treat "effectiveness" as a sufficient justification, while seldom considering who is actually able to make use of the technology. This risks creating a gap between research and practice: if findings are based on tools that remain inaccessible to most, the majority of teachers and learners cannot truly benefit. Moreover, the potential inequalities of adoption are often overlooked. As the mainstreaming of VR or AI is not a neutral process, it could reshape teacher roles, divert resources from other educational priorities, and even contribute to new forms of digital divide.

For these reasons, TELL research may need to rethink its logic: shifting from the linear reasoning of "effectiveness-to-adoption" towards a more integrated consideration of "access-to-equity". Within such a framework, researchers would not only ask "is the technology effective?", but also "is it accessible?" and "does its use help to reduce, rather than widen, educational disparities?".

To sum up, educational technologies are not abstract or universally available tools; they are practices embedded within specific social, political and economic conditions (Hall, 2020). The limited accessibility surrounding ChatGPT in some countries e.g. China, and the difficulties of mainstreaming VR in schools, both indicate that if access is neglected, research and practice may face the paradox of being "effective but inaccessible". Future research that seeks to contribute to educational equity might need to incorporate accessibility into both design and evaluation. This might include exploring low-cost and lightweight alternatives that approximate the benefits of advanced systems in resource-limited contexts. It could also include supporting teacher training and policy measures to ensure that technologies are not confined to laboratories or a small number of privileged schools. Attention could also be paid to local platforms, rather than focusing solely on the most high-profile global tools.

The perspective presented here may be partial, and it may diverge from the prevailing optimism that characterises much of the educational technology literature. As history has often shown, what may appear to be a small step in educational technology can become a significant step in reshaping how humans learn. It is possible that the visions described

in current research will indeed be realised in the future. For now, however, what seems necessary is to begin with careful attention to accessibility and equity, and to take that as the first step towards a more inclusive educational future.

Returning to the central concern of this commentary, future TELL research could benefit from designing studies that explicitly compare high-end tools with more accessible alternatives, such as low-immersion virtual reality (e.g., Hoang et al., 2023) delivered on mobile devices. In doing so, research findings would become more relevant to a wider range of educational settings. By highlighting accessibility in this way, researchers and practitioners can help ensure that technological innovation in language education is not only effective in theory but also equitable and feasible in practice.

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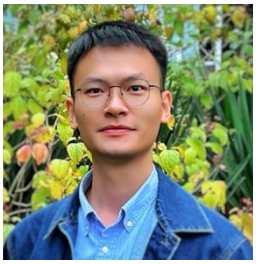

About the author

Ming Chen is a PhD student at the School of Education, University of Bristol. His doctoral research investigates the role of Virtual Reality Digital Content Creation (VRDCC) in enhancing English as a Foreign Language (EFL) learning and is supported by the China Scholarship Council–University of Bristol PhD Scholarship. His broader research interests centre on computer-assisted language learning. Readers are welcome to contact him for discussion or collaboration on related topics.

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