

Translanguaging with AI in the Multilingual Classroom

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Abstract

Adult English as a Second Language (ESL) classrooms are among the most linguistically and culturally diverse educational contexts, characterized by heterogeneous first languages, educational backgrounds, ages, and migration trajectories. Unlike K–12 or higher education settings, adult ESL programs often bring together learners with no shared first language, irregular attendance patterns, and limited access to academic support outside the classroom.

These structural conditions create an urgent need for multilingual support while simultaneously constraining pedagogies that leverage learners' full linguistic repertoires. Although translanguaging—the flexible and integrated use of learners' entire linguistic resources—has been widely recognized as a productive pedagogical approach, its implementation in adult ESL classrooms remains limited in practice. Recent advances in generative artificial intelligence (AI) introduce new possibilities for addressing this constraint by providing multilingual, on-demand support. Empirical evidence of how AI-mediated translanguaging functions in multilingual classrooms remains scarce and largely based on self-reported data. This study investigates how and under what conditions AI-supported translanguaging supports or constrains language learning and participation in adult ESL classrooms.

This paper reports on an ongoing classroom-based study conducted as part of a doctoral research practicum in an adult ESL program in Western New York. Adopting a mixed-methods, design-based iterative approach, the study examines AI-mediated translanguaging during meaning-focused instructional tasks under realistic adult ESL conditions, including mixed proficiency levels, limited device availability, and irregular attendance. Learners engage with AI tools to support comprehension, production, and task completion across multiple languages, including Arabic, Dari, Turkish, Bengali, Russian, Japanese, Farsi, Indonesian, and Spanish.

Data sources include AI chat logs, learner-produced artifacts, performance checks embedded within instructional tasks, classroom observation field notes, selected screen recordings, and brief recall interviews. Analysis focuses on identifying patterns in how learners appropriate AI tools across first languages, proficiency levels, task types, and AI literacy.

Preliminary findings indicate that AI-mediated translanguaging is most effective when supporting localized language work, such as lexical clarification, vocabulary expansion, and sentence-level reformulation closely tied to task demands. In these moments, AI appears to facilitate access to meaning and support learner participation without displacing instructional goals. In contrast, AI support is less effective when outputs exceed learners' proficiency levels, are accepted uncritically, or take the form of vague or decontextualized prompts. The data also reveal considerable variability in learner uptake of AI support, shaped by differences in language proficiency, familiarity with AI tools, and the extent of pedagogical scaffolding provided by the instructor.

By examining AI-mediated translanguaging as it unfolds during classroom interaction rather than relying on self-reported perceptions, this study contributes empirical insight into the pedagogical role of AI in multilingual contexts. The findings suggest that AI does not function as an inherently beneficial translanguaging tool but as a contingent resource whose effectiveness depends on task design, learner agency, and instructional mediation. More broadly, the paper contributes to applied linguistics and adult education research by clarifying when and how AI can meaningfully support translanguaging under the structural constraints of adult ESL classrooms.