Gamification of Learning in Artistic Fields Through the Form of Playing to Knowledge

Miljan Č. Stevanović [1], Jelena Lj. Pejić [2] and Petar Č. Pejić [3]

[1] *University Metropolitan, Tadeuša Košćuška 63, Belgrade, Serbia*
[2] *University of Nis, Višegradska 33, Niš, Serbia*
[3] *University Metropolitan, Tadeuša Košćuška 63, Belgrade, Serbia*

Abstract

Gamification in the learning process refers to the integration of game elements and mechanics into educational activities and environments to improve engagement, motivation and learning outcomes. This approach to learning, which doesn't have to be strictly digital but can also refer to traditional forms of play, can be applied to art education, providing interactive and immersive experiences that engage individuals in creative exploration.

The most prominent example are virtual art galleries that can be created so that individuals can explore and interact with artworks by different artists from different historical periods. They can engage in activities such as identifying artistic styles, analyzing artworks and answering quiz questions to progress through the gallery. Art trivia games are often an integral part of these virtual tours and are designed to test students' knowledge of art history, famous artists, art movements, and art techniques. Gamification can also weave storytelling elements into art learning experiences. Individual can engage in narratives that connect to artistic themes, historical contexts, or creative challenges. By immersing themselves in these stories, students can develop a deeper understanding of art and its relationship to culture, society, and personal expression.

The aim of this research is to show and compare the impact of using traditional and video games in the process of learning in artistic fields. One of the examples that will be presented are the projects of the Museum of Vojvodina in Novi Sad, which in different ways, they made their permanent exhibition more interactive. The main conclusion of the research is that the connection between the game and the art itself was inseparable from its origin. Through art, one learns about the world and art is a testimony of past times, and since art is considered by many to be a game, then this work deals with a natural theme with two inseparable entities - game and art.

Keywords
gamification, knowledge, games, activity, art

1. Game-based Learning

Game-based learning (GBL) provides a dynamic approach to everyday, seemingly monotonous, cognitive activities for children and adults. By using interactive and entertaining content in teaching materials and in different spheres of cognitive domains, they encourage the curiosity and creativity of individuals or groups. Gamification is a process of using elements of games (traditional games or video games) as an integral part of the learning process that aims to make learning itself an active process in which the individual is not just a passive recipient of knowledge. *The integration of modern technology and gaming in the learning and education context is not a new concept, yet the broad spread of digital*

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game acceptance has attracted instructional designers, researchers, and educators to further explore its potential [1].

The main feature of game-based leaning is on practical experiences, in which participants are involved in cognitive activities that include game elements, tactilely, they are in a direct relationship with the materials that are part of the study. The very process of acquiring knowledge to a large extent becomes individual and is directly related to the characteristics of the individual person. One of the essential features of a game is that it provides enjoyment and provides constant feedback. When this feature is transferred to learning, then the learning process itself becomes more interesting. Because each individual will reach to the knowledge in different ways, with the help of their creativity and imagination. The process of turning something into a game can also include a group of participants in which each individual will contribute to solving the task in their own unique way. Joint participation in solving a particular problem strengthens social interaction and teamwork.

Some types of games whose elements can be applied to make learning more interesting are educational games that turn a certain topic into exciting missions where lessons are intertwined with adventure. In addition to traditional games (such as card games, various rebuses, puzzles) video games are increasingly discussed in modern educational processes as an integral part of learning. The difference between traditional games and video games is only reflected in the physical/virtual form itself, the difference in the final outcome is almost negligible. When talking about educational games, they are mostly classified as "serious games" because the very creation of educational games requires the connection of several different fields into, which Sara de Freitas classified in computer sciences, natural sciences and information sciences [2].

Role-playing scenarios reveal new perspectives and encourage empathy, which were dealt with by a pioneer in educational game research James Paul Gee. Gee wrote down: *I am mainly concerned with the sorts of video games in which the player takes on the role of a fantasy character moving through an elaborate world, solving various problems (violently or not), or in which the player builds and maintains some complex entity, like an army, a city, or even a whole civilization* [3]. In his work, Gee examines whether students, if the material was in the form of a game, would devote enough time and attention to solving games like problems when playing as thay play classic video game for fun. He singled out three areas that are important in the development of video games: "situated cognition", New Literacy Studies (which includes social and cultural practices with economic, historical and political implications) and connectionism [4].
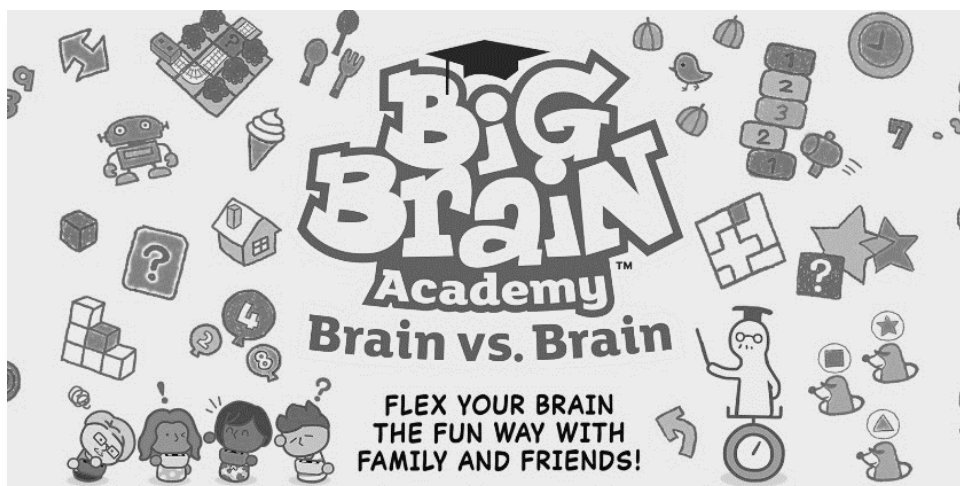

Figure 1: Big Brain Academy, puzzle video game, Nitendo, 2005

The number one educational game for kids right now is *Big Brain Academy* [5] (Figure 1). It was created to test and measure the mental skills of the user. *The game's segmented into five different categories of thought processes: think, memorize, analyze, compute, and identify, each with three different activities attached to them* [6]. For adults it is in the first place of educational games *Assassin's Creed: Origins* [7] (Figure 2). The plot is set in ancient Egypt, at the end of the Ptolemaic period, and the player can learn a lot about that period, historically as well as visually, moving through a virtually

restored historical and geographical landscape. These are great examples of educational games, but they are still an independent achievement, from which a lot can be learned. As these two are examples of games as a whole, which works on its own, they cannot be directly incorporated into cognitive and interactive processes, only their specific elements can be applied. Some of the games that can be actively used are pantomime (Figure 3), bingo, quizzes with different topics...
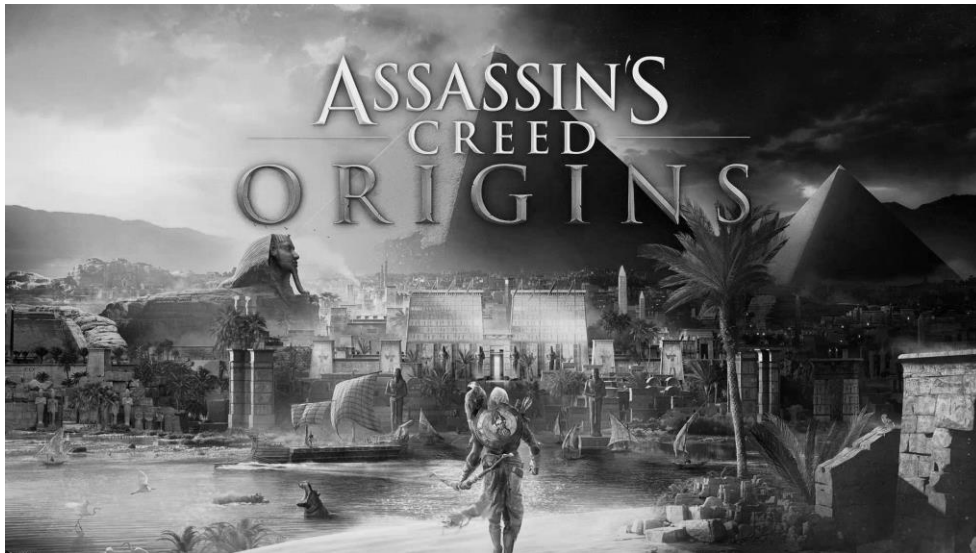

Figure 2: Assassin's Creed: Origins, action role-playing video game, Ubisoft, 2017

Figure 3: Charades for Kids, illustration, Shutterstock.com

2. Game and Art

It is necessary to make a distinction between games and art. Mostly when talking about game and art, the game is considered a work of art, which is justified by the evolution of video games in recent years. Of course, you should look back at classic video games like *Tetris* [8] or *Super Mario* [9], which have been given the epithet of eternity, but the emphasis is on modern games that go beyond conventional boundaries with their innovations and graphic solutions. The design of each level, character and mutual interaction, which are no longer just for entertainment, are designed to provide a

superior aesthetic experience, which is one of the common features with works of art. The use of color, lighting, and visual dramatic storytelling in games can evoke emotions similar to those evoked by traditional art.

A more essential and deeper relationship between games and art is how they can be united into a single work. *To make sense of artists' games requires that we recognize that there is a difference between games as entertainment and games as a medium* [10]. With the gamification method, elements of video games can be added to a work of art, using new technologies, with the aim of creating an interactive work of art. A large number of art institutions around the world have made their art installations more accessible thanks to virtual galleries and walks through them. This was the first step in bringing classic museum settings closer to the current audience, which perceives the reality around them mainly with the help of smart devices. A further step in the realization of the idea of bringing art closer to the audience is the upgrade of the virtual walk with opportunities to interact with the installation. We have the example of a professor Charisios Achills who with his team did a virtual mapping of the Petranola Cave in Greece, with elements of interaction with the paleontological objects originally discovered in it. This project is called *Cave3* [11] aims to enrich visitors' experience and educate a wider audience. *The ARTECH Project* [12] of the permanent collection of Teloglion Fine Arts Foundation in Thessaloniki, Greece, under the guidance of professors Christos Vlachokostas uses a multimedia educational application with games such as classic questions with offered answers or even more interestingly, it offers the possibility that the visitor, through the virtual process, participates in the conservation of works of art. Players make decisions and shape outcomes.

In contrast to these two examples of the combination of video games and art, which are based on visual reality with the addition of virtual elements, we have an example of the combination of game and art that is primarily visually virtual with real information from the real world. *Tate Worlds* [13], a project created by Tate Galleries is completely gamified and virtual. The project consists of specially created maps for *Minecraft* [14] gaming platform and involves the transposition of several artworks from the Tate collection into the virtual world of a video game. These maps are made by *The Common People* and of the eight selected works, three have been realized so far. *Tate Worlds* games are available to existing Minecraft players and can be downloaded for free [15].

We have an example of a painting which was done by the famous artist Christopher Nevinson, and his *The Soul of the Soulless City* (Figure 4). In the *Minecraft* game version of the painting (Figure 5), we are greeted by the avatar of the artist Christopher Nevinson (Figure 6) and you can start exploring the image by playing the map [16].
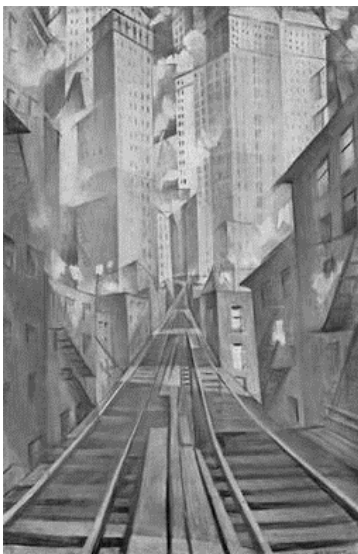

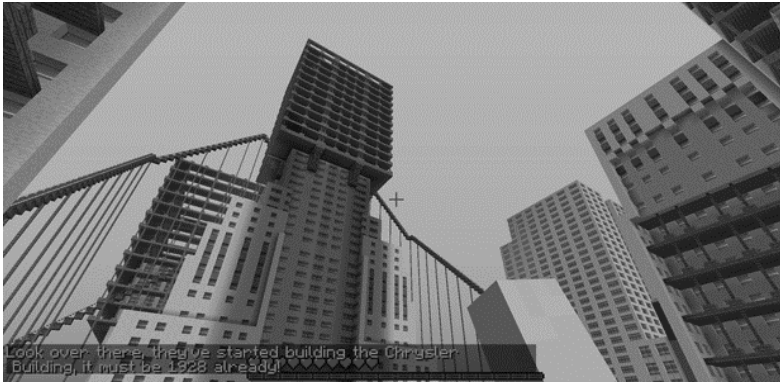**Figure 4:** The Soul of The Soulless City, Christopher Nevinson, 1920

Figure 5: gamified painting The Soul Of The Soulless City, as a Minecraft map, 2015
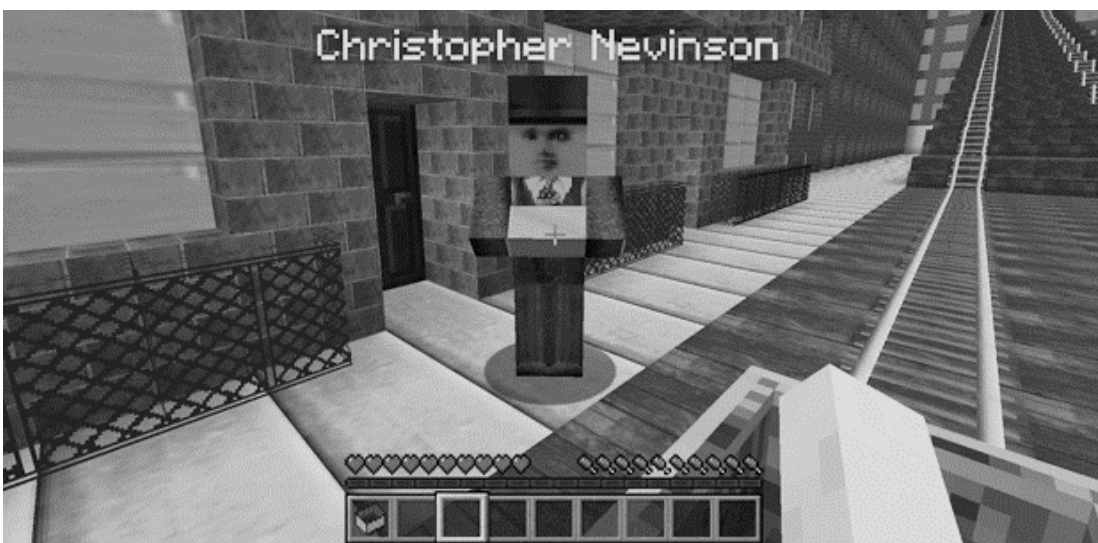

Figure 6: avatar of the artist Christopher Nevinson, 2015

3. Interactive Exhibition of the Museum of Vojvodina in Novi Sad

The Museum of Vojvodina in Novi Sad is a leader in the process of digitalizing movable objects of cultural heritage in our country. It covers the subject from the Paleontological period until the end of the Second World War. The unique blend of Serbian, Hungarian, Slovak, Romanian and other influences in the region is beautifully displayed through art, historical documents and objects from everyday life. The Museum of Vojvodina is not only a repository of artifacts from the past, but an institution that involves visitors in actively exploring the exhibition. *Museum experiance become more personal and individual rather than standard and generic* [17]. A special branch of the museum represents the Department for Pedagogical Work, which gave it the important role of an educational center.

Interactive approaches, multimedia presentations and interesting workshops involve all generations to actively participate in discovering the past. This dynamic approach transforms history and revives the approach and dialogue between exhibits and visitors. An innovative approach to telling history, like the animated adventure series of *Mouse Haralampi* [18] (Figure 7) crator of this idea is Sladjana Velendecic and the form of this adventure of the mouse and the stories he tells us are two minutes long. Then *Muzejska e-Sveznalic@* [19] is an application for smart devices that, with the help of virtual guides, we can learn a lot about facts related to museum objects, as well as the *Golden Helmet - an interactive comic in augmented reality* [20] which by means of a narrative approach we can find out the whole process of the discovery of the Golden Helmet (Figure 8), one of the most famous museum

exhibits (out of three found), gives us a vivid insight into the stories of the objects themselves. The museum's multimedia approaches allow us to become active participants in its narratives, empowering and shaping the learning path.

The Museum of Vojvodina is an example of how technology and its expressive possibilities merge with history. History is not a distant memory, intangible, but we can tangibly participate with it in the present moment, in a way that textbooks cannot. *Current developments in museums prompt us to reflect on how we relate to the past in a digital culture* [21]. The museum's multimedia presentations go beyond the physical boundaries of the institution. With one click of a button, you can access additional materials, delve deeper into certain topics, or virtually revisit museum ones. This digital extension ensures that the museum's impact extends far beyond its physical space, reaching a global audience.

Figure 7:
Mouse Haralampi,
the hero of the Museum of Vojvodina, Novi Sad.

Figure 8:
Golden helmet (IV century)
exhibit of the Museum of Vojvodina,
Novi Sad.

4. Conclusion

Gamification in the learning process in artistic fields is mainly related to the notion of play, interactivity and knowledge. This paper presents the basic concepts of games in the learning process, then examples of games and art, and an example of the application of gamified works of art in our country. During the research itself, it was necessary to distinguish between the two concepts of play and art. Since the features are quite similar, the freedom of expression and the individual formation of the final image, it was necessary to point out their differences in some places. Those differences were mostly certain nuances regarding the perception of play and art as separate groups that should have been bridged by the perception of their mutual interweaving.

This area of presentation and their educational feature in the understanding of works of art is still young and has a lot of opportunities to continue to be upgraded. This upgrade, in addition to being able to apply to the entire art collection, is interesting because it has two separate visual effects, whether a certain object will be realistically displayed with some game elements, or whether that art object will be completely transformed through the aesthetic domain of games with elements from the real world.

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