Chapter 12
Redesigning a Foreign Language Course With the Help of AI:
Benefits and Challenges

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ABSTRACT

This chapter evaluates the use of AI for redesigning a foreign (Arabic) language course to significantly incorporate several SDGs. The course provides conditions for experiential learning where students examine their impact on the planet, make meaningful improvements to their lifestyles to lower their carbon footprint, and grow as thoughtful global citizens. It also stimulates students to reflect on the differences between Western and Arab countries' engagement with sustainability goals through real-world scenarios. The analysis focuses on the positive contributions and challenges that AI presents toward the redesigning goal. In particular, it explores how using AI technology in class and for creating course materials affects HIPs elements: significant time on task; frequent, timely feedback; substantive interactions with faculty, peers, and diverse people and ideas; structured reflection and integration of learning; real-world applications; public demonstration of competence; significant learning elements: foundational knowledge, application, integration, human dimension, and learning to learn.

INTRODUCTION

Although the neural networks (transformers) technology used in most recent artificial intelligence (AI)-assisted tools only took off around 2017, AI has spread in healthcare, business, science, entertainment, agriculture, and education, and is expected to eliminate many current jobs as well as create future ones (Samochowiec, 2020; Davenport & Ronanki, 2018; Manyika et al., 2017). In a knowledge-based society,

AI is becoming a tool of tremendous importance for students' future careers. And debates about its best uses are becoming more prominent.

Debates around the educational uses of constantly evolving technology more generally have been raging for decades (Zawacki-Richter et al., 2019). While no one questions the need to apply technology in education, debates have turned to the *benefits* and *challenges* of specific technology, especially how different disciplines can best incorporate particular AI tools in the curriculum. Any time educators test latest AI tools in the classroom, students increase their AI literacy (Almelhes, 2023; Educause, 2018; for AI literacy see Burgsteiner, Kandlhofer, & Steinbauer, 2016; Kong, Cheung, & Zhang, 2021; Ng et al., 2021). Soon, classrooms will most likely be unthinkable without some use of AI. According to Xu (2020), instructors who know how to use AI will likely replace those who don't. This prediction captures one of the most significant recent trends in education to orient toward incorporating AI and the increased demand it places on instructors' investment in their own professional development.

But is AI important to the classroom only as a skill set for employment after graduation or for instructors' job security? Why should instructors invest time and effort to research and develop educational curricula that increasingly incorporate AI? Will AI solve important problems in education? Two important problems in education that concern this chapter are first, how to make learning, particularly language learning, *effective* and second, how to make learners' experience *engaging*. Indeed, AI (used together with older technology applications) promises to make the process of learning more effective (Ng et al., 2022; Fan et al., 2021; Arnold & Pistilli, 2012), to improve current learners' experience through greater personalized engagement (Cavalcanti et al., 2021), and to make educators' job more efficient (Vazhayil et al., 2019). As reported in multiple studies, after using AI, learners improve their language abilities and attitudes. They also perceive AI as "effective, efficient, accurate, easy to use, and useful/helpful for language learning," and report "having interesting, enjoyable, and satisfactory experiences with these tools" (Woo & Choi, 2021, p. 1787).

Developers of AI for language learning have invested in tools that bypass in-person human instruction in classroom settings, deploying online AI chatbots and aps like ChatGPT, Bing AI, Bard AI, Duolingo, Rosetta Stone, Phase6, Andy, Lanny (Eggbun), Babbel, Bisuu, Mondly, Memrise, Kommunicate, Na-Takallam, Yalla!, etc. Although Duolingo and Rosetta Stone were built on traditional machine learning (ML) algorithms in natural language processing (NLP) that preexisted large language models (LLMs), recently they have started adding LLM-based assistance. And even the obsolete translation models for language learning on which Dulingo is based (Almelhes, 2023) may offer learners materials tailored to their individual progress as well as personalized conversations that mimic native speech with tips about grammar, vocabulary, and cultural context. Yet, AI chatbots and aps are not sufficiently advanced to guarantee success without human input, which makes them useful as an added bonus to college courses (Almelhes, 2023) instead of replacing such courses.

Instructors remain a main conduit for language learning, with many having a strong desire to adopt AI tools not just as an added bonus but in more integrated ways that address the two issues of effective and engaging language learning experience. However, there is a large gap between instructors' grasp of AI's potential and their understanding of the appropriateness, utility, and limitations of adopting specific AI tools (Almelhes, 2023). Indeed, there may be a single comprehensive review of AI tools for language learning, spanning between 2017 and 2020 (Woo & Choi, 2021). Its authors describe their main concerns about instructors' insufficient knowledge of AI tools and the resulting lack of preparation about how and which tools they can use "to generate personalized and customizable learning experiences for the purposes of optimizing language learning by increasing autonomy, motivation, engagement, and ef-

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