


# Chapter 11

## Augmented Reality Mobile Games in Japanese Language Classrooms: Integration Into Practices and Curricula

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### **ABSTRACT**

*This study examined how augmented reality (AR) mobile games can be utilized to teach and learn Japanese-as-a-foreign-language (JFL) in the classroom. JFL students (n = 16) played a GPS-based AR game created using a map of the campus. Each student was given pre- and post-gaming worksheets and a vocabulary reference sheet. The findings revealed that progress through and completion of the AR game's story provided students with a sense of achievement and using the learners' familiar campus resulted in situated learning that connected their physical experience and text interactions in a multimodal setting. However, though the AR game seemed to deliver a successful learning experience overall, the challenges of the app highlight the need for improvements in areas such as the use of furigana and the proportion of unfamiliar vocabulary and kanji. These findings also raised the question of whether students need additional preparation for unfamiliar items, suggesting that these items should be introduced more effectively and used within more extensive learning experiences.*

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## INTRODUCTION

The opportunity to be outside on campus with classmates for a class activity presents students with a different learning setting from a typical classroom activity. Particularly since the outbreak of COVID-19, outside space has been recognized again to be used for learning opportunities. Outside space may also enhance multimodality in second and foreign language (L2) learning processes; multimodal comprehension is considered one of the building blocks in students' acquisition in a pedagogy of multiliteracies (New London Group, 1996). Augmented reality (AR) games are an accessible platform that when integrated with L2 curricula, can help make outside learning multimodal. *Pokémon Go* (Niantic, 2016) is a great commercial example of a location-based mobile AR game since players use a map with a global positioning system (GPS) to collect characters and progress through the story. Due to its global popularity, *Pokémon Go* (Niantic, 2016) was studied to determine how it was able to achieve social connectedness to create a community (Vella et al., 2019). In L2 studies, AR applications and games have been researched as an emergent yet prominent category, usually as a subcategory of mobile-assisted language learning (MALL). The applications of MALL have long been examined within the educational landscape and digital literacies (Panackal et al., 2023), especially when guided by Second Language Acquisition (SLA) principles such as feedback opportunities and situated language learning (Kukulska-Hulme & Viberg, 2018).

According to Perrin (2021), data from 2021 found that 85% of adults own smartphones in the U.S., and that percentage has been increasing every year. Moreover, among adults ages 18 to 29, to which the current study's age group belongs, smartphone ownership stands at 96%, representing the highest rate out of all the age groups (Perrin, 2021). The incorporation of multimodality has been anticipated as a crucial development in L2 education due to its availability and number of communication channels (Allen & Paesani, 2010; Paesani et al., 2015; Swaffar & Arens, 2005). As digital games are multimodal by nature, the use of MALL and AR in L2 classrooms seems like the logical next step in a diverse communication environment. In order to fully embrace a more expansive view of literacy and texts (Kern, 2000, 2003) and create a more "holistic curriculum" (Swaffar & Arens, 2005, p. 76), it must be determined how L2 learners become engaged with an AR game and how they respond to AR game-based class activities. While previous studies have reported the benefits of using AR in education (e.g., Gottlieb, 2018; Lai & Chang, 2021; Larson et al, 2018; Radu et al., 2023; Tacgin, 2020; Vogel & Perry, 2018) and AR games in L2 learning (e.g., Bonner & Reinders, 2018; Le & Dinh, 2021; Liu et al., 2023; Taşkıran, 2018), L2 instructors and program coordinators still have questions about how to implement this technology in classes and curricula. Due to the limited scope of language variety and examples, actual practices within L2 classrooms or

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