

ENGAGING WITH THE PAST: DIGITAL GAMES AND ITALY'S HERITAGE PRESERVATION

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Abstract

This paper examines the evolving role of video games and gamified applications in promoting and preserving cultural heritage in Italy. With the growing integration of digital tools into museum strategies, cultural institutions have embraced these technologies to engage broader audiences through interactive and immersive experiences. The paper explores how innovations such as augmented and virtual reality, combined with educational games, are transforming the fruition of cultural heritage. Additionally, the study highlights the impact of these digital initiatives on public participation, community engagement, and the long-term sustainability of heritage preservation efforts. By exploring case studies and reviewing current research, this paper attempts to address the challenges and opportunities presented by the digital transformation of cultural institutions while considering the potential impacts on heritage promotion in the future.

Keywords: Gamification, Cultural Heritage, Community Engagement, Digital Preservation

Introduction

Gamification in heritage has evolved alongside advancements in technology and the digitalisation of cultural institutions. As a country with a rich cultural heritage and a long-standing tradition of protecting historical landmarks, Italy faced the challenge of modernising how to make heritage accessible to a broader audience. Cultural institutions responded to changing visitor needs by introducing innovative forms of interaction that combined education and entertainment. Initially intended for entertainment, video games have transformed into a recognised form of art that merges technology, design, and narrative. Serious games, in particular, have combined these interactive experiences with educational objectives, helping to promote heritage and engage younger generations¹. This paper aims to analyse the contribution of video games and gamified applications to promoting cultural heritage in Italy and to examine how these digital tools have

¹ Samanta Mariotti, "The Use of Serious Games as an Educational and Dissemination Tool for Archaeological Heritage: Potential and Challenges for the Future," *Magazén* 2, no. 1 (2021): 119–138, <https://doi.org/10.30687/mag/2724-3923/2021/03/005>. See also: Juan Hiriart, "Designing Video Games for History Classrooms," in *The Past as a Digital Playground: Archaeology, Virtual Reality and Video Games*, ed. Stefano Bertoldi and Samanta Mariotti (Oxford: Archaeopress Publishing Ltd, 2022), 55–66.



been integrated into broader strategies implemented by museums and cultural institutions. Furthermore, the paper investigates the digital transformation of cultural institutions, which extends beyond mere digitisation to leverage modern technologies, such as augmented and virtual reality, to create interactive experiences and new forms of heritage fruition. This shift toward digital heritage increases access to historical content for younger audiences and fosters active participation in preserving cultural narratives. Finally, the paper assesses how technological advancements and collaborative efforts are shaping the future of heritage preservation.

This paper adopts a qualitative, theoretical approach, reviewing existing case studies and literature on video games and gamified applications in Italian cultural institutions. The focus will be on discussing how digital tools have supported efforts to make cultural content more accessible to various audiences and how they have encouraged broader public participation in heritage preservation. We will highlight key examples from Italy and reflect on the wider implications for future developments in the field of cultural heritage, including the highly successful *Father and Son 2*, chosen for its wide reach and innovative integration of virtual and physical experiences, and *Humbria²O in Gioco*, selected for its strong partnership between various municipalities and promotion of lesser-known cultural sites. This methodology we will use is in line with the approach developed in the “Heritage Game: Gamification Model for Community-Based Heritage Work: Selected Best Practices” (No. 2023-1-PT01-KA220-HED-000154261) project, where games are evaluated based on cultural and social impact (accessibility, sustainability, community engagement) and gamification criteria (motivation, interactivity, player engagement). The model focuses on how game mechanics contribute to the preservation and promotion of cultural heritage while fostering long-term public interest and participation².

1. Gamification in Heritage

1.1 Games as a Tool for Cultural Dissemination

Technological advancements and the digitalisation of cultural institutions have brought new opportunities to improve visitor interaction and make cultural heritage more accessible to a larger audience. Recently, museums have started to use gamification, combining traditional exhibits with interactive elements³. Since the 1990s, video games have become an essential tool, evolving from purely entertainment formats into a medium with significant educational potential, effectively using visual design and engaging narratives. Video games and gamified applications have proven suitable methods for attracting younger audiences and

² Silviu Miloiu, Marusya Smokova, and Sergiu Musteață, eds., *A Gamification Model for Community-Based Heritage Work: Selected Best Practices* (Târgoviște: Editura Cetatea de Scaun, 2024).

³ Maria Xipnitou et al., “From Discovery to Exhibition: Digitizing a Cultural Educational Program Using 3D Modeling and Gamification,” in *Transdisciplinary Multispectral Modeling and Cooperation for the Preservation of Cultural Heritage* (Cham: Springer Nature, 2019): 337–349.

bringing them closer to cultural heritage. One of the first exhibitions to focus on video games as a cultural phenomenon was organised by the Museo Nazionale del Cinema in Turin in 2002. This exhibition was a significant success and paved the way for further initiatives in Italian museums. In 2007, the Triennale di Milano hosted a considerable festival dedicated to video games, the Game Art Gallery, which emphasised the artistic potential of this approach⁴. This festival marked a significant milestone, demonstrating that video games could be more than just interactive entertainment; they could also serve as a means of creative expression. The exhibition featured video games connected to artistic movements, design, and narrative experimentation.

These early multimedia experiments led to further explorations of video games as a medium. In 2008, the Museo Archeologico Virtuale (MAV) in Herculaneum used simulations and digital reconstructions of Roman monuments, launching one of Italy's first gamified projects⁵. The year 2010 marked a turning point with the rise of smartphones, which allowed for broader use of gamified applications,⁶ making technologies such as augmented reality (AR) and virtual reality (VR) more accessible⁷. Since then, specialised exhibitions in Italy have begun to explore the relationship between video games and history, and museums have linked historical artefacts with digital experiences⁸. Furthermore, cultural institutions increasingly focused on developing games with educational aims. One of the first examples is the game Art Academy (2010–2011), designed to teach art through the Nintendo platform⁹. Since 2015, the Museo Egizio in Turin has been utilising AR and VR to create interactive tours that allow visitors to examine artefacts in detail—otherwise inaccessible objects. This approach enhances the visitor experience and educates children through gamified applications that playfully teach history¹⁰.

⁴ Elisabetta Modena, *Musei nei videogiochi | Videogiochi nei musei* (Modena: Piano B, 2019), <https://doi.org/10.6092/issn.2531-9876/10251>.

⁵ Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodonico, "Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis," *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadellacultura.it/anno-xxxiii-2023-n-3-4/>.

⁶ Eike Falk Anderson et al., "Developing Serious Games for Cultural Heritage: A State-of-the-Art Review," *Virtual Reality* 14, no. 4 (2010): 255–275.

⁷ Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodonico, "Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis," *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadellacultura.it/anno-xxxiii-2023-n-3-4/>.

⁸ Elisabetta Modena, "Musei nei videogiochi | Videogiochi nei musei," *Piano B. Arti e Culture Visive* 4, no. 1: 83–105, <https://doi.org/10.6092/issn.2531-9876/10251>.

⁹ Elisa Bonacini and Sonia Caterina Giaccone, "Gamification and Cultural Institutions in Cultural Heritage Promotion: A Successful Example from Italy," *Cultural Trends* 31, no. 1 (2021): 3–22, <https://doi.org/10.1080/09548963.2021.1910490>.

¹⁰ Elisa Bonacini, *Museums and Forms of Digital Storytelling*, trans. Stephan Hassam (Rome: Aracne Editrice, 2022), 1–20.



The development of gamification was supported not only by mobile technology but also by collaborations between museums and technology companies¹¹. Video games incorporated educational elements and geolocation features, connecting the virtual experience with physical visits to historical sites¹². A significant shift in Italian cultural institutions occurred in 2017 when the National Archaeological Museum in Naples, collaborating with Tuo Museo, created the game *Father and Son*. This game, which will be discussed in more detail later in this paper, combined the protagonist's story with the museum's collection, promoting its exhibits while educating players. It became the first serious Italian game developed with a museum to increase interest in culture and museum attendance. The uniqueness of *Father and Son* lies in the fact that players could unlock new game levels by visiting the museum, thereby connecting virtual and physical experiences¹³. This innovative approach significantly boosted museum attendance and awareness.

1.2 Current Directions in Serious Games

Following the success of *Father and Son*, other Italian institutions began investing in developing serious games. In 2018, the Mi Rasna project was launched, bringing together 55 museums and archaeological parks from the Tuscany, Lazio, and Umbria regions. These institutions contributed expertise and visual materials from their collections, supporting the development of a game focused on reconstructing the Etruscan period. The game *Mi Rasna*, developed by EGA Entertainment Game Apps, aimed to educate players about Etruscan culture while promoting visits to the museums and archaeological sites involved in the project¹⁴. The game was designed to utilise geolocation, allowing players to access new game elements directly within the museums. Since its launch, the game has been downloaded by over 25,000 people, with more than 20,000 player

¹¹ Doğan Kalak, Derya Güleç Özer, and Serdar Aydın, "Experiencing Cultural Heritage Through Gamification: Mardin Orphanage," in *Digital Design Reconsidered*, ed. Wolfgang Dokonal, Urs Hirschberg, and Gabriel Wurzer, *Proceedings of the 41st Conference on Education and Research in Computer Aided Architectural Design in Europe* (Graz: Graz University of Technology, 2023), 671–679.

¹² Samanta Mariotti, "Gamifying Cultural Heritage: Education, Tourism Development, and Territory Promotion: Two Italian Examples," in *Handbook of Research on Cross-Disciplinary Uses of Gamification in Organizations*, ed. Oscar Bernardes, Vanessa Amorim, and António Carrizo Moreira (Hershey, PA: IGI Global, 2022), 418–444, <https://doi.org/10.4018/978-1-7998-9223-6.ch020>.

¹³ Samanta Mariotti, "The Use of Serious Games as an Educational and Dissemination Tool for Archaeological Heritage: Potential and Challenges for the Future," *Magazén 2*, no. 1 (2021): 119–138, <https://doi.org/10.30687/mag/2724-3923/2021/03/005>.

¹⁴ Bonacini, Elisa, and Sonia Caterina Giaccone. "Gamification and Cultural Institutions in Cultural Heritage Promotion: A Successful Example from Italy." *Cultural Trends* (2021). <https://doi.org/10.1080/09548963.2021.1910490>

geolocations recorded at the included sites. Players have also solved over 640,000 quizzes and puzzles related to Etruscan cities and history¹⁵.

Video games in Italy have gradually evolved into a recognised art form that attracts visitors and delivers educational content. In 2018, the Museo delle Culture in Milan (MUDEC) held an exhibition titled Videogame Art – A New Medium, which explored how video games influence modern art forms. The exhibition traced the history of game design and its development to the present, where video games are considered innovative works at the intersection of technology and art¹⁶. Among the significant serious games from recent years, it is essential to mention *A Life in Music*¹⁷ (2019), created in collaboration with the Royal Theatre of Parma; *Beyond Our Lives*¹⁸ (2019), supported by the Tuscany Region Tourist Board; and *The Medici Game*¹⁹ (2019), developed by the Pitti Palace in Florence. All these games combine educational goals with digital marketing, educating players and encouraging them to visit the places featured in the games²⁰. In 2019, the project *Time Tales - The Etruscans*²¹ was also launched, targeting children and using game mechanics to teach about Etruscan civilisation through interactive stories and reward systems²². During the same period, the Aquileia 3D application²³ was developed, which used augmented reality (AR) to display the Roman history of the city of Aquileia.

Today, cultural institutions use video games as a marketing tool to engage younger audiences and promote tourism in lesser-known locations²⁴ and are

¹⁵ Bonacini, Elisa, and Sonia Caterina Giaccone. "Gamification and Cultural Institutions in Cultural Heritage Promotion: A Successful Example from Italy." *Cultural Trends* (2021). <https://doi.org/10.1080/09548963.2021.1910490>

¹⁶ Elisabetta Modena, "Musei nei videogiochi | Videogiochi nei musei," *Piano B. Arti e Culture Visive* 4, no. 1: 83–105, <https://doi.org/10.6092/issn.2531-9876/10251>.

¹⁷ Teatro Regio di Parma, "A Life in Music," accessed November 16, 2024, <https://www.teatroregioparma.it/spettacolo/a-life-in-music/>.

¹⁸ Tuomuseo, "Beyond Our Lives: Disponibile il Video Gioco Dedicato agli Etruschi," accessed November 16, 2024, <https://www.tuomuseo.it/beyond-our-lives-disponibile-il-video-giocodedicato-agli-etruschi/>.

¹⁹ Sillabe, "The Medici Game: Murder at Pitti Palace," accessed November 16, 2024, <https://www.sillabe.it/it/edutainment/751-the-medici-game-murder-at-pitti-palace.html>.

²⁰ Elisa Bonacini and Sonia Caterina Giaccone, "Gamification and Cultural Institutions in Cultural Heritage Promotion: A Successful Example from Italy," *Cultural Trends* 31, no. 1 (2021): 3–22, <https://doi.org/10.1080/09548963.2021.1910490>.

²¹ eGameApps, "Time Tales," accessed November 16, 2024, <https://www.egameapps.com/gameapps/time-tales/>.

²² Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodonico, "Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis," *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadellacultura.it/anno-xxxiii-2023-n-3-4/>.

²³ Fondazione Aquileia, "Aquileia 3D," accessed November 16, 2024, <https://www.fondazioneaquileia.it/it/visita-aquileia/aquileia-3d>.

²⁴ Célio Gonçalo Marques, João Paulo Pedro, and Inês Araújo, "A Systematic Literature Review of Gamification in/for Cultural Heritage: Leveling up, Going Beyond," *Heritage* 6, no. 8 (2023): 5935–51.



now commonly used to promote cultural heritage in Italy²⁵. By 2023, 80 gaming initiatives had been identified in 63 cultural institutions. Northern Italy had 49 examples, central Italy had 16, and southern Italy had 13²⁶. Most games are designed for mobile devices and focus on museums and archaeological parks. More than half of the games are dedicated to archaeology, with mobile platforms preferred. Additionally, 34% of the games use augmented or virtual reality to increase interactivity when exploring historical sites. These projects are long-term and regularly updated. Museums view gamification as a tool for increasing attendance and building their brand. Although the direct economic benefits are not always clear, investments in AR and VR technologies are considered crucial for deeper engagement with cultural heritage²⁷.

2. Collaborative Heritage

2.1. Digital Transformation of Cultural Institutions

The digital transformation of cultural institutions marks a significant shift in how cultural heritage is made accessible to the public. This process goes beyond digitalising and presenting collections online; it leverages new technologies to create interactive experiences and enhance educational opportunities. For example, the *Tuscany+* project (2010) allows users to view landmarks in Tuscany through AR, with geolocated information provided directly on-site²⁸. Similarly, *PugliaReality+*²⁹ (2011) enables visitors to explore prehistoric dolmens in the Puglia region via mobile devices, offering 3D models and historical context. The Living Hill project (2017) further expanded on these innovations, creating a digital world that allows the public to discover Tuscan heritage through gamified elements, blending education with entertainment³⁰. As museums, galleries, and

²⁵ Samanta Mariotti, "Serious Games and Archaeology: Rough Notes on Crafting Archaeological Data for Heritage Enhancement," in *Advances in Cultural Heritage Studies*, ed. Alexandra de Carvalho Antunes, Grigor Angjliu, and Mariagrazia Bellanova, 217–234, *Contributions of the European Students' Association for Cultural Heritage* (Oeiras, Portugal: Mazu Press, 2020).

²⁶ Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodónico, "Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis," *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadellacultura.it/anno-xxxiii-2023-n-3-4/>.

²⁷ Eike Falk Anderson et al., "Developing Serious Games for Cultural Heritage: A State-of-the-Art Review," *Virtual Reality* 14, no. 4 (2010): 255-75.

²⁸ Elisa Bonacini, "La Realtà Aumentata e le App Culturali in Italia: Storie da un Matrimonio in Mobilità," *Il Capitale Culturale: Studies on the Value of Cultural Heritage*, no. 9 (2014): 89–121, <https://doi.org/10.13138/2039-2362/1225>.

²⁹ Forum PA, "PugliaReality+," accessed November 16, 2024, <https://www.forumpa.it/app-pa/pugliareality-plus/>.

³⁰ Samanta Mariotti, "Transforming the Archaeological Record Into a Digital Playground: A Methodological Analysis of The Living Hill Project," *Journal on Computing and Cultural Heritage* 7, no. 1 (2020): 1444–1457, <https://doi.org/10.24072/pci.archaeo.100399>.

archaeological sites seek ways to engage audiences outside traditional spaces, the COVID-19 pandemic 2020 significantly catalyses this transformation. The need for virtual access and new digital experiences has rapidly accelerated the adoption of these technologies, enabling institutions to meet the growing demands of the modern, digitally connected audience³¹.

Cultural institutions began proposing virtual tours, utilising digital interfaces and gamified applications to allow people to explore their collections without physical visits. One notable example is the *Uffizi Decameron*³² initiative, which offered 3D tours of the Uffizi Gallery's art collection in Florence. Inspired by Boccaccio's Decameron, this project became a pioneer in the digital presentation of art during the lockdown period³³. In addition to Uffizi, other Italian museums, such as the Museo Nazionale del Bargello and the Museo di Palazzo Ducale in Venice, joined the Google Arts & Culture platform, providing high-quality digital images of their collections for public access³⁴. Another prominent project in the realm of digital transformation is the *C.A.P.I. - Collina Accessibile di Poggio Imperiale*³⁵ (2014) project, which focuses on 3D modelling of the archaeological site at Poggio Imperiale. In collaboration with the University of Siena, this project created the Open-Air Museum of the Carolingian Village, offering virtual tours of the medieval town of Poggio Bonizio during the pandemic³⁶. Advanced technologies such as photogrammetry and laser scanning enabled a precise reconstruction of historical structures.

These virtual experiences are accessible to anyone unable to visit the site in person. In addition to reconstructing archaeological discoveries, the digitisation of cultural institutions emphasises interactivity and visitor engagement³⁷. Traditional

³¹ Elisa Bonacini, *Dal Web alla App: Fruizione e valorizzazione digitale attraverso le nuove tecnologie e i social media* (Catania: Giuseppe Maimone Editore, 2024).

³² Rete Toscana Classica, "Uffizi Decameron: Il Museo in Rete," accessed November 16, 2024, <https://www.retetoscanaclassica.it/scelti-per-voi/uffizi-decameron-il-museo-in-rete/>.

³³ Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodonico, "Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis," *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadellacultura.it/anno-xxxiii-2023-n-3-4/>.

³⁴ Elisa Bonacini, *Museums and Forms of Digital Storytelling*, trans. Stephan Hassam (Rome: Aracne Editrice, 2022), 1–20.

³⁵ Archeomatica, "Poggibonsi (Siena): Parte il Collina Accessibile di Poggio Imperiale Progetto," accessed November 16, 2024, <https://www.archeomatica.it/ict-beni-culturali/poggibonsi-siena-parte-il-collina-accessibile-di-poggio-imperiale-progetto/>.

³⁶ Stefano Bertoldi, "C.A.P.I. Project in the Making: 3D Applications at Poggio Imperiale Between Materiality and Virtual Reality (Poggibonsi, IT)," *Open Archaeology* 7, no. 1 (2021): 1444–1457, <https://doi.org/10.1515/opar-2020-0201>.

³⁷ Samanta Mariotti, "Serious Games and Archaeology: Rough Notes on Crafting Archaeological Data for Heritage Enhancement," in *Advances in Cultural Heritage Studies*, ed. Alexandra de Carvalho Antunes, Grigor Angjliu, and Mariagrazia Bellanova, 217–234, *Contributions of the European Students' Association for Cultural Heritage* (Oeiras, Portugal: Mazu Press, 2020). See also:



methods of presenting culture and history may seem static and impersonal for many, especially younger generations. Given the rapid technological advances and shifting visitor preferences, museums and similar institutions need to invest more in digital technologies and platforms to meet the expectations of the new generations, particularly Generation Z, which is deeply connected to mobile devices and interactive forms of engagement. Research conducted at the Università degli Studi di Palermo and Università di Catania between 2018 and 2020 revealed that up to 85% of students from this generation would welcome the introduction of gamified elements, such as interactive games and quizzes linked to museum exhibits. Additionally, 72% preferred personalised tours to tailor their visits to their interests. Furthermore, 65% of respondents indicated that they would appreciate a centralised platform that aggregates digital collections from various museums in one place, making it easier to access content without navigating multiple websites³⁸.

In response to the growing demand for interactive and personalised cultural experiences, Italy has adopted gamification to bridge technology and cultural heritage in educational projects. These initiatives engage young people by offering creative and engaging ways to learn about local heritage. An example is the #ComunicaCultura project, which took place in 2015 in Realmonte, Sicily. In collaboration with the Department of Cultural Heritage of Agrigento and funded by the Sicilian Regional Department of Culture, the project involved students from three high schools learning about local heritage through gamified elements. Students created 3D models of the Roman villa Durruei, the Scavuzzo salt mines, and the Scala dei Turchi natural site, using tools like Agisoft Photoscan and Cinema 4D³⁹. The students also developed scripts and storyboards for short videos, with a YouTube competition, where entries were judged based on originality and quality, thus motivating them to enhance creativity. In addition to gamification, new approaches like story doing improve engagement by allowing participants to take part in creating and experiencing stories actively. Unlike traditional storytelling, which focuses on conveying information, storytelling turns participants into key actors within the narrative. For example, in 2019, the Italian Ministry of Education

Augusto Palombini, "Archeologia, interazione, gioco: come il digitale ha mutato la disciplina. L'osservatorio di Archeovirtual," in *The Past as a Digital Playground: Archaeology, Virtual Reality and Video Games*, ed. Stefano Bertoldi and Samanta Mariotti, 67–72 (Oxford: Archaeopress Publishing Ltd, 2022).

³⁸ Elisa Bonacini, "How Could Museums Improve Their Digital Collections for New Online Audiences? Some Suggestions from an Empirical Survey with Gen-Z Students," in *Cultural Heritage Active Innovation for Sustainable Society – CHANGES* (University of Bari, 2024).

³⁹ Elisa Bonacini, Domenica Gulli, and Davide Tanasi, "3D Imaging Analysis and Digital Storytelling for Promotion of Cultural Heritage: The School Outreach Project of Realmonte," in *Proceedings of the 8th International Congress on Archaeology, Computer Graphics, Cultural Heritage and Innovation 'ARQUEOLÓGICA 2.0'*, Valencia, Spain, September 5–7, 2016 (Valencia: Editorial Universitat Politècnica de València, 2016).

and INDIRE launched the project “*Rome: Life in the Ancient City*”, where students “were engaged in historical scenes, boosting their involvement and retention of historical facts through this immersive method⁴⁰.”

Digital tools are not only making cultural heritage more accessible to younger generations but are also enabling broader public involvement in the protection and sharing of historical knowledge. By inviting individuals and communities to take part in the preservation process, these efforts are helping to create a more inclusive and participatory approach to safeguarding cultural heritage for future generations. In the following section, we will focus on how these advancements shape the future of heritage preservation and public engagement.

2.2 Fostering Community Involvement

The digitisation of cultural heritage has opened up new opportunities to democratise access to historical materials, allowing individuals and communities to contribute to actively creating and preserving digital content. Crowdsourcing, which taps into the collective knowledge of large groups through online platforms, has become an increasingly valuable tool for cultural institutions seeking to engage local communities in co-creating digital heritage⁴¹. By incorporating local insights and perspectives, these institutions enrich their collections and strengthen ties with the communities they serve. A notable example is the #iziTRAVEL Sicilia project, launched in 2016, which used digital platforms to involve more than 3,000 people—including students, teachers, and local institutions—in creating and sharing cultural content. By 2019, over 218 audio guides were produced, reflecting local knowledge and experience⁴². The project also introduced the “Hackable City” model, replacing the traditional “Smart City” concept, to actively empower citizens to participate in cultural initiatives through digital tools. This approach enhances cultural collections and fosters a more profound sense of community identity and a stronger connection to heritage. Residents, dubbed “digital Ciceros,” could create digital guides, contributing to long-term sustainability and promoting local cultural values⁴³.

These gamification projects, which integrate game elements into heritage preservation, encourage community participation through challenges, rewards,

⁴⁰ Samanta Mariotti and Nina Marotta, “Gioco e Storydoing: Strumenti Didattici per l’Insegnamento della Storia nella Scuola Primaria,” *Didattica della Storia* 2, no. 1S (2020): 609–627, <https://doi.org/10.6092/issn.2704-8217/11224>.

⁴¹ Luca Senatore, Arturo Gallozzi, Michela Cigola, and Rodolfo M. Strollo, “Citizen Science and Gamification for Cultural Heritage,” *Expresión Gráfica Arquitectónica* 39 (2023): 232–239.

⁴² Elisa Bonacini, *Museums and Forms of Digital Storytelling*, trans. Stephan Hassam (Rome: Aracne Editrice, 2022): 1–20.

⁴³ Elisa Bonacini, Valentina Noto, Stefania Camarda, and Cettina Santagati, “Digital Storytelling and Long-Term Participatory Strategies for a New Hackable Museum-Making Model: The #izi-TRAVEL Sicilia and the Ursino Castle Civic Museum Case,” *DigitCult: Scientific Journal on Digital Cultures* 4, no. 2 (2019): 1–14, <https://doi.org/10.4399/97888255301481>.



and tasks. They help raise interest in lesser-known locations and promote local tourism, but they require regular updates and maintenance to ensure their long-term functionality⁴⁴. Another significant strategy is using social media, which enables rapid dissemination of information and raises awareness about cultural initiatives. While social media can be considered a more superficial tool for engagement, its reach is vast. It allows institutions to target various audiences and maintain effective interaction with the public. As a result, cultural projects gain more visibility and engagement⁴⁵.

For example, the Italian project *#InvasioniDigitali* (Digital Invasions), launched in 2013, utilised gamification elements to engage the public in promoting cultural heritage through social media and digital technologies. Participants could organise “digital invasions” of cultural sites and share their experiences online, generating increased interest in cultural institutions. The creation of digital records and 3D models of artefacts, combined with interactive activities, motivated the public to participate actively, thereby supporting the promotion of cultural heritage⁴⁶. The Antonino Salinas Museum in Palermo used social media during its renovation (2012–2016) to maintain contact with the public, demonstrating that digital strategies can be effective even when institutions are physically closed. The slogan “Chiusi per restauro, aperti per vocazione” (Closed for renovation, open by vocation) emphasised that the museum, though physically inaccessible, continued to actively communicate online through platforms like Facebook, Twitter, and YouTube. Participation in initiatives such as *#MuseumWeek* and *#InvasioniDigitali* helped sustain public interest. At the same time, the creation of 3D artefact models and promotional videos contributed to a 23.5% increase in visitor numbers when the museum reopened in 2015⁴⁷.

The DIY (Do It Yourself) approach encourages communities to engage in the preservation and presentation of heritage independently. Communities can exchange experiences, learn new skills, and contribute directly to the conservation of cultural values⁴⁸. This approach gives people a greater sense of ownership and

⁴⁴ Samanta Mariotti, “Gamifying Cultural Heritage: Education, Tourism Development, and Territory Promotion: Two Italian Examples,” in *Handbook of Research on Cross-Disciplinary Uses of Gamification in Organizations*, ed. Oscar Bernardes, Vanessa Amorim, and António Carrizo Moreira (Hershey, PA: IGI Global, 2022): 418–444, <https://doi.org/10.4018/978-1-7998-9223-6.ch020>.

⁴⁵ Elisa Bonacini, *Dal Web alla App: Fruizione e valorizzazione digitale attraverso le nuove tecnologie e i social media* (Catania: Giuseppe Maimone Editore, 2024).

⁴⁶ Elisa Bonacini, Laura Inzerillo, Marianna Marcucci, Cettina Santagati, and Fabrizio Todisco, “3D #DigitalInvasions: A Crowdsourcing Project for Mobile User Generated Content,” *ISSUE 2* (2015): 1–12.

⁴⁷ Elisa Bonacini, “Il Museo Salinas: Un Case Study di Social Museum... a Porte Chiuse,” *Il Capitale Culturale: Studies on the Value of Cultural Heritage* 13 (2016): 225–266, <https://doi.org/10.13138/2039-2362/1225>.

⁴⁸ Sarah Baker, *Community Custodians of Popular Music’s Past: A DIY Approach to Heritage* (Abingdon and New York: Routledge, 2018), 1–22.

responsibility for heritage, ensuring long-term protection. Participatory initiatives often involve the public in research and documentation of cultural heritage, such as collecting local stories or creating “heritage maps” that capture the community’s collective memory. This strengthens the relationship between the community and its heritage, increasing participation in its preservation⁴⁹. The *Percorsi Biografici* project, carried out in collaboration with the municipality of Monforte San Giorgio and the University of Siena, is an example of such an initiative. Since its inception in 2018, the project has focused on mapping the historical features of Monforte San Giorgio from the Middle Ages to the present, with a key component being the collection of residents’ stories. A Geographic Information System (GIS) was used to geolocate historical buildings and streets, with information stored in an open database on the MediaWiki platform. In addition, architectural features were systematically documented using digital cameras, and residents’ stories were recorded via voice recorders and transcription software⁵⁰. The results were made available to the public through an interactive map in the *size.TRAVEL* application.

3. Gamifying Italian Heritage: *Father and Son 2* and *Humbria²O in Gioco*

As case studies of gamification and cultural heritage in Italy, the following games were selected: *Father and Son 2* from the National Archaeological Museum in Naples⁵¹, in collaboration with TuoMuseo, already briefly discussed before and *Humbria²O in Gioco*⁵², a project carried out with the contribution of the Umbria Region that involves eight municipalities and 14 museums. The final selection of these two games was a challenging decision, with other potential cases also being considered in addition to those already discussed in the introduction⁵³. Among them (and the list is far from being exhaustive), it is necessary to quote *Play Alghero*⁵⁴ *The Medici Game: Murder at the Pitti Palace*⁵⁵, *Ritorno a Deir el-Medina*⁵⁶.

⁴⁹ Duo-duo Zhang and Peng-ri Luo, “Research on Gamification-Based Tourism Experience Design for Cultural Sustainability,” *Packaging Engineering* 41, no. 14 (2020): 36–42.

⁵⁰ Samanta Mariotti, “Gestire la geografia della complessità, dai dati alle storie: Il progetto ‘Percorsi Biografici’ tra archeologia pubblica e rigenerazione urbana,” *Archeologia e Calcolatori* 30 (2019): 475–478.

⁵¹ Museo Archeologico Nazionale di Napoli, “Father and Son: The Game,” accessed November 16, 2024, <https://mann-napoli.it/father-and-son-the-game/>.

⁵² Coopculture, “Humbria²O in Gioco: Dei ed Eroi,” accessed November 16, 2024, <https://www.coopculture.it/it/prodotti/humbriaio-in-gioco.-dei-ed-eroi/>.

⁵³ See also Ludovico Solima, Maria Emanuela Oddo, Vincenzo Colaprice, and Andrea Campodónico, “Videogame, Gamification and Museums in Italy: An In-depth Quantitative and Qualitative Analysis,” *Economia della Cultura*, no. 3-4 (2023): 331–346, <https://www.economiadella-cultura.it/anno-xxxiii-2023-n-3-4/>.

⁵⁴ Play Alghero, accessed November 16, 2024, <https://playalghero.it/>.

⁵⁵ Comune di Firenze, “Progetto Firenze Game,” accessed November 16, 2024, <https://portalegiovani.comune.fi.it/urlnews/webzine/36866.html>.

⁵⁶ Indici Opponibili, “Videogioco Avventura Grafica Museo Egizio,” accessed November 16, 2024, <https://www.indiciopponibili.com/blog/videogioco-avventura-grafica-museo-egizio>.



The project *Play Alghero* from Alghero Foundation Museums Events Tourism, under the European project MED GAIMS Gamification for Memorable Tourist Experience⁵⁷, funded by the European Union under the ENI CBC Mediterranean Sea Basin Programme, saw the creation of 10 games in Alghero, five physical and five digital. This initiative actively involved citizens, cultural associations, and gaming professionals in crafting memorable tourist experiences, aligning with the project's aim of utilising gamification for enhanced cultural engagement.

The *Medici Game*, the first 3D video game dedicated to an Italian museum focused on the famous grand-ducal dynasty, is set in the splendid Sala Bianca of Palazzo Pitti and allows you to visit this room virtually. Through an interactive mystery narrative, it offers players a unique opportunity to engage with Florence's grand ducal history. *Ritorno a Deir el-Medina* provides a virtual exploration of the Egyptian Museum of Turin, inviting youngsters to discover notable exhibits such as the Tomb of Kha and Deir el-Medina. It exemplifies the use of digital technology to enhance educational outreach within museum settings. Furthermore, the project *PlayMarche: un Distretto regionale dei beni culturali 2.0*⁵⁸ from the Distretto Cultural Evolution delle Marche is aimed primarily at middle school students which involves the creation of a game on 12 cultural sites in the province of Macerata chosen following the indications of local authorities. These initiatives will uniquely engage audiences with cultural heritage through gamification, encouraging immersive and interactive experiences.

The choice of *Father and Son 2* and *Humbria²O in Gioco* was driven by their success and is in line with the methodology developed in the Heritage Game: Gamification Model for Community-Based Heritage Work: Selected Best Practices (No. 2023-1-PT01-KA220-HED-000154261) project⁵⁹.

This methodology focuses on gamification tools that engage communities, create sustainable impacts, and enhance cultural heritage work. Both games meet these criteria by fostering interaction with heritage and involving local communities. The first version of the game, *Father and Son*, was an enormous success with over 5 million downloads in the world and a broad geographical localisation of the users. The game has been a great success in China. Moreover, the game was highly appreciated among players who were no longer very young (55% of gamers are over 35 years old). Furthermore, the number of users geolocated in the museum (about 40,000) has exceeded expectations. The gameplay of *Father and Son 2* involves time travel to 79 AD in Pompeii before the eruption of Vesuvius, offering a unique experience where players return to the present as tourists, capturing images at the site of a family encountered in the past.

⁵⁷ ENI CBC Med, "MED GAIMS," accessed November 16, 2024, <https://www.enicbcmed.eu/projects/med-gaims>.

⁵⁸ Archeomatica, "Realtà Virtuale e Video Emozionali: La Gamification per il Turismo nelle Marche," accessed November 16, 2024, <https://www.archeomatica.it/ict-beni-culturali/realta-virtuale-e-video-emozionali-la-gamification-per-il-turismo-nelle-marche/>.

⁵⁹ Silviu Miloiu, Marusya Smokova, and Sergiu Musteață, eds., *A Gamification Model for Community-Based Heritage Work: Selected Best Practices* (Târgoviște: Editura Cetatea de Scaun, 2024).

Humbria²O in Gioco allows us to discover funnily and creatively key figures and protagonists (gods, Roman and Etrurian heroes, saints) of the Umbria Region. The game requires the collection of 30 figurines of gods and heroes of the Umbria Region. For each figurine, initially hidden, a short introductory text is presented that allows one to understand the historical context better. Some simple questions are then asked to unlock the figurine. The *Humbria²O* is a project for disseminating Umbrian culture and heritage that involves nine municipalities in the Umbria region with a unique collaboration model. Their website states that life was born from water (H₂O), and Umbria wants to start again from water as a founding element of its complex history. The strong involvement of municipalities was one reason for choosing this case study. Moreover, one remarkable aspect and characteristic of the game is that not only the most famous cities (Perugia, Assisi) are included in this game but also small cities of art with great cultural traditions but often outside the major tourist circuit and little known by the general public.

4. The Role of Gamification in Economic Development of Remote Regions

In the fight against poverty and social exclusion, Europe established a new shared goal: to remove more than 20 million people from poverty by 2020 and to cut the percentage of Europeans living below the national poverty line by 25%. Since the goal was not reached, it was updated to reduce the number of people living in poverty by at least 15 million (including at least 5 million children) by 2030⁶⁰. Other laws and initiatives have been developed for economic and social inclusion, such as the 2020-2025 gender equality strategy, the 2020-2025 EU anti-racism action plan, and the EU Roma strategic framework for equality, inclusion, and participation.

In line with the EU's strategic aims for economic development and prosperity of democracy, Acemoglu and Robinson⁶¹ propose the importance of inclusive political institutions, the strength and nature of social norms and informal institutions. In the long run, societies should secure property rights and egalitarian and inclusive political institutions that shape the institutional logic to enhance development. He exemplifies African countries, besides Mexico having substantial natural resources, against the USA, where the institutional logic and democracy did not perish at such a level⁶². Despite the widespread existence of coercive economic institutions, in this form or another, using forced labour in the broad

⁶⁰ S. Goodger and M. Makay, *Fact Sheets on the European Union, 2024*, accessed November 16, 2024, https://www.europarl.europa.eu/erpl-app-public/factsheets/pdf/en/FTU_2.3.9.pdf.

⁶¹ Daron Acemoglu and James A. Robinson, "Paths to Inclusive Political Institutions," in *Economic History of Warfare and State Formation*, ed. Jari Eloranta, Eric Golson, Andrei Markevich, and Nikolaus Wolf (Singapore: Springer Singapore, 2016), 3–50.

⁶² Daron Acemoglu, "Why Nations Fail?" *The Pakistan Development Review* 54, no. 4 (2015): 301–312, <http://www.jstor.org/stable/43831321>.



sense, at the expense of workers, cannot adequately invest in new technology, leading to creative destruction. Acemoglu, Johnson, & Robinson⁶³ consider colonial experiences as one of the many factors affecting institutions, and they compared the countries where settlement and creating the necessary institutions were the aim, like America, with the countries where wealth transfer was an aim due to high mortality rates. In colonial countries where wealth transfer was the option, these organisations did not protect private property well, and there were no safeguards against government seizure, thus leaving weak institutional legacies that persist today.

Based on the overlap of the EU's vision, strategies, laws, and regulations with Acemoglu's proposition on creating economic and democratic prosperity, this section discusses gamification as a tool for this aim. It must be noted that institutional logic cannot be changed in a day; broad historical, economic, and other exogenous factors shape them. What is being emphasised in this section is that gamification may be a promising instrument among many others for effective institutions, a developed economy, and an inclusive political arena. Gamification has dramatically increased involvement and collective awareness in various circumstances.

Moreover, gamification may be a promising tool to combat economic injustice and exclusiveness via behaviour-changing and teaching mechanisms. In remote areas where education standards are comparatively low to highly developed regions, gamification may lower the disadvantaged status of students. With basic computer skills and elements, the students will have the same chance in a learning environment created for a specific teaching aim. Lamrani, Abdelwahed, Chraibi, Qassimi, and Hafidi⁶⁴ suggest a method based on Montessori's Method utilising serious games for early childhood periods in rural areas.

Community-driven gamification is crucial for fostering collaboration and achieving more meaningful outcomes among participants. Various research underscores gamification's significant role in enhancing communal awareness and engagement. For example, Koroleva and Novak⁶⁵ demonstrated how gamification raised collective awareness of water-related sustainability issues. Similarly, studies by Devisch, Poplin, Sofronie, Hassan, and Hamari⁶⁶ highlight its potential to

⁶³ Daron Acemoglu, Simon Johnson, and James A. Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91, no. 5 (2001): 1369–1401, <https://doi.org/10.1257/aer.91.5.1369>.

⁶⁴ Rachid Lamrani, El Hassan Abdelwahed, Souad Chraibi, Sara Qassimi, and Meriem Hafidi, "Gamification and Serious Games Based Learning for Early Childhood in Rural Areas," paper presented at *New Trends in Model and Data Engineering*, Cham, 2018.

⁶⁵ Ksenia Koroleva and Jasminko Novak, "How to Engage with Sustainability Issues We Rarely Experience? A Gamification Model for Collective Awareness Platforms in Water-Related Sustainability," *Sustainability* 12, no. 2 (2020): 712, <https://www.mdpi.com/2071-1050/12/2/712>.

⁶⁶ Lobna Hassan and Juho Hamari, "Gameful Civic Engagement: A Review of the Literature on Gamification of E-Participation," *Government Information Quarterly* 37, no. 3 (July 1, 2020): 101461, <https://doi.org/10.1016/j.giq.2020.101461>.

elevate civic participation, pointing to its usefulness as a tool for urban planners to facilitate interactive and collaborative decision-making processes⁶⁷. Moreover, in another study aiming to understand the contribution of gamification, where the Australian Government's Department of Human Services supports welfare recipients transitioning from one payment to another, feedback data was beneficial in understanding the community's expectations and increasing engagement⁶⁸.

In addition, gamification can be used in community education. Different segments of society can be informed about a particular subject through simplified interfaces. Such applications, prepared from a multilateral perspective, can ensure that the general public is informed about the activities of the state, thus increasing the investment in science and technology in the long term. In such vein, a game designed by various stakeholders, local education authorities, the Spanish Polar Committee, the Spanish Army, and the Navy was introduced to secondary schools in the Region de Murcia, Spain, to increase pupils' awareness of Spanish research in Antarctica. One thousand seven hundred forty-one active students engaged in the initiative by addressing assignments and challenges weekly. The students' awareness of research in Antarctica and the collaboration of the Navy for this research reached one hundred per cent after gamification. The results of this project are expected to be long-term, and it can potentially affect the children's career choices⁶⁹. Gamification is used for entrepreneurship education⁷⁰, factory management education, and for gaining new talents for the Industrial Revolution 4.0⁷¹, circular economy⁷². Moreover, gamification has been found to increase firm

⁶⁷ Provides Ng, Yuechun Li, Shutong Zhu, Bingge Xu, and Jeroen van Ameijde, "Digital Common(S): The Role of Digital Gamification in Participatory Design for the Planning of High-Density Housing Estates," *Frontiers in Virtual Reality* 3 (January 5, 2023), <https://doi.org/10.3389/frvir.2022.1062336>.

⁶⁸ Sanat Kumar Bista, Surya Nepal, Cécile Paris, and Nathalie Colineau, "Gamification for Online Communities: A Case Study for Delivering Government Services," *International Journal of Cooperative Information Systems* 23, no. 2 (2014): 1441002, <https://doi.org/10.1142/s0218843014410020>.

⁶⁹ Antonio Pérez-Manzano and Javier Almela-Baeza, "Gamification and Transmedia for Scientific Promotion and for Encouraging Scientific Careers in Adolescents," *Comunicar: Media Education Research Journal* 26, no. 55 (2018): 93–103.

⁷⁰ Afsaneh Bagheri, Amin Alinezhad, and S. M. Sajai, "Gamification in Higher Education: Implication to Improve Entrepreneurship Education," paper presented at the *Proceedings of the European Conference on Games Based Learning*, 2019.

⁷¹ Fernando Almeida and Jorge Simoes, "The Role of Serious Games, Gamification and Industry 4.0 Tools in the Education 4.0 Paradigm," *Contemporary Educational Technology* 10, no. 2 (2019): 120–136. Oksana Zhukova, Vladimir Mandragelya, T. F. Alieksieienko, Anzhelika Semenenko, and Elena Skibina, "Digital Technologies for Introducing Gamification into the Education System in the Context of the Development of Industry 4.0," *Ingénierie des Systèmes d'Information* 28, no. 1 (2023): 141–147.

⁷² José Silva, Daniel Raposo, João Neves, Fernando Silva, Rogério Ribeiro, and Maria Eduarda Fernandes, "Gamification in Communicating the Concept of Circular Economy - A Design Approach," paper presented at *Advances in Ergonomics in Design*, Cham, 2021.



performance alongside knowledge creation and entrepreneurship orientation⁷³. However, gamification practices have only recently been introduced to the public. Thus, research fails to present the long-run effects such as long-run learning, behavioural change, and career choice.

Gamification is an accelerating factor in sustainable purchasing attitudes⁷⁴. Aiming to promote environmental conservation, Alipay's game module, Ant Forest, rewards its users for their sustainable behaviors like biking instead of using a car. When the scores of a gamer reach at a certain level for their sustainable choices, in collaboration with local non-governmental organizations a real tree is planted⁷⁵. 100 million real trees in Northwest China were planted as a result of the application. Napuro, a business simulation game aiming to teach the complexity of sustainability and its relevance for society, is an effective tool. According to 87% of respondents, playing the game improved their general level of subject-matter competence. It must be noted that the difference in learning stems from the students' motivation.⁷⁶

Finally, gamification has been demonstrated as an effective tool for sustainable tourism. It leverages tourists' responsible and ethical behaviour, brand loyalty, communication, and social interaction for sustainable actions. It creates an atmosphere where tourists, the local community, and employees may interact and develop good attitudes towards each other.⁷⁷ Other sectors besides the tourism industry have utilised gamification. For instance, 30 out of 56 banks in Italy have implemented gamification to increase customer loyalty.⁷⁸

⁷³ Desman Hidayat and Edi Abdurachman, "The Roles of Gamification, Knowledge Creation, and Entrepreneurial Orientation Towards Firm Performance," *International Journal of Innovation Studies* 6, no. 4 (2022): 229–237.

⁷⁴ Oksana Zhukova, Vladimir Mandragelya, T. F. Aliexsieienko, Anzhelika Semenenko, and Elena Skibina, "Digital Technologies for Introducing Gamification into the Education System in the Context of the Development of Industry 4.0," *Ingénierie des Systèmes d'Information* 28, no. 1 (2023): 141–147.

⁷⁵ Huang Miao, Mohamad Saifudin Mohamad Saleh, and Izzal Asnira Zolkepli, "Gamification and Sustainable Behaviour: A Case Study of China," in *Sustainability Communication across Asia*, 123–136 (Routledge, 2022).

⁷⁶ Lucia Gatti, Markus Ulrich, and Peter Seele, "Education for Sustainable Development through Business Simulation Games: An Exploratory Study of Sustainability Gamification and Its Effects on Students' Learning Outcomes," *Journal of Cleaner Production* 207 (January 10, 2019): 667–678. <https://doi.org/https://doi.org/10.1016/j.jclepro.2018.09.130>. <https://www.sciencedirect.com/science/article/pii/S0959652618328531>.

⁷⁷ Célio Gonçalo Marques, Inês Araújo, João Paulo Pedro, Claudia Pires da Silva Silva, Marta Dionísio, and Paula Almeida, "Game On: Future Directions for Gamification in/for Cultural," *Journal of Tourism and Heritage Research* 7, no. 1 (2024): 327–333. Adina Letiția Negrușă, Valentin Toader, Aurelian Sofică, Mihaela Filofteia Tutunea, and Rozalia Veronica Rus, "Exploring Gamification Techniques and Applications for Sustainable Tourism," *Sustainability* 7, no. 8 (2015): 11160–11189, <https://www.mdpi.com/2071-1050/7/8/11160>

⁷⁸ Valeria Roncone and Manuela Massari, "Gamification as a Customer Loyalty Tool: Evidence from the Italian Banking Industry," *Journal of Applied Finance & Banking* 12, no. 3 (2022): 1–15.

It has to be noted that gamification is just a tool to enhance economic development and egalitarian society while inheriting its paradoxes. For e.g., the gamification sector is heavily male-dominated, which may lead to stereotypical roles for both genders. The small firms in the industry found themselves caught between highly competitive market pressures associated with problematic work practices like the notorious “crunch” periods and the demands of the market, frequently seen as restrictive and filled with creativity-limiting regulations⁷⁹.

Conclusion

Gamification has proven effective in making cultural heritage more appealing to audiences, especially younger users, and increasing involvement and collective awareness. Video games and gamified applications allow visitors better to understand historic artefacts and sites through interactive educational elements. Initially designed for entertainment, video games have evolved into a recognised form of art that blends technology, design, and storytelling. In Italy, known for its rich cultural heritage, these games have become more serious, merging educational objectives with interactive experiences. Such projects enhance the understanding of cultural heritage and actively engage audiences in its preservation. Many of these games use geolocation to connect digital gameplay with physical sites, enriching the player experience and encouraging the exploration of cultural heritage. For example, in *Father and Son*, players unlock new levels by visiting the National Archaeological Museum in Naples, thus significantly increasing the museum's visitor numbers. Moreover, games like *Mi Rasna* require players to physically visit historical sites in Tuscany, Umbria, and Lazio, thus bridging the virtual gaming world with real-world locations. *Play Alghero* utilises geolocation to link cultural experiences with tourism as players visit landmarks in Alghero on the island of Sardinia. The *PugliaReality+* project enables visitors to explore prehistoric dolmens using mobile devices and 3D models, enhancing on-site interactivity. Similarly, *Tuscany+* extends this concept by offering AR and geolocated information, allowing players to view historical monuments directly on-site.

A crucial aspect of these games is the involvement of local communities. Residents, students, and the broader public often contribute their knowledge and experiences to the game's content, helping to enrich the local cultural heritage. In projects like *#iziTRAVEL Sicilia and Percorsi Biografici*, local communities helped create digital guides, 3D models, and historical maps, thus preserving local values. This collaboration between communities, museums, and tech companies leads to long-term sustainable projects that connect the digital and physical worlds. Equally important is the engagement of young people in these projects, who learn about history and culture through fun yet educational activities. Projects like *Humbria²O in Gioco* offer them opportunities to create educational materials and entertainingly explore the history, strengthening their connection to local

⁷⁹ Carlo Perrotta, Chris Bailey, Jim Ryder, Mata Haggis-Burridge, and Donatella Persico, “Games as (Not) Culture: A Critical Policy Analysis of the Economic Agenda of Horizon 2020,” *Games and Culture* 15, no. 8 (2020): 902–922, <https://doi.org/10.1177/1555412019853899>.



traditions. Digitization also opens new possibilities for broader access to heritage. Projects like *Uffizi Decameron* and *C.A.P.I.* enable communities to participate remotely, making cultural activities more accessible even to those who cannot physically visit the sites. Crowdsourcing and co-creation of digital content allow residents to contribute directly to the heritage preservation process, strengthening their connection to history and heritage and leading to greater involvement in its protection.

These projects demonstrate that gamification of cultural heritage can successfully address various challenges when supported by expert collaboration, innovation, and the involvement of local communities, leading to a sustainable model of heritage preservation. One of the main challenges is preserving historical accuracy, mainly when games focus on entertainment.⁸⁰ Projects like *Mi Rasna* tackled this challenge by involving experts from 55 museums and archaeological parks in content development, ensuring authenticity and historical accuracy. Technological and accessibility challenges, such as implementing augmented and virtual reality, can be complex and costly. The solution was the creation of mobile applications like *Tuscany+* and *PugliaReality+*, which allow a broader audience to access innovative technologies without the need for expensive equipment. Financial sustainability is another key issue for long-term projects, as they require significant investments in technology and updates. The game *Father and Son* offered an innovative solution by linking the digital world with physical museum visits, increasing visitor numbers and ensuring the project's financial sustainability. The digital divide and access to technology represent another challenge, particularly for less developed areas.⁸¹ The *Humbria²O in Gioco* project addressed this issue by engaging smaller towns and allowing residents to access cultural activities via mobile devices. Measuring the effectiveness of learning is also a challenging task, as games combine entertainment with education. In the *Mi Rasna* project, quizzes and interactive tasks were implemented to track player progress and assess their knowledge, thereby improving the educational process. These examples demonstrate that gamification can effectively address key challenges in heritage preservation while engaging diverse audiences. With continued technological advancements and collaboration, gamified projects offer practical solutions for making cultural heritage accessible and sustainable in the long term.

⁸⁰ Samanta Mariotti, "Serious Games and Archaeology: Rough Notes on Crafting Archaeological Data for Heritage Enhancement," in *Advances in Cultural Heritage Studies*, edited by Alexandra de Carvalho Antunes, Grigor Angliu, and Mariagrazia Bellanova, 217–234, *Contributions of the European Students' Association for Cultural Heritage* (Oeiras, Portugal: Mazu Press, 2020); Samanta Mariotti, "A Video Game for the Archaeological Park of Poggibonsi (Italy): Towards New Promotional and Educational Trends: Potentials, Challenges, and Perspectives," in *The Past as a Digital Playground: Archaeology, Virtual Reality and Video Games*, edited by Stefano Bertoldi and Samanta Mariotti, 91–104 (Oxford: Archaeopress Publishing Ltd, 2022).

⁸¹ Samanta Mariotti, "The Use of Serious Games as an Educational and Dissemination Tool for Archaeological Heritage: Potential and Challenges for the Future," *Magazén 2*, no. 1 (2021): 119–138, <https://doi.org/10.30687/mag/2724-3923/2021/03/005>.

Rezumat

Această lucrare examinează rolul evolutiv al jocurilor video și al aplicațiilor gamificate în promovarea și conservarea patrimoniului cultural în Italia. Odată cu integrarea tot mai mare a instrumentelor digitale în strategiile muzeale, instituțiile culturale au îmbrățișat aceste tehnologii pentru a implica un public mai larg prin experiențe interactive și imersive. Lucrarea explorează modul în care inovațiile precum realitatea augmentată și virtuală, combinate cu jocul educațional, transformă fructificarea moștenirii culturale. În plus, studiul evidențiază impactul acestor inițiative digitale asupra participării publice, angajamentului comunității și durabilității pe termen lung a eforturilor de conservare a patrimoniului. Prin explorarea studiilor de caz și revizuirea cercetărilor actuale, această lucrare încearcă să abordeze provocările și oportunitățile prezentate de transformarea digitală a instituțiilor culturale, luând în considerare, în același timp, impacturile potențiale asupra promovării patrimoniului în viitor.

Cuvinte cheie: gamification, patrimoniu cultural, implicare comunitară, conservare digitală

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