Documentary Heritage to Inspire Content Development: Game Jam Cases of "Wat Pho" and "Amundsen"

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Abstract

The mission of raising awareness of world heritages inscribed in UNESCO lists has been underway in many different forms. Heritage sites, museums and libraries are the main locations that traditionally attract people to visit to enjoy cultural assets. The virtual world has been pursued as another opportunity to further expand the efforts of promotion of cultural heritages around the world. Game-based learning and experience in world heritage and intangible cultural heritage for decades have gained visibility. This article looks into a beginning stage of video game development with the use of documentary heritage inscribed as UNESCO Memory of the World through investigating the case of game jams in the Republic of Korea. The nature of documentary heritage with its rich source of storytelling can be beneficial in both learning and entertainment.

Keywords

Introduction

Video games occupy a complex space in society. While concerns persist about the potential for violence to negatively influence players, particularly young people, there's no denying their immense cultural and economic impact. This impact stems from video games' unique ability to blend various disciplines – science, art, literature, philosophy, and even religion – into immersive experiences that tap into our emotions and allow us to explore fantastical worlds.

Beyond entertainment, games wield a powerful psychological force, shaping the emotions and perceptions of players, especially young people who are highly receptive to new information. This has sparked debates within the game industry, public spheres, and national policy circles regarding how games can be managed to ensure responsible representation of human experiences, including our ego, identity, social awareness, and worldview. Countries like China and South Korea, where video games have become a cornerstone of youth culture, have even implemented regulations to control playtime.

This evolving landscape has seen a surge in the development of games with a functional purpose, incorporating educational and training elements – a field known as "serious games." This trend attracts interest not just from developers, but also from academia, governments, and parents. It reflects a growing societal shift towards leveraging the power of games, now a dominant form of entertainment, for positive purposes beyond promoting violence and conflict.

This study delves into the potential of developing serious games based on documentary heritage, specifically in connection with UNESCO's Memory of the World Programme. Unlike World Heritage and Intangible Cultural Heritage, documented cases of industrial game development utilizing documentary heritage remain scarce. However, we can explore a recent example from South Korea. The Korea Creative Content Agency, a public institution dedicated to nurturing game developers, collaborated with the International Center for Documentary Heritage (ICDH) under the auspices of UNESCO on a game jam project to explore this very possibility.

Literature Review

The term "serious games" emerged in Clark Abt's 1977 book of the same name. It gained further traction through international initiatives like the 2002 Serious Games Initiative and the 2004 Serious Game Summit at the Game Developer Conference. Today, various countries actively support the development of these games. The US Department of Defense's "America's Army" serves as a prime example, demonstrating the effectiveness of games in military training and recruitment (Samčović, 2018, p. 609). Similarly, the non-profit Hope Lab's "Re-Mission," a free cancer treatment game for children, showcases the potential in healthcare. "Food Force," developed by the UN World Food Programme, boasts over 6 million users, highlighting the power of games in raising awareness about global issues (Tate et al., 2009). As Lee (2014, p. 185) aptly defines them, serious games are "non-entertainment games that appropriately combine entertainment, purpose, and education to achieve a specific goal."

Serious games rely heavily on well-crafted worlds. Developers meticulously construct the time and space where characters operate, shaping the player's experience (Blackman, 2022). This worldbuilding goes beyond aesthetics; it subtly influences the player through the spatio-temporal probability of the virtual world – the likelihood and flow of events. (Yu et al., 2012). These virtual environments often embed messages, both conscious and unconscious, within the behaviors and beliefs of the characters. For serious games to be effective, they need a stronger narrative component than traditional games. Lee (2014) emphasizes the importance of stories that evoke emotions in players, especially for games with specific goals. However, striking a balance is crucial. While a strong narrative is important, serious games ultimately aim to educate or train. Roussou (2005), Hlavacs (2014), and Sim & Chia (2014) all highlight the need for engaging gameplay mechanics to enhance player immersion. A well-developed plot structure is key to achieving these learning objectives.

Analysis suggests a connection between experiencing historical events in virtual spaces and fundamental human desires. Players familiar with historical facts can recognize unfolding events and even shape them as the protagonist (Kapell & Elliott, 2013). This direct experience fosters deeper empathy for the characters and the historical context. By making choices and witnessing their consequences, players actively engage with the narrative, leading to diverse outcomes.

These elements of immersion and enjoyment become crucial for learning and comprehending historical events through games (Chae, 2008, p. 38).

One key driver of growth in serious game development is the increasing support from national governments. Leading countries in the global serious games market, including the US, China, Japan, and Korea, are actively investing in infrastructure. This includes nurturing game creators, expanding high-speed internet access, fostering connections between the gaming industry and sectors like healthcare and agriculture, establishing job-training programs, and developing military training simulations (Serious Game Market, 2023). South Korea stands out in this regard. Since 2013, the annual Serious Game Conference has served as a platform for sharing success stories, discussing development strategies, and exploring future directions on a global scale. In 2024, funding for serious game production focusing on accessibility for disabled and elderly players was announced, along with promoting the use of games for preventative and therapeutic purposes (Korea Creative Content Agency, 2024).

The gaming industry itself is also a driving force behind the growth of serious games. Companies are increasingly recognizing the potential for social impact through game development, aligning these efforts with their corporate social responsibility initiatives (American Gaming Association, 2019). "Mia: Child of Lost Future," a 2021 release by Mo-on Company tackles climate change with a setting in a dystopian 2100 Earth where pollution has devastated the environment. Players take on the role of Mia, the last remaining child (the name "Mia" translates to "lost child" in Korean); guided by her grandmother's teachings on an old smartphone, Mia embarks on a journey to restore the planet's beauty through eco-friendly actions (Korea Creative Content Agency, 2021). More recently, June 2024 saw the release of "Crab God," a simulation game developed by Chaos Theory Games. This title sheds light on the pressing issue of ocean acidification. Players assume the role of a hermit crab, learning about resource management, environmental protection, and the impact of pollution on marine life through engaging gameplay (STEAM, 2024).

Research on serious games is experiencing a steady increase. As of 2024, South Korea boasts a staggering 1,193 research outputs on serious games, including 54 corporate reports, 171 books, 331 theses, and 634 academic journals (Research Information Sharing Service, 2024). This research fervor aligns with the booming serious games market. According to the Serious Games Global Market Report, the market is projected to surge from $9.71 billion in 2023 to a whopping $25.74 billion by 2028. This exponential growth is fueled by the integration of cutting-edge technologies like artificial intelligence, virtual reality, and augmented reality; additionally, the demand for serious games is skyrocketing across various sectors, including education, healthcare, corporate training, skill development, military applications, employee engagement, and productivity (Impactful Insights, 2024).

Public expectations for the potential of serious games are undeniably rising. Minecraft, the world's most recognizable serious game, lets players build their own worlds using virtual blocks,

fostering creativity and imagination. Players gather resources, solve puzzles, combat threats, and explore new lands, all within a captivating environment. Minecraft's success exemplifies the clear connection between games and education. Studies have shown that regular gameplay can improve depression symptoms in children (Gerhardt & Smith, 2020). Stark et al. (2021) found that the game enhances Hippocampal-Associated memory function in middle-aged adults. Unsurprisingly, educators are leveraging its potential, integrating Minecraft into classroom activities (Maleki & Jazdi-Motlagh, 2021).

A game jam is commonly referred to as "an accelerated opportunistic game creation event where a game is created in a relatively short timeframe exploring given design constraint(s) and end results are shared publically" (Kultima, 2015, p. 3). Another important aspect of a game jam is its creativity based on a grouping of developers gathering together within a limited time to plan and develop a new game from scratch with a common theme (Sewell, 2024). The goal of a game jam is to "design and develop a playable computer game or digital prototype for entertainment purposes or otherwise befitting a prescribed theme or topic" (Hrehovcsik et al., 2016, p. 1).

A game jam is a forum in which new people meet and develop a prototype of a game on a specific topic within a short period of time, usually 48 to 72 hours (Game Developer Marketing, n.d.). Vu and Bezemer (2020) from their empirical study on 1,290 game jams with 3,752 submissions found that game jams "foster creativity and the exchange of ideas by letting developers with different skill sets collaborate".

There is no official record of the first game jam, but the term has been around since the early 2000s, and it is believed that similar events were held, although they did not use the term "game jam". The oldest event is known to be Ludum Dare, which started in April 2002 as an event where game developers led by Geoff Howland gathered to create a game for 24 hours using a game engine they developed (Ludum Dare, 2017).

The combination of game jams and serious game development, so-called "serious game jam" has been explored in the concept of implementing sustainable development; Monument Valley II by Ustwo with the theme of forest conservation and ANNO 1800 by Ubisoft Mainz studio with the theme of settlement construction balancing environmental damages are typical examples in collaboration with international organizations including the UN Environment Programme (Gynther, 2021).

Methodology

This paper utilizes a qualitative approach to explore the impact of documentary heritage on game development. Our focus lies on the award-winning titles "Wat Pho" (2022) and "Amundsen" (2023), both inspired by inscriptions on the UNESCO Memory of the World (MoW) Programme's International Registers. Our research explores how narratives from the MoW Programme contribute to the games' storytelling, thematic depth, and player engagement. We analyze

data from official documents provided by UNESCO, Korea Creative Content Agency (KOCCA), and International Centre for Documentary Heritage (ICDH) under the auspices of UNESCO. Additionally, we incorporate interviews and other materials related to the game development process. This qualitative research with interpretation provides analysis and significance that lead to empirical knowledge (Bowen, 2009). This qualitative research, with a focus on interpretation, aims to analyze the significance of documentary heritage in game development.

Game Development and UNESCO's Heritage Initiative

UNESCO's cultural heritage programs increasingly emphasize serious game development as a tool for safeguarding heritage. In intangible cultural heritage, the Sami people of Sápmi offer a prime example, where game development is employed to enhance understanding of their cultural traditions and values, thereby fostering preservation efforts. This approach necessitates the creation of a digital database, which requires meticulous collection and organization of heritage data (Christie & Verran, 2013). Consequently, there's a growing trend to integrate storytelling about specific heritage sites with game development tools (LaPensée, 2017). By leveraging game development, these initiatives aim to boost community self-reliance and cultural sustainability through job creation (Laiti et al., 2020, 23).

UNESCO's cultural heritage projects often involve heritage rehabilitation. Developing countries and the Global South face significant challenges in heritage documentation, necessitating digital technology-based educational initiatives and international collaboration. Morocco exemplifies this need: faced with rising tensions, UNESCO and UNOCT collaborated on the MediWander mobile game to highlight Sousse's World Heritage sites and their history (UNESCO/WHC, 2021). Research indicates that serious games can enhance learning about cultural heritage compared to traditional methods like videos (Ye et al., 2020). This approach is also effective in regions like the Middle East, where games have proven valuable in conveying the culture and history of the Silk Road (Eshaghi & Afshar, 2021).

Game development utilizing UNESCO's cultural heritage primarily focuses on intangible heritage. This emphasis arises from several key reasons. Firstly, the intrinsic qualities of intangible heritage, encompassing diverse cultural expressions such as dance, craftsmanship, and music, make it highly valuable as educational material (Dagnino et al., 2015; Kim et al., 2019; Zhou et al., 2022). Secondly, incorporating these cultural behaviors into games facilitates intercultural communication between players and specific communities, thereby fostering international support for the preservation of cultural assets, particularly those of minority communities; consequently, there is a growing demand within the heritage community to leverage these opportunities (Dagnino et al., 2017; Wang, 2021; Grammalidis & Poulios, 2019). Thirdly, the digital preservation of cultural data integral to game development serves a dual purpose: safeguarding cultural heritage while contributing to the vitality of cultural communities (Alivizatou, 2021; Pistola et al., 2021; Dimitropoulos et al., 2018; Yang et. al., 2018).

Game jams in collaboration with UNESCO have not widely been explored, but Kenya took a leading role in an international project of game development to boost preservation and awareness-raising efforts. Held at the Kenya Heritage Training Institute in Mombasa County from August 28 to 30, 2018, this initiative was part of a broader UNESCO project aimed at preserving and promoting traditional games as living heritage. By transforming these games into digital formats, the project not only enhanced public awareness of cultural heritage but also bridged the digital divide (UNESCO Africa, 2018). Traditional games, as carriers of values like solidarity, fair play, and inclusion, have become a powerful tool for intergenerational learning and cultural exchange.

Despite the advantages of serious games, their development poses significant challenges. Firstly, unlike commercial games, serious games are often purpose-driven, such as for educational purposes. In educational games, elements that typically enhance immersion, like entertainment value, can sometimes conflict with their educational objectives. Secondly, serious games often struggle with public perception, as they are perceived to be less entertaining and thus lack broad appeal. Consequently, those game developers that rely heavily on governmental and other external funding can lead to limited profitability. Thirdly, there exists a common misconception among the public regarding the distinction between serious games and typical commercial games. Balancing public interest with commercial viability involves navigating factors such as the game's theme, its entertainment value, and its potential social impact. Fourthly, while significant efforts have been made to develop games based on UNESCO cultural heritage, the focus has primarily been on cultural and intangible heritage. There has been minimal exploration of using documentary heritage in game development, with a notable exception being the game jam hosted by the Korea Creative Content Agency (KOCCA) in 2023.

Considering the points outlined above, storytelling in games emerges as a pivotal element capable of leveraging advantages and mitigating challenges. Addressing the inherent purpose-driven nature of serious games, which may diminish their entertainment value, effective storytelling can enhance enjoyment while fulfilling the game's intended objectives through creative narrative construction. Existing research and support for serious games have predominantly focused on technical aspects and quantitative expansion of development efforts. However, there remains a gap in research aimed at enhancing the qualitative aspects of game development with the use of documentary heritage for world-building and character design.

Therefore, this study investigates how narratives drawn from UNESCO's Memory of the World (MoW) Programme contribute to the storytelling process—an essential component of game development. It does so by analyzing case studies from the winners of the Korea Game Jam, namely 'Wat Pho' (2022) and 'Amundsen' (2023). These games exemplify the integration of cultural heritage narratives into gameplay, illustrating their potential to enrich both the thematic depth and player engagement within serious games.

Game Development on the Documentary Heritage

"The Epigraphic Archives of Wat Pho"

The Korea Creative Content Agency (KOCCA), the central agency for the content industry in South Korea, started the game jam project in 2015. The project initially targeted developers in the game industry but changed its appeal to teenagers in 2017. Currently, as the game jam format has become established in South Korea, the project has been reorganized to focus on supporting the development of serious games and the promotion of e-sports (H. S. Kwak, personal communication, December 13, 2023).

In 2022, the Ministry of Culture, Sports, and Tourism and KOCCA organized a Gamejam from August 19 to 21 in Dongbu Changgo (East Warehouse) where a cigarette factory was repurposed as a cultural complex in Cheongju City, the Republic of Korea. This event targeted high school students who are interested in game development, including planning, artistic design, and programming. 100 participants aged from 17 to 19 were gathered for the three-day joint activity. On the first day, the young developers were grouped with 5 persons and presented their plan. On the second day, they engaged in game development, and some supportive measures including mentors participated to assist their projects. On the last day, the works were showcased and the prizes were awarded.

The storytelling for game development was based on 432 items of world's documentary heritage inscribed in UNESCO's Memory of the World International Register. In 2022, 14 games were developed with the contents motivated by documentary heritage. The extent to which the storytelling based on documentary heritage affects these games differs, but most of them have backgrounds whose expressions are coming from unique stories of documentary heritage. For example, Suez Canal, developed by one developers' group, is an adventure game with a player as a protagonist fighting against enemies in the Suez Canal. The enemies are aliens with spaceships, which does not have any connotations of historical backgrounds, but the canal is the spatial setting of the documentary heritage that affected the developers in their game making.

The game "Wat Pho" was selected as the grand prize. As the name suggests, the game was inspired by Thailand's documentary heritage "the Epigraphic Archives of Wat Pho." Located in Bangkok, Wat Phra Chetuphon Vimolmangklararam Rajworamahaviharn, simply known as Wat Pho, is the highest grade of the royal temples in Thailand. The temple is known for the largest collection of Buddha images in the country, including the gigantic statue of the Reclining Buddha. This popular tourist location with a million visitors annually boasts the Epigraphic Archives of Wat Pho (Temple of the Bodhi Tree) inscribed as UNESCO's Memory of the World in 2011, a collection of 1,431 stone inscriptions made for a decade from 1831 (Thai National Committee on Memory of the World Programme of UNESCO, 2010, p. 1). The documentary heritage expressed in drawings, paintings, and sculptures deals with a wide range of knowledge

accumulated by global exchanges, including religious and secular topics. Wat Pho is considered one of the oldest educational institutions in Thailand, where the knowledge of Thai massage based on the traditional medicine and medical practice began to disseminated. Such practice is recognized as UNESCO's Intangible Cultural Heritage, and one of the illustrations in the medicine pavilion is also included in the collection of documentary heritage.

Wat Pho is believed to have been constructed in the 17th century in the Ayutthaya period and later reconstructed in 1795 by Rama I who founded the current Chakri Dynasty. During its restoration and expansion in 1831-41 under Rama III, the temple came to be decorated with ceramic tiles, mural paintings, stone sculptures, and wood carvings. At the same time, inscription of texts on various subjects was also carried out. They include the history of Wat Pho's construction and restoration, Buddhist images and scriptures, literature, names of places in Siam and tributary states with ethnic groups, moral teachings, royal customs, and texts of medicines and massage (Thai National Committee on Memory of the World Programme of UNESCO, 2010, pp. 2-4).

The significance of the Epigraphic Archives of Wat Pho has been recognized by UNESCO's Memory of the World Programme. First, the form of archives is unique in a way that they are mostly made on walls of the temple for public display. This is particularly important for the purpose of the Programme, since the world's documentary heritage has served, not only as a trigger for accumulation of knowledge, but also development of human civilization through spreading knowledge and openness to all. Second, the knowledge contained in the archives contributed to universal understanding of health and related practices. For example, Thai Yoga with medical information and massage therapy came into being through the archives, and the widespread practice across the world with attention to physical and emotional healing to a large degree has been attributed to teaching from the archives (Thai National Committee on Memory of the World Programme of UNESCO, 2010, p. 4). Third, Thailand's understanding of worldview in the past showcases the cosmopolitan setting with international exchanges, which has brought out awareness of the global community. The archives in 32 statues of 32 ethnic groups or nationalities of Asia and Europe with short descriptions in 16 pavilions represent such understanding. Further, as a result of international trade and exchanges, an Indian epic, the Ramayana, and a Persian literature, the Shahnameh, were inscribed in Wat Pho to describe ideal kingship.

The time and place that resulted in the emergence of Wat Pho inscription represents the turbulent years of change in Thailand. Under King Rama III's reign (1824-1851), Siam was faced/confronted with the beginning of western colonial expansion into Asia right after the end of the long wars with Burma, which had to abandon its war against Siam due to the invasion from Britain and its annexation. Even before this, the location of Wat Pho itself was the center of the war between Ayutthaya and France from 1688 to 1703. In this sense, Wat Pho, with its history of creation and renovation for decades, represents transformation of a battlefield to a land of

prosperity with cultural traditions and knowledge, including religious (spiritual) teachings and physical (secular) instructions for a better life (Thai National Committee on Memory of the World Programme of UNESCO, 2010, p. 6).

The game screen is divided into a grid, with various enemy creatures scattered across it. Each enemy is equipped with a health bar depicted by a red line above it. A timer at the top of the screen tracks elapsed gameplay time. The player's interface at the bottom of the screen displays four differently colored stones or runes (blue, red, gray, and green). The background features a dark, dungeon-like ambiance with stone walls, complemented by two flame torches at the bottom, enhancing the atmospheric setting.

The game mechanics are straightforward: players navigate a square, dark, checkerboard-like arena in the shadow of the Wat Pho temple, where colorful, slime-like monsters descend. In response, players defend against waves of these creatures by strategically using the stones inscribed with the Thai alphabet at their disposal. Each stone's unique color and number determines its power and range. Upon using a stone, it is randomly replenished with a new one over time. Despite players' efforts to defeat enemies, new adversaries continually emerge, requiring strategic thinking to prevail. This gameplay structure mirrors the intensity of aerial combat games, demanding continuous engagement to succeed.

Figure 1. Screenshot of "Wat Pho" (Korea Creative Content Agency, 2022). Screenshot by Junsu Seo.

"Roald Amundsen's South Pole Expedition"

The annual Gamejam event was also held in August 2023 by KOCCA at Gyeonggi Game Meister high School where young students from 17 to 19 are trained to become game developers. With the same purpose suggested in the previous years, the 2023 Game Jam changed its participants

by targeting those who aged from 20 years old (born in 2004) to 30 (born in 1994) (KOCCA, 2023). 80 participants with 16 in planning, 16 in programming, and 48 in art designing were selected, reflecting the previous year's difficulty that suffered from the lack of art designers during the game development. In the event the mission was proclaimed by saying "Disseminate the knowledge of World's Documentary Heritage." The 2023 Game Jam produced 12 different games based on the storytelling of documentary heritage.

 In that year, the game "Amundsen" was selected as the grand prize. Through the study on "Roald Amundsen's South Pole Expedition", the team came to create the game based on understanding the significance of documentary heritage. The team saw that the value of the record in the contemporary perspective had three points. First, they pointed out that the original document has been preserved that recorded the first South Pole expedition. Second, the expedition was recorded as a film, whose rarity exists with its moving images with sound. Third, the film about expedition in the past is the only one left today.

The motivation of creating the game by the team was the combination between understanding value (education) and entertainment. They agreed that the/an important mission of the MoW Programme is to deliver the content to future generations. In this case, they focused on some basic knowledge for players - when and how the first expedition took place, and who were the people that arrived at the South Pole for the first time. This purpose led them to organize the structure of the game development.

The setting of the game is based on adventure where the player assumes the role of a protagonist by exploration and problem-solving. In a winter land with heavy snow, Admunsen and his team wearing different jacket colors move forward by observing, jumping, riding a sled, and warming themselves at the fire. The game has four stages, and players can see the real images of documentary heritage after finishing each stage. In other words, players experience the South pole expedition through arriving at the destinations (stages) and commemorate the arrival as memory with the film records.

The developers created five different characters that have different functions and roles in the game to reflect the historical background that the five members of the Roald Amundsen team hads. In the game, players are encouraged to use their characters to deal with each stage in order to reach the finish line at the destination. For example, Roald Amundsen in the game has an ability of reducing the speed of health points (HP), reflecting that he was the leader of the team. Helmer Hanssen, one of Amundsen's polar expedition members, has an ability of looking beyond the scene, reflecting that he was a navigator.

Another important mechanism that makes players incorporate the concept of documentary heritage is the setting of the game. The game sets the goal of each stage as "collection of film", which means that the completion of each stage becomes a film of their expedition record. In the game, players are able to see some photos of the actual image of the documentary heritage after they finish each stage. In this way, the game provides educational learning about the South

Pole Expedition through role-playing – becoming Roald Amundsen and visually experiencing the area by having a chance to see the real images of the documentary heritage.

Figure 2. Screenshot of "Amundsen" (Korea Creative Content Agency, 2023). Screenshot by Junsu Seo.

Figure 3. Screenshot of a digitized image of "Roald Amundsen's South Pole Expedition" in the game "Amundsen" (Korea Creative Content Agency, 2023). Screenshot by Junsu Seo.

Potentials and Challenges

Game jams are all about creativity under pressure. However, for this particular jam, the lack of prior information about the "Memory of the World (MoW) Programme" presented a unique challenge to participants. The surprise theme injected excitement but also caused a frantic scramble for information once the clock started ticking. For example, finding details about Thailand's documentary heritage, particularly iconic landmarks like the Wat Pho temple, proved especially challenging due to limited online resources and a language barrier (mostly Thai with some English).

To bridge this gap, the International Centre for Documentary Heritage (ICDH) under the auspices of UNESCO provided crucial details about the documentary heritages and the MoW Programme, helping developers create compelling narratives and backgrounds for their games. This intervention proved essential, allowing developers to produce impactful experiences despite the tight timeframe. Participants expressed that, with access to detailed descriptions and backgrounds of specific archival elements, they could have crafted even more immersive games (S. Kim, personal communication, April 26, 2024).

Game jams typically evaluate developers based on the completeness of their creations within a tight timeframe. In this context, documentary heritage can be a valuable tool for creating compelling narratives and worldviews for games. However, there's a fine line to tread. According to the 2022 KOCCA Game Jam Winner Sunghoon Kim (personal communication, April 26, 2024), overloading developers with background information can stifle creativity. For them, the core game experience (fun and entertainment) takes priority over educational value or historical accuracy.

Striking a balance between education and entertainment remains a challenge, even in games with educational goals. This raises the question: to what extent background information can be provided without hindering creative freedom? While documentary heritage and educational elements can enrich games, an overemphasis on them could be detrimental to developers crafting truly original experiences.

Compelling narratives can significantly elevate a game's value. Rich backstories and engaging plots can deeply immerse players, especially in titles with stages or levels, unlike simpler games. Documentary heritage provides a treasure trove of material to enrich various development aspects like world-building, progression mechanics, and even playtime.

This impact is evident. All 26 games created in the 2022 and 2023 game jams incorporated storytelling inspired by the Memory of the World Programme. These games not only offered players a unique way to engage with historical content but also sparked an interest in exploring the Memory of the World further. Players can find themselves actively seeking information after experiencing the games.

Games based on documentary heritage transcend mere entertainment. They act as powerful mediums for fostering intercultural understanding. Through immersive gameplay, players encounter and learn about diverse cultures, religions, philosophies, and languages. In this way, documentary heritage games built upon Memory of the World elements become a double win. They not only offer engaging experiences but also serve as educational tools, promoting cultural appreciation alongside historical knowledge.

Documentary heritage games hold immense potential, but several hurdles hinder their wider adoption. Firstly, accessibility is a key issue. Game development often flourishes in specific countries with established infrastructure – widespread computer use, reliable internet access, and dedicated platforms. In regions lacking these resources, creating documentary heritage

games becomes a significant challenge.

Secondly, even within established game development hubs, cultural heritage themes can face neglect. South Korea, for example, boasts a strong academic system for game development, but many young potential developers rely on practical experience rather than formal education. Private institutions and individuals become their go-to sources, often at a significant financial cost. This highlights the need for a more integrated ecosystem that fosters learning and production of culturally-themed games within academic settings.

Thirdly, public awareness remains a barrier. Many people are simply unaware of the potential for cultural heritage to be a captivating source of storytelling in games. Without basic knowledge of the Memory of the World, it's difficult to ignite the spark that could lead to a broader dissemination of knowledge through games.

Conclusion

This paper delves into game development inspired by the Memory of the World Programme, a collaboration between the Korea Creative Content Agency and ICDH under the auspices of UNESCO. Our focus is on games created in 2022 and 2023. Instead of demanding extensive resources and time, these projects embraced the developers' capabilities and the provided content within a limited timeframe. We specifically explore the potential of these games as "serious games" that leverage documentary heritage, with a particular focus on the award-winning titles from each year.

Game jams have revealed the immense potential of documentary heritage as a source for game development. With vast resources still being poured into the entertainment industry globally, the future of game development holds immense promise for expansion. Here's where documentary heritage shines. Unlike many game genres, "serious games" engage players in a deeper way. They encourage players to think critically and make decisions within the virtual world, leading to meaningful outcomes.

Virtual experiences through games on documentary heritage are built upon the foundation of real human societies. These games go beyond mere entertainment; they offer a portal to another world. Through experiencing, interacting, and learning within the game, players gain a deeper understanding of different cultures. In essence, games can be seen as virtual societies, mirroring real-world human interactions and communication, including economic transactions. The rich tapestry of stories found within the Memory of the World Programme provides a unique window into these virtual societies, fostering cultural understanding.

While game jams have showcased the potential of documentary heritage, several hurdles remain. Lack of dedicated policies, manpower, and funding constrain these projects. As with other UNESCO Memory of the World initiatives, promoting the intrinsic value of game development as content creation, beyond relying solely on goodwill, is crucial.

The potential extends beyond serious games. Popular titles like Blizzard's Diablo demonstrate

that themes from the Bible (good vs. evil, physical vs. spiritual, war vs. peace) used to build an engaging virtual world have attracted millions of players without resorting to a strict replication of religious concepts. Documentary heritage, rich with diverse cultural assets across time and space, offers a treasure trove waiting to be explored. It holds the potential to create virtual worlds that are yet to be discovered, pushing the boundaries of what's possible in gaming.

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