



# ImGame Project: A Comprehensive Theory of Immersive Aesthetics and Innovation in Serious Gaming

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## ABSTRACT

The study presents the authors' research for the purpose of designing ImGame, a virtual environment inviting users to playfully learn about the concept of immersion and its historical antecedents. The authors describe ImGame's current pre-production stage and examine the basic characteristics of the feeling of immersion. They intend to deepen the current understanding of the immersive experience in art, taking into account its broad cultural connotations. The article suggests that the aesthetics of immersion can be classified into two psychological modes that have not been explicitly defined in the discourse of immersivity: a calm reflection and one of awe. From the technical standpoint, the project offers a simple handling of triggering animations and events of the game as well as storing of their state in order to create gamification elements, interactions for quizzes and other activities for ImGame or any other game using the a-frame framework to create WebXR experiences.

## KEYWORDS

Contemporary Theory of Culture, Digital Edugaming, Immersive Aesthetics, Serious Games, WebXR

## INTRODUCTION

The goal of the ImGame project is to develop a digital educational tool aimed at increasing creativity by sparking the interest of students in the current cultural paradigms, triggering their imagination as well as experiments of thought, and leading to a desire to create new, personalized artifacts. ImGame will be an innovative virtual environment that strengthens interdisciplinary education involving the areas of arts, philosophy, and the history of modern culture. The concept of ImGame is focused on the aesthetics of immersiveness, one of the most visible contemporary phenomena of digital art.

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We explain the preproduction stage of ImGame. It is focused on innovation concerning the notion of immersiveness and on the technological knowledge of WebXR. At the current stage of the project, we have created only a theoretical model of ImGame, which will be empirically tested in the future. Because all the researchers of the ImGame project work at institutions of higher education, they will use the demo version of the virtual environment at their classes. Thus, the creators of ImGame who are at the same time researchers and teachers, will transfer knowledge of this research using modern media of gaming. The project activities will last during 2023–2025 period, and the empirical study (interviews with players and/or a survey) will be initiated in 2024, facilitating our research upon the feedback of learning experience. This is a research-based project, so it requires serious theoretical research that serves as a fundamental framework for the project's design. The research work has resulted in a detailed description of the immersiveness term that will be represented in this article and in the ImGame virtual environment as a double-sided feeling of awe and calm reflection.

The ImGame platform is based partly on the results of a research project that has been carried out at Vidzeme University of Applied Sciences from 2018 to 2021. In the framework of the post-doctoral project, a digital platform named Art Space was created in a collaboration between the humanities researcher Ieva Gintere and new media artist Kristaps Biters. Art Space is a virtual environment with game elements proposed as a basis for future new media creations intended to strengthen the currently underdeveloped educational potential of art games and to support young artists through the educational platforms where their creative works are presented. The virtual environment Art Space and ImGame project (2022–2025) as its offspring both serve as prototypes that can be used in future projects where other countries can be added, too. This modular structure allows a constant update and facilitates the work to serve as a selection of artworks on a European scale.

## **BENEFITS OF IMGAME: CREATIVITY AND IMMERSIVENESS IN ARTISTIC EDUCATION**

Researchers have broadly demonstrated the importance of creativity in contemporary education (Laal et al., 2014; de Cassia Nakano Primi et al., 2018; Belén Calavia et al., 2021), and yet the interdisciplinary ideas of culture and art in the 21st century that can stimulate the creative thinking have not been used in serious gaming to date. The ImGame project is focused on the modern aesthetics of immersion and aims to educate users about its conceptual issues as well as initiate their creative fantasy. The idea of the project is related to the fact that the educational curricula for the general public (with an exclusion of some specific schools of art and culture) do not teach the historical and interdisciplinary ideas of cultural thought inherited by the art of the 21st century from previous eras. Consequently, this cultural matrix with its rich background is not being used to stimulate deep thought and facilitate students to generate new concepts. Not as much the cultural facts, but creativity itself is actually the central benefit of artistic and cultural education for young people and other enthusiasts because it can help open fresh horizons of thought and lead to innovative approaches that are important for the modern society to solve challenges, such as pandemic, poverty, war and global ecological problems. Such challenges require intellectual capacity that we need to enhance, and cultural education is one of the ways to stimulate it.

Researchers have also highlighted the positive impact of immersive technologies in the educational process (Merchant et al., 2014), which has a long history taking into consideration the concept of serious games (Abt, 1970). By means of 3D visualizations on computer displays, digital augmentations of physical objects, and fully virtual surround representations, immersive environments can realize simulations, games, and virtual worlds that engage users in the learning experience and lead to learning gains. As a result, immersive technologies are increasingly integrated in formal and informal educational settings. However, there is a dearth of research regarding the use of immersive

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