

# Chapter 3

## A Systematic Literature Review of Serious Games in Higher Arts Education

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### ABSTRACT

*Since the beginning of the 21st century, the number of studies on serious games has been surging, and more and more serious games are being used for educational purposes to facilitate students' learning and increase their motivation. This study systematically reviewed seven empirical studies on the application of serious games in higher arts education from 2019 to 2024, aiming to reveal the current state of recent research in the field, incorporating trends in the use of technology and the results of the impact on learners. The results show that most articles indicate that serious games are effective in higher arts education. Currently, researchers pay relatively little attention to this area, but this area has good research potential. In addition, integrating serious games with technologies such as augmented reality, virtual reality and mixed reality in higher arts education is a promising avenue for future research and development.*

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## 1. INTRODUCTION

Nowadays, serious games (SGs) find effective applications across various fields such as healthcare, education, military and defense, and ecology, serving diverse objectives including teaching and learning, training, raising awareness, and altering attitudes and behaviors; their intended audience spans across all age groups (Daoudi et al., 2021). These apps are used at all educational levels, including a wide range of disciplines and subjects in primary, secondary, and tertiary education, such as computer architecture, math, science, computational thinking and programming concepts, and language learning (Daoudi, 2022; Hainey et al., 2016).

All areas of the world have witnessed an unprecedented acceleration in the use of innovative technological tools. Specifically within the educational sector, emerging technologies—including social and collaborative learning tools, intelligent and adaptive tutoring systems, as well as augmented and mixed reality applications—have been extensively integrated into conventional educational methodologies by examining the dynamics between digital innovations and learning processes (Hantooobi et al., 2021; Klačnja-Milićević et al., 2017).. In recent years, there has been an increased interest in researching the impact of SGs on learning outcomes in higher education, as it integrates gaming and learning functions (Girard et al., 2013). SGs are activities designed to entertain the user, who learns in that environment and is educated and trained in well-defined domains and tasks (Wouters et al., 2009). The main goal of this tool is learning, with the fun aspect of the activity taking a back seat, and it aims to achieve the acquisition of competencies and skills that lead to the holistic development of the student (Sandí Delgado & Bazán, 2021; Taípe et al., 2017). In the field of education, educational software is now revolutionized thanks to the incorporation of specific designs based on SGs (Fraga-Varela et al., 2021).

Indeed, numerous studies have demonstrated that integrating SGs as supplementary educational resources into the learning process can significantly enhance students' learning experiences, including knowledge acquisition and content comprehension, as well as their overall satisfaction, which encompasses motivation and engagement (De Freitas, 2018; Fokides, 2018). Furthermore, SGs are regarded as a viable alternative to conventional teaching methods, offering significant benefits by enhancing students' academic performance and also fostering higher-level skills such as problem-solving and collaboration (Gómez & Suárez, 2021; Vlachopoulos & Makri, 2017).

Zhonggen (2019) published a study that conducted a meta-analysis of the effectiveness of SGs in education to understand trends in the use of SG in education. Gómez & Suárez (2021), through a scoping review of the existing literature within the period from January 2002 to September 2020, aimed to collect, synthesize, and map SGs in higher education design and impact. Khaldi et al. (2023) systematically

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