

INTEGRATING GENERATIVE AI INTO TASK-BASED LANGUAGE TEACHING: ENHANCING LEARNERS' SPEAKING FLUENCY AND DIGITAL LITERACY

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Abstract

As generative artificial intelligence (GenAI) rapidly reshapes higher education, evidence on its pedagogically effective integration into English as a Foreign Language (EFL) instruction remains limited. This quasi-experimental study examined the effects of embedding GenAI tools within a Task-Based Language Teaching (TBLT) framework on university students' speaking proficiency and digital literacy. Sixty undergraduate EFL students were assigned to either a GenAI-enhanced TBLT group or a traditional TBLT group using a pre-test-post-test control group design. Oral proficiency was assessed using IELTS speaking rubrics, while interviews and reflective journals explored students' learning experiences. Results showed that the experimental group achieved significantly greater gains in speaking fluency, lexical resource, and grammatical accuracy ($p < 0.05$). Qualitative findings further revealed that GenAI-supported feedback reduced speaking anxiety and promoted learner autonomy and collaboration. This study contributes empirical evidence for AI-enhanced TBLT, offering practical guidance for integrating GenAI to advance communicative competence and digital literacy in EFL contexts.

Keywords: Artificial intelligence in education, Digital literacy, EFL speaking fluency, Generative AI, Task-Based Language Teaching

1. Introduction

In the contemporary globalized era, English language proficiency remains a critical competency for academic success, professional mobility, and international communication. In English as a Foreign Language (EFL) contexts such as Indonesia, learners frequently encounter significant challenges in acquiring spoken English fluency due to limited target language exposure outside the classroom, high levels of affective filter, and pedagogical reliance on traditional grammar-translation methods (Rizki & Kurniawan, 2023). To overcome these limitations, communicative language teaching approaches, particularly Task-Based Language Teaching (TBLT), have been widely adopted across higher education institutions. TBLT prioritizes meaningful language use by engaging learners in authentic communicative tasks that mirror real-world language demands (Willis & Willis, 2007).

Despite the recognized efficacy of TBLT, traditional implementation often faces structural constraints, including large class sizes, limited individual speaking time, and delayed teacher feedback. In recent years, the rapid evolution of

Generative Artificial Intelligence (GenAI) tools—such as conversational chatbots, automated speech recognition software, and intelligent tutoring systems—has introduced unprecedented opportunities to transform language pedagogy (Su & Yang, 2023). When integrated into TBLT, AI-powered conversational agents serve as accessible, non-judgmental interlocutors that offer immediate, personalized linguistic input and feedback (Zhao et al., 2024).

Although an increasing body of research examines technology-enhanced language learning (TELL), a distinct research gap exists regarding how GenAI can be systematically structured within the three stages of TBLT (pre-task, task cycle, and post-task) to enhance oral production without compromising communicative authenticity. Most existing studies focus broadly on automated essay scoring or grammar tools rather than interactive oral fluency development. Therefore, the present study aims to address this empirical gap by investigating the impact of a GenAI-assisted TBLT framework on EFL learners' speaking fluency and digital literacy, offering novel pedagogical insights for modern language educators.

2. Literature Review

Task-Based Language Teaching (TBLT) is rooted in SLA theories of task engagement and meaningful interaction (Ellis, 2003). TBLT conceptualizes language acquisition as an experiential process where meaning takes precedence over grammatical form. The standard TBLT framework proposed by Willis (1996) comprises three sequential phases: the pre-task phase (activating background knowledge and introducing topic-specific vocabulary), the task cycle (planning, executing, and reporting communicative tasks), and language focus (analysing specific linguistic features after task completion). Modern adaptations of TBLT emphasize the necessity of embedding authentic digital tools into these phases to reflect 21st-century communicative practices (Gass & Selinker, 2020).

Simultaneously, the integration of Generative AI in language education has gained tremendous momentum. Generative AI models leverage natural language processing (NLP) to engage in natural, open-ended dialogues with users (Luckin & Cukurova, 2019). In EFL speaking contexts, GenAI conversational agents can simulate realistic social interactions, provide immediate corrective feedback on pronunciation and syntax, and adapt their complexity to match the learner's Zone of Proximal Development (Vygotsky, 1978). Recent systematic reviews highlight that while artificial intelligence applications offer profound benefits in personalized scaffolding and feedback, they also present specific pedagogical and technical challenges that must be addressed when implemented in EFL classrooms

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(Muhammad Idul et al., 2026). Furthermore, interacting with AI agents significantly reduces foreign language classroom anxiety (FLCA), enabling learners to experiment with linguistic forms in a low-stakes environment (Kukulska-Hulme & Viberg, 2021). Building upon these foundations, this study proposes a synergy between TBLT and GenAI tools to maximize communicative practice.

3. Research Method

This study adopted a quasi-experimental pre-test and post-test control group design to evaluate the effectiveness of the GenAI-assisted TBLT approach. A total of 60 second-year undergraduate EFL students from two intact classes at a public university in Indonesia participated in the study. The classes were randomly assigned to either the experimental group ($n = 30$), which received GenAI-enhanced TBLT instruction, or the control group ($n = 30$), which underwent conventional TBLT instruction without AI integration over an eight-week intervention period.

The intervention for the experimental group systematically integrated GenAI tools across all three TBLT phases. During the pre-task phase, students utilized AI tools to brainstorm ideas, explore context-specific vocabulary, and listen to model dialogues. In the task cycle, students conducted interactive role-plays with GenAI chatbots (e.g., simulating job interviews or debate arguments), recorded their interactions, and collaborated in peer pairs to refine their responses. In the post-task/language focus phase, students reviewed AI-generated feedback summaries to analyze syntactic accuracy and phonetic precision.

Data were gathered using both quantitative and qualitative instruments. Quantitative data comprised pre-test and post-test oral speaking assessments, evaluated by two independent raters using the standardized IELTS Speaking Assessment Criteria (fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation). Inter-rater reliability was established using Cronbach's alpha ($\alpha = 0.88$). Qualitative data were collected through post-intervention semi-structured interviews with ten selected participants and weekly reflective journal entries to capture student perceptions and digital literacy development. Quantitative data were analyzed using descriptive statistics and independent sample t-tests via SPSS software.

4. Results

To determine the statistical effect of the GenAI-assisted TBLT approach on speaking performance, pre-test and post-test scores of both groups were

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compared. Table 1 presents the descriptive statistics and t-test results for the speaking components across both groups.

Table 1. Comparison of Pre-test and Post-test Speaking Scores

Group	Assessment Stage	Mean (M)	Standard Deviation (SD)	t-value	p-value
Control(n = 30)	Pre-test	05.12	0,043	03.41	< 0.01
	Post-test	0,267	00.58		
Experimental (n = 30)	Pre-test	05.18	0,045	0,397	< 0.001
	Post-test	07.24	00.51		

As indicated in Table 1, while both groups demonstrated improvements from pre-test to post-test, the experimental group exhibited a substantially higher gain score ($\Delta M = 2.06$) compared to the control group ($\Delta M = 0.73$). An independent samples t-test conducted on post-test scores confirmed that the mean difference between the experimental and control groups was statistically significant ($t = 9.84$, $p < 0.001$), with a large effect size (Cohen's $d = 2.54$).

Analysis of sub-component scores revealed that the experimental group achieved the most prominent gains in speaking fluency ($M = 7.40$, $SD = 0.48$) and lexical resource ($M = 7.30$, $SD = 0.52$). Qualitative evidence from student reflective journals supported these findings, with 87% of students reporting that practice with GenAI chatbots reduced fear of making errors and encouraged spontaneous speech production.

5. Discussion

The primary finding of this study demonstrates that integrating Generative AI into TBLT significantly enhances EFL learners' speaking fluency and communicative confidence. These results align with previous research by Zhao et al. (2024), who posited that AI conversational agents serve as low-anxiety practice platforms that foster communicative willingness. By receiving immediate, individualized feedback during the task cycle, students in the experimental group

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were able to notice linguistic gaps in real time, validating Schmidt's (1990) Noticing Hypothesis in technology-enhanced learning.

Furthermore, the pedagogical framework successfully integrated digital literacy development alongside linguistic mastery. Rather than viewing AI as a tool for automation, students utilized GenAI critically evaluating chatbot responses, prompt engineering for better contextual output, and cross-referencing vocabulary suggestions. This dual benefit reinforces Kukulska-Hulme and Viberg's (2021) contention that modern CALL (Computer-Assisted Language Learning) frameworks should cultivate higher-order digital competencies alongside core language skills. Consequently, the combination of structured task phases with dynamic AI interaction establishes a highly scalable model for modern EFL instruction.

6. Conclusions and Recommendations

This study demonstrated that embedding Generative Artificial Intelligence within a Task-Based Language Teaching framework significantly improves university EFL students' speaking fluency, lexical choice, and confidence while simultaneously fostering critical digital literacy skills. The immediate, adaptive feedback offered by GenAI interlocutors bridges the gap between pedagogical theory and authentic communicative practice, creating a non-threatening environment for active language production.

The key implication for language educators is that GenAI should not replace human-led communicative instruction but rather serve as a powerful force multiplier across all TBLT stages. Educational institutions are encouraged to integrate AI literacy modules into language curricula and train educators on effective prompt design and task integration. Future research should expand sample sizes, include longitudinal tracking of language retention, and examine the applicability of AI-assisted TBLT across varying language proficiency levels and diverse instructional settings

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