

Closing the Narrative Disconnect: Evaluating Generative AI as a ‘More Capable Peer’ in Iterative Continuation Writing

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Research Overview

This study investigates a “machine-in-the-loop” innovation using generative AI (GenAI) for adaptive scaffolding in English as a Foreign Language (EFL) writing. Thirty-eight Chinese undergraduates co-constructed narratives with GPT-4o over five weeks. Findings reveal that while linguistic gains require more time, contingent AI-generated input transforms student motivation, interest, and social engagement.

Purpose of Study

Continuation writing requires learners to complete an incomplete story, an integrated reading-to-write task widely recognized for promoting alignment between textual comprehension and written production. Traditional implementations, however, rely on static, pre-published texts that cannot adapt to a student’s unique creative choices. This lack of contingency creates a “narrative disconnect”: the student’s contribution is effectively ignored by the subsequent fixed chapter, which not only diminishes motivation but also fails to provide contingent scaffolding within the learner’s Zone of Proximal Development (ZPD)—a critical gap that static tasks cannot bridge.

Grounded in Vygotsky’s Sociocultural Theory and Long’s Interaction Hypothesis, this research evaluates a “machine-in-the-loop” design in which GenAI functions as a “more capable peer,” offering responsive and adaptive support tailored to each learner’s narrative trajectory. The objective is to establish a dynamic, iterative dialogue wherein each AI-generated turn responds directly and substantively to the learner’s preceding output, thereby fostering meaningful narrative alignment. Specifically, the study examines (1) how this personalized scaffolding influences writing performance across five dimensions (i.e., content, vocabulary, language use, organization, and mechanics) and (2) its impact on learners’ multidimensional writing motivation and engagement, including affective, behavioral, cognitive, and social dimensions.

Research Methods

The study was situated in a mandatory “College English” course at a comprehensive Chinese university, involving 38 first-year undergraduate science students (CEFR B2 proficiency). The intervention spanned five weeks. *Initial Input*: The instructor provided Chapter 1, adapted from the course textbook to establish a baseline theme. *Student Contribution*: Students authored even-numbered chapters (2, 4, 6, 8, 10), contributing approximately 500 words per iteration. *GenAI Adaptive Response*: The instructor utilized GPT-4o to generate odd-numbered chapters (3, 5, 7, 9). Crucially, the GenAI was prompted to continue the specific narrative thread developed by the student in the previous chapter, ensuring high contingency. *Complexity Control and Scaffolding*: To maintain “i+1” input, AI-generated chapters were analyzed via Coh-Metrix. The Flesch-Kincaid Grade Level and Flesch Reading Ease scores were monitored to ensure the GenAI’s language remained slightly more complex than the student’s current production, thereby providing an achievable linguistic challenge. *Data Collection and Analysis*: Writing performance was measured using pre- and post-tests involving narrative prompts of similar difficulty. These were scored via the Jacobs et al. (1981) rubric (covering content, organization, vocabulary, language use, and mechanics). Motivation was measured using the Writing Motivation Scale, while engagement was captured using the Writing Engagement Scale, focusing on affective, behavioral, cognitive, and social dimensions. Data were analyzed using paired samples *t*-tests in SPSS.

Results and Discussion

Writing Performance: Quantitative analysis revealed modest mean increases in content (32.42 to 32.74), vocabulary (28.76 to 29.45), and language use (28.24 to 28.61). While these improvements suggest a positive trend, the five-week duration was insufficient to reach statistical significance. This highlights a critical finding: while GenAI can provide immediate scaffolding, the internalization of complex linguistic structures in EFL writing is a longitudinal process that necessitates sustained exposure beyond a single month of instruction.

Writing Motivation: The intervention yielded a significant positive impact on overall writing motivation ($p < .01$). Students reported significantly higher writing self-efficacy ($p < .05$) and a sharp increase in intrinsic writing interest ($p < .01$). The data suggests that when GenAI validates student creativity by incorporating their plot points into the next chapter, it reduces the “affective filter,” making writing less of a chore and more of a rewarding creative agency.

Writing Engagement: Social and overall engagement scores both saw statistically significant growth ($p = .02$). By acting as a “contingent other,” the GenAI transformed a solitary writing task into a social, collaborative endeavor. From a theoretical perspective, this confirms that GenAI-mediated interaction can simulate the “negotiation of meaning” found in human-to-human interaction, effectively sustaining cognitive and affective investment through continuous narrative feedback.

The study noted two primary hurdles: the high instructor workload regarding prompt engineering and occasional “AI hallucinations” where GPT-4o would introduce minor plot inconsistencies. To scale this practice, the researchers recommend integrating “AI Literacy” into the curriculum, allowing students to manage the GenAI co-author themselves, thereby shifting the instructor’s role from “facilitator of AI” to “mentor of the human-AI partnership.”

Keywords

Generative AI; continuation writing; writing pedagogy; adaptive scaffolding; English as a Foreign Language