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Blended Learning in English as a Foreign Language in STEM: Fostering Inclusivity, Oral Practice, and Academic Literacy in a Diverse Undergraduate Classroom

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Abstract

This work introduces an innovative, hybrid approach to teaching academic reading, writing, and scientific data analysis in English to second-year biotechnology students for whom English is a foreign language. The course addresses the dual challenge of teaching discipline-specific academic literacy and fostering English communication skills in a large, socio-linguistically diverse cohort of 60-70 students—many of whom are either Hebrew- or Arabic-speaking with limited English proficiency. The course leverages digital teaching innovation through asynchronous weekly assignments delivered via Moodle, each including short instructional videos in English and 5–8 guided questions. Crucially, the asynchronous content is paired with mandatory weekly 15-minute synchronous Zoom meetings in self-selected peer groups of 5–6 students. These meetings, facilitated by the course instructor or trained teaching assistants, require students to actively present and discuss their answers in English using screen sharing and oral explanation. This structure enables individualized feedback, peer learning, and frequent opportunities for spoken English practice in a supportive environment. The course fosters inclusive learning by enabling students to select their discussion partners, thus respecting cultural sensitivities and group dynamics while maintaining pedagogical rigor. It also builds confidence in scientific communication through weekly engagement and a final individual project requiring written and recorded spoken responses in English.

Keywords: blended learning; small group learning; Zoom meetings; peer collaboration; inclusive learning