ASCILITE 2026

The Future is Connection:

Collaboration, Creativity and Compassion in a Digital Society

How effective is generative artificial intelligence (GenAI) on task-based language teaching (TBLT) for writing: A meta-analysis

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Generative artificial intelligence (GenAI) has influenced writing significantly, especially for second language (L2) learners; however, limited literature has systematically examined the effectiveness of GenAI on writing. Previous meta-analyses present inconsistent findings on the effectiveness of GenAI, and these meta-analyses lack exploration from an instructional and pedagogical perspective. The task-based language teaching (TBLT) approach has been widely applied in language education. This approach concerns task characteristics and learner factors. TBLT can be covered by a Triadic Componential Framework comprising three categories — task difficulty, task complexity, and task conditions — that correspond to learner factors, cognitive factors, and interactional factors in tasks, respectively. Therefore, this meta-analysis systematically analysed the effectiveness of GenAI on TBLT for writing and identified moderators of the effects. PRISMA was used to collect literature from three databases (i.e. Web of Science, Scopus, and ProQuest) published between 2022 and 2025, and 16 studies were finally included in this study. Our findings revealed that students learning with GenAI significantly outperformed those learning without (g = 0.76, p < 0.05). In addition, the meta-regression analysis identified three moderators (i.e. educational level, language proficiency, and task planning) and indicated the joint effects of different factors on writing performance in this GenAI context. We also suggest future directions for researchers and practical suggestions for teachers.

Keywords: generative artificial intelligence (GenAI), writing, task-based language teaching

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Li, Y., Bavli, B. & Chiu, T. K. F. (2026, Nov 29 – Dec 2). How effective is generative artificial intelligence (GenAI) on task-based language teaching (TBLT) for writing: A meta-analysis [Poster]. In Cochrane, T., Narayan, V., Poole, T., Lai, P., Lake, P., Moore, O., & Li, L. (Eds.), *The Future is Connection: Collaboration, Creativity and Compassion in a Digital Society*. Proceedings ASCILITE 2026. Brisbane (pp. 44–45). https://doi.org/10.65106/apubs.2026.3289

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