Please, Touch the Artwork: How a Video Game can become an Extension of a Museum Exhibition

What interactive and immersive elements of the video game Please, Touch the Artwork 2 can create an enjoyable and nuanced experience of art?

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ABSTRACT

Please, Touch the Artwork 2 is a free cozy hidden-object video game in which the player is not only allowed, but encouraged to interact with the artworks presented. With its interactive and immersive elements, in which the player is free to roam through James Ensor's paintings, the game provides a nuanced and enjoyable experience of the artworks which goes beyond what static, "traditional" museum exhibitions can offer. If in a visual art exhibition it is only possible to observe an artwork, and often not closely, *Please, Touch the Artwork 2* offers the possibility to feel immersed with the art, closely observe the details, and interact with the environment and the characters within it.

Although video games are an increasingly utilized and relevant medium in modern society, they are still severely understudied in the context of how they can become extension of museum exhibitions. This thesis aims at contributing to this field by researching which interactive and immersive elements of the video game *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience that allows players to engage with art in ways that extends beyond the experience of a traditional museum exhibition. To answer the research question, a qualitative content analysis of the case study was conducted. The main theories utilized to construct the theoretical foundation of this thesis are based on key concepts related to interactivity, immersion and flow in video games, specifically from known scholars such as Brenda Laurel and Mihaly Csikszentmihalyi, together with the relevant theories of Mata Haggis-Burridge. A comprehensive coding tree and codebook were constructed based on the scholars' theories to conduct a rigorous content analysis of the data retrieved through annotations and screenshots of the game. The qualitative content analysis showcased three emerging themes, which are key to answering the research question. As will be discussed in this dissertation, it is the character interaction, the environmental interaction and immersion and the flow elements which contribute to creating an enjoyable and nuanced experience of art which goes beyond the limitations of a traditional museum exhibition. Thus, effective

game design combined with interactive and immersive elements, such as engaging characters and immersive virtual worlds, are key elements that *Please, Touch the Artwork 2* can create to allow visitors to experience the artwork in a nuanced and enjoyable way.

KEY WORDS: video game, museum exhibitions, interactivity, immersion, flow

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Chapter 1: Introduction

"Please, touch the artwork" is a phrase that no one would expect to see on a plaque in a traditional museum exhibition. When one goes to a fine art museum, especially one with paintings or murals, touching or changing the artworks is often seen as a deplorable act, and if one were to attempt doing it they would be admonished against it or even arrested, depending on the eventual inflicted damage. This carefulness is for good reason: artworks such as paintings are often old and fragile, and would get easily run-down and damaged if the public was allowed to touch them. In order to best protect them and to preserve their longevity, paintings must remain untouched and kept under specific conditions; only specialists, such as art restorers, are allowed to be in close contact with the canvas. Therefore, a visitor to a museum is only allowed to observe the artwork, which creates a rather static experience; as Steven Brown observes in his book *The Unifications of the Arts* (2021), "the visual arts achieve a form of public display that is comparable to performance, but that they do so in the static (and durable) manner of *exhibition*, as compared to the dynamic (and ephemeral) manner of a performance" (Brown, 2021). This static nature of museum exhibitions, particularly those related to visual and fine art, limits the interaction between visitors and the exposed paintings, which might become a challenge in an age of widespread technology where interactive and immersive experiences are becoming the norm. Thus, in recent times, museums are starting to adapt in order to stay relevant in modern society and to gather to a wider audience. In this context, we see the increased popularity of interactive art experiences; "multisensorial" art shows with music and projected moving artworks are becoming on the rise around the world, together with virtual exhibitions and Instagram museums. Even within the more 'traditional' museum exhibitions the desire for a more immersive and interactive experience is being gathered to, for example with elements that are considered proper of the game experience. What is referred to as "gamification" is the introduction of game-like elements to environments that are not necessarily related to games; for example, people gamify their to-do lists by utilizing apps that give virtual rewards when done. The opportunity of implementing gamification is also appreciated by various businesses, which are introducing gamified experiences to the workforce to better engage

their employees or clients. (Hamari, 2019) Museums are one of the environments in which gamification is becoming increasingly popular, and is utilized as a tool to make education more engaging, active and playful. Some museums, such as science museums, have already incorporated these elements a long time ago; however, even fine art museums are now including elements such as Virtual Reality (VR) and Augmented Reality (AR), in which the audience can use VR headset or AR apps to interact with the artworks. Educational games blended within the physical exhibitions are also becoming increasingly popular, especially for younger audiences and children. (Du, 2021) Overall, the static nature of museum exhibitions is slowly starting to change towards a more engaging and active experience by making an effort to be more attractive to wider -and younger- audiences by integrating interactive elements and game-like features. Through gamification, museums support active learning by engaging with the artworks presented, which motivates audiences to frequent their exhibitions more often. (Ćosović & Brkić, 2019) Overall, the gamification of museums is a technique which has been increasingly utilized and studied; however, there is still a lack of social and academic attention towards how video games themselves can become an extension of a museum exhibition.

1.1 Relevance and Research Question

Museums are at the core of our cultural and historical preservations. They play a significant part in our leisure activities and not only contribute to the flow of tourism, they also can become touristic hotspots themselves (Frey & Meier, 2006). Customer spending within and outside museums, such as for admission fees, restaurants, gift shops and souvenirs, have a significant impact on local economies (Frey & Meier, 2006). However, these institutions are facing the challenge of a new, technology-centric world; in today's competitive landscape, they need to attract diverse audiences with new and engaging strategies. In order to bring in significant numbers of people, museums all over the world are experimenting with different strategies, such as gamification, to diversify their exhibitions – and their audiences-. In this context, this research aims at providing and contributing to a deeper understanding of the world of video games in relation to visual and fine art museum exhibitions. Although there is sufficient research on the introduction of game-like features in museums - what is referred to as the 'gamification of museums', there is a literature gap on how video games can aid museums and even become an extension of an art exhibition. In the present world, where museums often feel the need to modernize, diversify and adapt, video

games might represent a solution to make the art more accessible and engaging to a wider audience. For example, museums struggle with attracting younger audiences, which are often more used to the fast-paced interactive world of video games. (Beavis, 2015) Researching the role and connection of video games to museum exhibitions does not only contribute to expanding the knowledge in academic context, but it may also provide a starting point for future development and applications of the knowledge in the creation of video games to aid museum institutions and static art exhibitions.

Video games are characterized by their interactive and immersive elements, which creates an enjoyable experience that appeals to users of all kinds. Since their first appearance in 1958, video games have become increasingly popular, surpassing, in recent years, industries such as the movie industry in terms of frequent users. In 2020 alone, the reported amount of video games in the world approximated to 2.69 billion, with a steady increase of a predicted 5.6% per year (Gilbert, 2020). Though they have become increasingly important mediums in the context of museum exhibitions as well, the main academic and practical focus remains on the game-like elements and not the video games themselves as mediums. However, with their effective capabilities of offering an immersive and interactive experience to their players, they may showcase relevant features that could potentially become a powerful tool in the context of museum exhibitions.

The benefits of utilizing video games as a way to complement traditional exhibitions are many; for example, it would allow audiences to be even more engaged and it would give them infinite new possibilities to approach the artworks. For example, they may create the context in which a painting was done, or the possible surroundings of the artwork showcased. They may also create immersive experiences through sounds and haptic feedback which is more accessible to visually impaired people, and so on. These features could bring an increased affluence of people, including but not exclusively the demographic interested in video games, to museum spaces. Furthermore, video games could become a medium for museums to advertise themselves and to remain relevant, a strategy which was used in several occasions already, especially during the Covid pandemic [1]. Finally, having a digital counterpart of existing paintings could provide a surprising way to preserve them in an easily accessible way. If paintings can degrade and are more prone to damages, a virtual game containing the paintings can remain in the virtual world possibly forever, which could aid

[1] See the Met collaborating with Nintendo for an example https://www.metmuseum.org/articles/animal-crossing-new-horizons-qr-code

restorers, scholars and interested people alike. Finally, a video game offers the possibility of showcasing all relevant paintings of, for example, a specific painter or era, which is often not the case in traditional museum settings, unless there is a special -but temporary - exhibition. Overall, studying how video games can become an extension of museum exhibitions becomes of great importance as they may offer many benefits to museums in ways that are still to be discovered and studied. This dissertation hopes to add a new perspective to this field by focusing on a specific case study: the video game *Please, Touch the Artwork 2*. The overall aim of this dissertation is to explore which interactive and immersive elements of the case study can create a deeper and different experience of art for a player. In other words, the research question for this paper is: which interactive and immersive elements of the video game *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience that allows players to engage with art in ways that extend beyond the experience of a traditional museum exhibition?

1.2 Introduction to the main concepts

The research question touches upon three main elements: interactivity, immersion and flow. These three terms are strictly related to video game studies, and will be utilized in the context of the case study, the video game *Please, Touch the Artwork 2*. The interactive elements that will be researched are directly related to in-game features connected to the story, game mechanics and virtual environments of the game itself. Interactive elements in general are defined by in-game features that actively engage the player by demanding immediate input, quick thinking and -often- real-time reactions (Bowman, 2021). Immersion is closely related to interactivity, as will be discussed in this dissertation, and refers to the sensation of being "in" the game that a player feels by losing sight of the surrounding world (Goethe, 2019). Flow, as will be argued in the Theoretical framework chapter, refers to the ultimate state of enjoyment that a person may experience when pursuing a challenge that matches their skill level (Csikszentmihalyi, 1990). Though flow is a concept that stems from psychology studies, it is known and used in video game studies, which more often than not are rich in features that may induce a sense of flow, such as clear goals and immediate feedback. As interactivity, immersion and flow are rather complex topics, more thorough definitions will be provided in the theoretical framework.

The definition of a museum exhibition as traditional may vary based on the geocultural and the historical context; therefore, it remains of high importance to clearly

define it in the context of this research. This research is focused on fine art museums and based on the assumption that the museum experience is ever-evolving. As a consequence, the term traditional may look different for people more acquainted with technology or scholars reading this dissertation in the future. In this specific case, when talking about a traditional museum experience, the focus is on a physical visual art exhibition, in which artworks, such as paintings, are "confined to fixed spaces, preventing visitors from closely interacting with or appreciating intricate textures" (Tian et. al., 2024). Therefore, the artworks can only be observed from a safe distance. Furthermore, in a 'traditional' exhibition, not all of the artifacts related to a painter or a theme are present, as often they are distributed across various physical museums (Tian et. al., 2024). In this case, we refer to fine-art exhibitions which showcase artworks, such as paintings, that cannot be touched and are not interactive. If one were to answer this research question in the context of, for example, a science museum -which are known for having many interactive elements-, it would have an entirely different answer. Therefore, it is important to approach this dissertation with the provided definition of what a traditional museum exhibition is in this context.

1.3 Introduction to the case study

Please, Touch the Artwork 2 is an indie video game developed by Thomas Waterzooi in collaboration with Meyen Studio, first released in January 2024. The game is a hidden-object game, in which the main purpose is to find hidden objects within paintings; the mechanics are similar to the popular game *Where's Waldo?* in which the player has to locate the character Waldo in intricate and densely illustrated scenes. In *Please, Touch the Artwork 2*, the player will play as the skeleton of James Ensor, a renowned Belgian painter active in the late 19th century and beginning of the 20th century. This video game is a homage to the painter, and was created in honor of Ensor's 75th anniversary from his death. In the game, the player is invited to explore the landscapes, still lives and vivid scenes that James Ensor painted in his lifetime; in addition, the player can interact with the characters within the paintings, which will have specific requests that must be fulfilled, and will have to uncover the motive of a mysterious masked villain slashing canvases thought the game. The game is divided in chapters, starting with the 'Prologue' and a final section named 'The End'; even though the player can potentially skip a part, the chapters are in numerical order and the player is encouraged to play them all to unlock the final chapter. Thomas Waterzooi, the game developer, based the entirety of the environments on the real-life paintings made by

James Ensor, which Waterzooi could access through online resources and the KMSKA museum in Antwerp. Even some of Ensor's musical compositions were integrated in the soundtrack. To ensure that it could be easily accessible, the developer made the game entirely free on all the platforms it was published upon, with the promise to keep it free for the time being. The developer decided to keep it free to allow as many people as possible to learn about James Ensor's life and works of art. As a result, this video game is easily accessible, easy to play and, because of its close resemblance to a museum exhibition, has been chosen as a case study for the research question at hand.

1.4 Chapter overview

This section will briefly illustrate the chapter overview utilized to answer which interactive and immersive elements of *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience of art, which extends beyond a traditional museum exhibition. Apart from the Introduction, the dissertation is organized in four chapters: Theoretical framework, Methods, Analysis and Results and Conclusions. The following chapter, called Theoretical Framework, will introduce the theories utilized to build a theoretical framework, and will mainly focus on the theories of Brenda Laurel, Mihaly Csikszentmihalyi and Mata Haggis-Burridge. Based on the scholar's theories, the theoretical framework will function as a foundation to construct the a-priori code through the operationalization of the theory at hand, a process which will be discussed in the Methods chapter. The Analysis chapter will showcase the process of analyzing the case study, and will be accompanied by a selected number of screenshots and comments relevant to the code utilized, which will aid the discussion of the results. Finally, the Conclusion chapter will give a comprehensive overview of the most relevant findings of this dissertation, together with the limitations and suggestions for future research.

Chapter 2: Theoretical Framework

2.1 Introduction

This chapter will showcase the foundation upon which this qualitative research is based; it will provide an overview of the theories utilized in this master dissertation for the construction of the coding tree and for the content analysis. I will review and utilize the relevant existing literature on related topics in order to answer which interactive and immersive elements of *Please, touch the artwork 2* can create a nuanced and enjoyable experience that goes beyond traditional museum exhibitions. Specifically, for the purpose of constructing a theoretical framework, three main elements will be discussed by utilizing the publications of pertinent scholars: interactivity, immersion and flow. These three topics of discussion are especially relevant in the context of video game studies; however, for the purpose of this research, they will also be applied to museum studies, as the research question calls for an interdisciplinary approach.

As will be further explained in the Methodology chapter, the most relevant theoretical points that will derive from the theoretical framework will then be operationalized to create a deductive a-priori code, which will be fundamental for the content analysis of this research. Firstly, to pinpoint which theories might be the most useful, this chapter will start by reviewing relevant scholarly work related to interactivity, immersion and flow in video games. These concepts will then be discussed in the context of traditional museum exhibitions; finally, the theories will then be integrated into a comprehensive framework that will showcase their contribution to understanding the research problem.

2.2 Interactivity

Interactivity is a concept vital to video game studies, and thus it must be clearly defined. In a broader context, the term itself can assume different meanings when posed in different contexts, as has been disputed amongst scholars for decades (Landay, 2023). A general definition of what interaction is can be explained by a quote by Lori Landay in the book *The Routledge Companion to Video Game Studies* (2023); in the chapter Interactivity, Landay describes it as “an action that occurs as two or more participants exchange information [...] that has a reciprocal effect on each other” (Landay, 2023). When applied to

the case of video games, this interaction can be seen -usually- to occur between a human and a computer; often, the player perceives a reciprocal interaction. (Landay, 2023) To briefly summarize, Landay defines interactivity in video games as an exchange between a human and a computer, which may seem as reciprocal. As Rogers (1986) defines it, interactivity can thus be seen as the ability for a computer-related system to 'talk back'. This definition, however, can only function as a starting point; as will be showcased in the following paragraphs, interactivity is a much more complex issue, and to properly define it is necessary to explore different perspectives and provide a more detailed analysis.

The first controversy that the definition of interactivity poses is whether it can be seen as purely a technicality - and consequently researched as such. Relevant scholars in video game studies, such as René Weber, Katharina-Maria Behr and Cynthia DeMartino, argue that interactivity calls for a quantitative measurement, as it could be seen as a purely technical aspect of a video game. (Weber et. al., 2014) However, scholars such as Robert Wechsler invite the academic world to see interactivity and interaction in general as "a psychological phenomenon, rather than a technical one" (Wechsler, 2011). Welchsler further explains interactivity as a feeling that can be achieved in a performative setting, such as a video game, where spontaneity and communication come into play. (Wechsler, 2011) Though interactivity could potentially be analyzed both with a quantitative and qualitative -or mixed- method, Welchsler's perspective is more appropriate in the context of this research, as the aim is to analyze elements related to the enjoyment derived by interactivity - together with immersion and flow -.

Though there are varying definitions of interactivity in video game studies, the majority of the scholars seem to identify three or more sub-divisions of interactivity, often related to the freedom and impact of a player. As a first example, in their paper *Interactivity in computer games* (2016), Gokhan Sahin, Barbaros Bostan and Mehmet Can Üney define and divide interactivity in three sub-categories: personal interactivity, social interactivity and environmental interactivity. Personal interactivity refers to the interaction between the player and the game, thus elements related to the game mechanics, responsiveness to player input and the degree of freedom that the player has in influencing the game world. Social interactivity refers to a multiplayer setting, and considers communicating, cooperative systems and competitive elements. Finally, environmental interactivity is related to interactions with the game environment, including realistic elements, and how the environment reacts to the player's actions. Overall, the authors utilize these categories to research how variables and actions within a game can be manipulated or impact the game.

Each category impacts the depth of the interaction, as they offer a sense of control and reassurance. Overall, the authors describe interactivity as "the extent to which a player can modify his/her second self, the characters and the objects that constitute the virtual world" (Sahin et al., 2016), with each of them being related and connected with one another. (Sahin et al., 2016)

Another influential author in the definition of interactivity in video games, and its correlation to freedom and impact of the player, is Brenda Laurel. In her book *Computers as theatre* (1991), Brenda Laurel is one of the firsts to define and re-establish interactivity as useful in the context of computer-like systems, such as video games. The author gives an initial definition by establishing a new framework for researching and facilitating the mediation between humans and computers. (Laurel,1991). According to the author, who will extend her research as presented in further editions of the book, the end cause of human-computer interaction is not solely about the functionality, but about the experience. Therefore, effective interactive design between humans and computers -which in this context includes video game consoles as well - would have to engage the user by utilizing thought and emotion or, as the scholar defines it, effective drama. (Laurel, 1991 & Laurel, 2013) According to Laurel, enhancing engagement should be done by creating emotional scenes or a well developed character that the player can get attached to, elements fundamentally based on dramatic theory and technique. (Laurel, 1991 & Laurel, 2013). In this manner, the player will be more involved with a game, as well as encouraged to progress in the game. However, this definition of interactivity is rather limited, which is why other scholars' works will be discussed, to enrich and extend beyond Laurel's perspective of interactivity.

A more comprehensive and commonly accepted definition of interactivity derived from Laurel's work sees interactivity as the combination and the continuum of three variables: frequency, range and "significance of user choices in a system" (Landay, 2023, referring to Laurel, 1991). 'Frequency' refers to how often a player interacts with a game; for example, if a game has high frequency the player is allowed to make decisions and take actions frequently. A low frequency game would be one with many cutscenes and other passive activities. (Striner et al., 2019). On the other hand, a high frequency game depends on the player's actions, which continuously and actively have to make decisions. By requiring active choices, such as having the player take action to explore the environment, overcome a challenge or interact with non-protagonist characters (NPCs), the game makes the player feel involved with the game, which enhances the level of interactivity between user and console. In this manner, high frequency games have a higher level of interactivity. The 'range' of a

videogame, instead, refers to how many choices a player has available at any given moment. If a player is allowed to explore multiple strategies to achieve a goal or to overcome a challenge, it is considered a game with a wider range. A game with low range leaves the player little to no alternative solutions on how to approach a challenge. (Striner et al., 2019). This feeling of having an independent choice, even if in some cases it still stems from pre-selected options, encourages the player to feel more in control of the actions choices and to be more creative in their approach. When players are not forced to guess the predetermined correct choice, they are free to utilize their own strategy and, in a way, explore themselves as well as exercise their cognitive abilities. This heightens the level of interactivity, since the player feels more involved with the game through this offered independence. Finally, 'significance' refers to the measure of how much a player's choice impacts a game's outcome on the story itself, and thus their agency. A 'Choose Your Own Adventure' video game such as *Life is Strange* or *Road 96*, in which a player's choices fundamentally change the outcome of the game, is considered a game with high significance. (Striner et al., 2019) If the player notices that the choices, mentioned before in relation to range, influence the characters or the narrative in some way, their actions suddenly feel like more of a responsibility. This leads to the player to be more emotionally involved with the game, which boosts the level of interactivity. As a final note, it is important to notice that frequency, range and significance are not just a collection of independent aspects when talking about interactivity, but can often be seen as interrelated.

Though there are some similarities, the way that the authors presented define and classify interactivity is fundamentally different; thus, it becomes fundamental to recognize which definition of interactivity could be the most relevant to answer the research question. As seen in the previous paragraphs, interactivity can be seen in terms of freedom and impact that a player has when playing a game. Sahin et. al. define it by utilizing three categories - personal, social and environmental interactivity- to research how a player's actions can impact the game. Laurel's classification goes even more in depth to understand what exactly contributes to this feeling of freedom and impact by defining the three categories of frequency, range and significance. Arguably, Sahin et al.'s categorization, though more recent, is not as recognized as Laurel's. Furthermore, in the context of this dissertation, the classification is too general to properly function as a foundation in the theoretical framework. For example, personal interactivity is related to many different elements, such as game mechanics, responsiveness and degree of freedom. As there are no cooperative or communicative systems in *Please, Touch the Artwork 2*, social interactivity is also not

relevant. Finally, environmental interactivity can be seen in the overarching context of frequency. Overall, though Sahin et al.'s categorization of interactivity could be potentially utilized for a different case study or research question, it cannot be applied in its entirety to this research question. However, having a different perspective on interactivity is still useful to explore how different authors approach it.

Defining interactivity in terms of freedom and impact also applies to the field of digital interactive art. In his paper *Interaction and Interactivity: In the Context of Digital Interactive Art Installation* (2018), Salah Uddin Ahmed explicitly mentions Laurel's division of frequency, range and significance. The author mentions Laurel's as one of the most known definitions applicable to define whether a media artifact is interactive or not. Though Laurel's is not the only definition applicable, as digital art has to draw from many fields, the author agrees that interaction refers to how much a user can control a given media artifact. Furthermore, specifically referring to what the scholar defines as 'pure interactive art', Ahmed defines interactivity as the user's participation, especially by being a part of the artwork. (Ahmed, 2018) Overall, freedom and impact of a user, together with the feeling of active participation, are fundamental elements of interactivity in both the contexts of video games and digital art.

2.3 Flow and immersion

This subchapter will be an introduction of the concept of flow and immersion in video games, which are some of the key characteristics that video games can offer to go beyond the traditional museum experience of art. This section will offer a comprehensive definition of flow and immersion, two concepts which are often seen as intertwined, and give an overview of the theory present on the matter. The overview and definitions of flow and immersion will be then seen in relation with each other, with the argument that flow can be seen as a part of the immersive experience. This subchapter, together with the given definition of immersion, will be necessary to further construct the a priori code which will be instrumental for the content analysis of the chosen case study.

Flow and immersion are key components for the study and the development of video games. They contribute to the gaming experience by significantly impacting the player's engagement, and thus by creating an enjoyable experience. To provide a first working definition, flow is usually related to the state of complete absorption, and is responsible for the feeling of enjoyment a gamer may feel when playing (Michailidis et al., 2018). A sense of

flow is related to a loss of sense of time or of self. Though immersion is closely related, it incorporates a wider range of elements present in a video game. It usually refers to a player's sensation of being 'inside' the video game world, which can incorporate elements outside of flow, such as social interactions. Immersion is often a fundamental aspect to encourage the player to spend more time on-game, which is connected to the desire for achievement. (Pace, 2008). Though flow and immersion have similar elements, such as elevated concentration, loss of self-awareness and time perception and the balance between the skills of a player and the challenge posed by the game, they do have important differences (Michailidis et al., 2018 and Brown & Cairns, 2004). Both concepts are often associated with the more broader term "engagement", with a study equating "the most engaged level being equated with immersion" (Brown & Cairns, 2004). Because they are so closely intertwined, there is still much confusion in video game studies as to what exactly counts as immersion or as flow; furthermore, in video game studies, they are often measured with different questionnaires and premises (Michailidis et al., 2018). To clarify some of this confusion and give a better definition of both, this section will firstly first delve deeper on both concepts separately, and then will relate them with one another at the end.

2.3.1 Flow

One of the first and most relevant scholars who named and defined the concept of 'flow' is Mihaly Csikszentmihalyi, a Hungarian-American psychologist. In the 1970s, Csikszentmihalyi first mentioned the concept in his book *Flow: The Psychology of Optimal Experience* (first ed. 1990). The book itself is mainly related to the field of psychology, however, Csikszentmihalyi's definition of flow is still valued as fundamental and is commonly used in video game studies and video game design. In the book, the scholar defines "flow" as "a sense of exhilaration, a deep sense of enjoyment" (Csikszentmihalyi, 1990) that one reaches under specific circumstances; a state of flow is achieved when "a person's body or mind is stretched to its limits in a voluntary effort to accomplish something that is difficult or worthwhile" (Csikszentmihalyi, 1990), such as, for example, a video game challenge. This only happens, however, if the challenge matches the person's skill level, an important factor to take into consideration in video game design. Furthermore, as Csikszentmihalyi explains, having to concentrate on the task at hand makes the person forget other things temporarily, thus achieving a sense of flow. One of the key elements for

achieving a sense of flow, furthermore, is a clear ending to the challenge and hand, which must be intrinsically rewarding. (Csikszentmihalyi, 1990)

Csikszentmihalyi connects the concept of flow to the concept of 'enjoyment', arguing that flow is one of the purest forms of enjoyment in life. To briefly summarize Csikszentmihalyi's perspective, the author sees enjoyment as separate from pleasure, which the author sees as fleeting as it results from passive activities. Enjoyment, on the other hand, is active and often can be achieved when a person goes beyond expectation and achieves something unexpected, thus bringing a feeling of accomplishment and/or novelty. Enjoyment and flow are connected as enjoyable activities almost always result in a flow state. In a sense, flow is the ultimate form of enjoyment. (Csikszentmihalyi, 1990) Csikszentmihalyi defines enjoyment with seven major components, which can all lead to a state of flow:

1. *Tasks with a reasonable chance of completion*
2. *Clear goals*
3. *Immediate feedback*
4. *Deep but effortless involvement that removes from awareness the frustrations and worries of everyday life.*
5. *Sense of control over our actions*
6. *No concern for the self*
7. *Alteration of the concept of time, hours can pass in minutes and minutes can look like hours.*

(Csikszentmihalyi, 1990)

With this list, Csikszentmihalyi thus defines what are the elements that an enjoyable activity can have to bring a person to a state of flow. These components are often applied in the context of video games; even thirty years after its conception, flow is still highly regarded to create an enjoyable experience, and the seven points of enjoyment are still utilized in video game studies. As they are still relevant and can easily be operationalized, they will also be applied to the case study at hand. This will showcase how *Please, Touch the Artwork 2* can create an immersive and enjoyable experience which becomes an extension of classical museum exhibitions.

Csikszentmihalyi's definition of flow is instrumental to the demonstration of why video games can effectively become an extension of museum exhibitions. It is apparent that

some of the seven elements that lead to a state of flow, such as clear goals or immediate feedback, cannot be applied to the experience of a traditional museum exhibition. Visitors to a visual art exhibition have no specific task that needs completion, no defined goal, feedback or reward. A museum-goer is free to roam, to see what they want at their own pace, with no external structure imposing challenges. Usually, goals and tasks are self-imposed, for example wanting to admire a specific artwork is a common objective; however, there is no challenge to achieve that, and 'completing' the experience simply means walking out of the building. Thus, this lack of structure and challenge can make the experience rather slow-paced and only rarely bring the visitor to a state of flow. It is important to note that a traditional art exhibition can also be an enjoyable experience; there is no experience that is better or worse, just different. However, this research focuses on how video games can offer an interactive and immersive experience by being able to offer additional experiences that a museum could not easily achieve without the necessary technology. In this context, video games can more easily integrate all of Csikszentmihalyi's components of enjoyment; thus, they can become an extension of a static and traditional museum exhibition by inducing a state of flow, which creates a deeply enjoyable experience of the artworks.

2.3.2 Immersion

Immersion is another fundamental concept in video games studies, and a more known concept compared to flow, especially in the entertainment industry. One can 'immerse' oneself into a book, or visit a 4D cinema for an 'immersive experience', or even enjoy a theme park for its 'immersive environment'. The first concepts that are often known to be connected to an interactive experience are a sense of alienation from reality and a deep-dive into another realm which generates the feeling of being 'in' the movie, video game or book. This concept is close to how scholars in video game studies would define immersion in the context of video games; although there is no universally accepted definition, scholars in the field see it as players being deeply engaged with the game, a sensation of being transported inside the virtual world. In some cases, players might even immerse themselves so much as to empathize with characters as well.

The scholar Mata Haggis-Burridge specifically defines immersion in video games by dividing it in four different categories. The first category, which he calls 'systemic immersion', is related to the player's engagement with the game mechanics, challenges and rules of a video game; Haggis-Burridge mentions that it is closely related to

Csikszentmihalyi's definition flow. (Haggis-Burridge, 2020) In fact, systems or systemic immersion happens when decision-making is the focus, "where happiness is achieved from a pleasing progression of in-game challenge versus player-mastery" (Haggis-Burridge, 2020). The second category, called 'spatial immersion', is related to the virtual space of a video game, specifically to the feeling of being present in the virtual world. Together with the visual quality of the game, which can play a role in the immersion but is not fundamental, it is the environmental interaction and the sensory immersion elements that are fundamental. Both of these elements can create a high sense of realism that is "likely to simulate a sense of transportation to the virtual space" (Haggis-Burridge, 2020) by lowering a player's physical spatial awareness. It is possible to achieve by the player's ability to influence the environment -i.e. environmental interaction- and cinematic and sound effects - sensory immersion - .The third category, 'Empathic/social immersion', describes the social aspect of immersion, in which a player may develop a connection with another player or an non-protagonist character (NPC). This creates emotional connection to the characters, and consequently the game. As Haggis-Burridge explains, an emotional bond can be formed both with recognizable NPCs and with other players that participate in the game. This bond can be enhanced by recurring characters that the player regularly meets or specific places where players can meet to play together. Lastly, 'Narrative/sequential immersion' describes a player's inclination to continue the story and to progress, whether that means immersing themselves in the narration or in exploring new spaces or features within the game. It is connected to both plot progression and, sometimes, character evolution. (Haggis-Burridge, 2020)

There are still some controversies as to whether flow and immersion should be seen as separate or different concepts. For example, according to Lazaros Michailidis, Emili Balaguer-Ballester and Xun He (2018), these two terms can be used interchangeably. In the article *Flow and Immersion in Video Games: The Aftermath of a Conceptual Challenge* (2018), the scholars argue that there is a lack of substantial difference that could justify the separation of the two. They point out that several authors showcase that flow and immersion exhibit mutual properties, such as the aforementioned loss of perception and self-awareness, but also immediate feedback, perceived control and intrinsic motivation. Furthermore, as previously mentioned, there is a lack of generally recognised measurement for flow and interaction, which further blurs the difference. Therefore, the authors conclude their article by saying that there is not enough evidence to prove that the two concepts can be separated. Arguably, this perspective is not always applicable. It is undeniable that there are many

overlaps between the two, as they both refer to a deep level of engagement that a player has. The two concepts can also influence one another; a deep immersion in a video game can facilitate a state of flow, and a state of flow can help a player remain in the immersive state. However, it would be more accurate to say that flow is a part of the immersive experience instead. Flow is the sense of ultimate enjoyment that a player feels when they engage with the challenges that the game poses, which is often dictated by factors such as a match between the player's skills, the challenge difficulty and game mechanics. Therefore, as Haggis-Burridge (2020) poses, flow is extremely close to systemic immersion. But as the author showcases, immersion goes beyond that, and encompasses the sense of deep engagement which transports the player into a different reality, in which the player can feel part of. Thus, flow and immersion are not the same concept, but rather one includes the other. To briefly conclude, in the context of this research flow will be seen as an integral part of immersion, specifically systemic immersion.

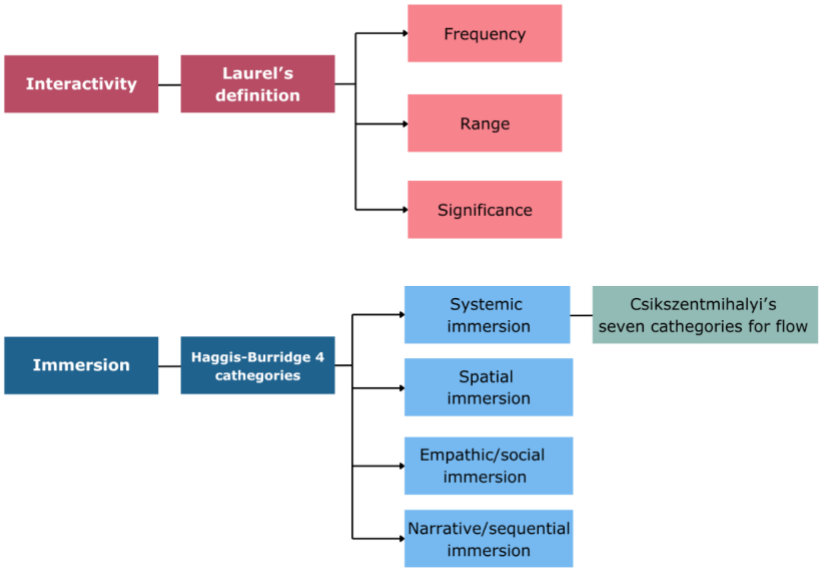
Chapter 3: Methods

3.1 Introduction

This chapter is dedicated to present how the research question was analyzed utilizing qualitative content analysis in order to ensure a reliable and comprehensive answer. The aim of the analysis is to explore which interactive and immersive elements of *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience of art that allows the player to engage with art, particularly how it can extend beyond traditional museum exhibitions. As will be discussed in this chapter, this research question calls for a qualitative content analysis, which was conducted utilizing a code book and a coding tree. As transparency and reliability are necessary for future researchers, a justification of the research methods will be provided, along with comprehensive insights into the data collection. Furthermore, I will thoroughly discuss the construction of the a-priori code, based on the theoretical framework, and its operationalization. As will be discussed, to build the code tree for the content analysis, the theoretical framework was used by extrapolating and operationalizing the most relevant theories for this research on interactivity, immersion and flow. Laurel's distinction of interactivity on frequency, range and significance is the backbone to the study of interactivity in-game. To analyze the immersion, Haggis-Burridge's four categories of immersion in video games were utilized. Lastly, Csikszentmihalyi's seven components of enjoyment, or flow state, are utilized as a point of reference for the system's immersion, which is strongly connected to the topic. Please find a visual representation of how that will be incorporated (*Table 1*):

Table 1

Illustration of the Integration of the Theories.



Finally, at the end of the chapter, I will further discuss matters of ethical considerations and reliability.

3.2 Research design

A qualitative approach was used to thoroughly analyze which interactive and immersive elements of the case study, i.e. the video game *Please, Touch the Artwork 2*, can create an enjoyable and nuanced experience of art that goes beyond the bounds of traditional museum exhibitions. Qualitative methods were deemed better suited to explore the complexity of the research topic as they allow the researcher to explore a relatively understudied topic such as art as presented in video games (Mulisa, 2021). To further expand, qualitative research would help with gaining in-depth insights and generating new theories or hypotheses (Maxwell, 2012 and 2022) and it is best to provide a deeper understanding of a topic through direct interaction (Mulisa, 2021), which will be a key component of this research. The overall goal of this research is to analyze which interactive and immersive elements of the video game *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience that extends beyond what a traditional museum exhibition can offer. Without a qualitative approach, this topic could not have been properly answered, as it looks into matters of creating an experience. In fact, the creation of a nuanced and enjoyable experience

of art cannot be observed by utilizing a quantitative approach, which is usually utilized to answer research questions that need numerical or quantifiable data; furthermore, a qualitative lens can offer new and surprising insights to the matter. (Mulisa, 2021) Finally, it is important to consider that this research was conducted by one person in a limited amount of time, which resulted in a relatively small research sample that is better understood under a qualitative lens. In fact, qualitative research is more suitable when doing an in-depth research of a singular case study, as it aims to analyze and understand the complexities it can pose. (Morse, 1994)

The qualitative method chosen to answer the research question is a content analysis of the case study. Content analysis allows the researcher to gather in-depth insights into qualitative data while providing a systematic way to identify patterns, concepts and overarching themes within the data gathered (Drisko and Maschi, 2015). According to Tim Wulf, Daniel Possler and Johannes Breuer (2022), qualitative content analysis is generally considered one of the most fitting research methods in the field of video games. Furthermore, it allows researchers to analyze and identify patterns in the content of video games, such as overarching themes, narratives or specific elements (Wulf et al, 2022); this insight is gained by gameplay and a thorough analysis of the storytelling elements. In the context of this research, being able to identify themes together with the player experience insight is fundamental to answer the research question. Thus, it becomes a useful tool to study which interactive and immersive elements in the case study can create an enjoyable and nuanced experience of art. Furthermore, qualitative content analysis is a great method for understanding the player experience as the researcher can include their perceptions and interpretations (Wulf et al., 2022). Qualitative content analysis proved itself to be a fitting research method in the context of this research, as three overarching themes were found that can answer the research question. As will be discussed more in detail in the thesis, it is character interaction, environmental interaction and immersion and flow elements that create an enjoyable and nuanced experience of artworks, which can extend beyond what a museum can offer.

In the context of this research, one case study was chosen: the video game *Please, Touch the Artwork 2*. The indie game is a free, hidden-object video game released in January 2024. As it was released in the same year that the analysis was conducted, it is a case study which is extremely recent, and not yet studied in this field of research. This can create more relevant findings; furthermore, apart from being a relevant and contemporary video game, the

game poses itself as a fitting case study as it offers a highly interactive art experience, in which interacting with the art is the key component of the game. As an example, players interact with characters within the paintings, retrieve objects or help restore a broken canvas. They are encouraged to engage and -digitally- touch the artworks, as the title itself reveals. As a consequence, the interactive elements are present and are easily identifiable for research purposes. Furthermore, the game itself has visuals which are structured similarly to those of a museum exhibition; there are paintings framed, with similar paintings put in close vicinity; this feature makes the game particularly relevant to this research, as it is closely connected to museum exhibitions. Moreover, even though it has only recently launched, it already has built a solid fanbase with an overwhelmingly positive rating online (10/10 on Steam, 4.9/5 on Google Play and 5/5 of App Store as of June 2024) which indicates the potential that this video game offers as a compelling art experience -and as a fitting case study-. Finally, unlike the first game of the series, i.e. *Please, Touch the Artwork* (2022), the game is easily accessible for future research, as it is completely free on all platforms. All of these considerations justify why this video game has been chosen as a single-case sampling. To further clarify, a single-case sampling is "a collective term for an in-depth analysis of a small non-random sample" (Hunziker & Blankenagel, 2021), which was chosen because it is informative and fitting to the research at hand.

The nature of the data for this research is primarily qualitative; it comes from the game content itself, which includes the interactive and immersive components of *Please, Touch the Artwork 2*. I have analyzed the units of analysis, i.e. the interactive and immersive elements, in order to answer the research question. The gameplay necessary for the data collection was entirely conducted by myself. This way to conduct the research has allowed me to rely on primary sources, defined in this case as the direct experience with the research topic. The data was further processed and organized utilizing a code tree, as I will further explain in the following section.

3.4 Operationalization and data collection

This section will discuss the operationalization of the theory which has been expounded in the previous chapter and the process that allowed the theoretical points to be labeled as codes. Following Mulisa's guidelines to qualitative research, I have engaged in several gameplays to familiarize myself with the case study before starting the data collection

process. This allowed me to have a good grasp of the game mechanics and the context, which made the data collection process much smoother. Once I felt like I achieved a good understanding of the game dynamics, I started constructing an a-priori code basing myself on the theoretical framework. I then proceeded to extrapolate the main points of the theories presented, and created labels - or codes - based on them. One element which made the operationalization process smoother was that all of the main scholars provided a ready-to-use categorization of each concept, which made the process of creating codes straightforward. For example, the scholar Mata Haggis-Burridge defines immersion in four different categories. One of them, which he calls 'spatial immersion', is related to how the video game world can make a player feel more immersed. From this concept, I created two codes which relate to the theory: 'environmental interaction', which explores how a player manipulates, triggers and interacts with the virtual world, and 'sensory immersion', a code applied to moments in which the game's graphics, design, sound etc contribute to feeling of immersion in the game world. The same process was applied for all other codes. Laurel's distinction of interactivity divided by three main concepts -frequency, range and significance, was further defined with codes that were specific to *Please, Touch the Artwork 2*. Subsequently, in-game interaction was divided into interaction with the painting, interaction with outside elements and with NPC. The codes were created with the case study at hand, after having an experience of it, which would allow a more focused approach. For flow and immersion, which were merged, the codes were mainly based on Haggis-Burridge and Csikszentmihalyi. By utilizing the seven points that Csikszentmihalyi utilized to identify flow elements, I created seven related codes under the overarching category of "Systemic immersion or Flow", plus 'game mechanics' as related to Haggis-Burridge further interpretation of systemic immersion. For the remaining categories of immersion I utilized the theory of Haggis-Burridge to create the codes. Originally, the starting a-priori coding tree was divided between the two overarching themes: immersion and interactivity. I created two separate coding trees utilizing Canva.com, which can be seen in the following tables (see *Table 2* and *Table 3*):

Table 2

Initial Code Tree for Interactivity.

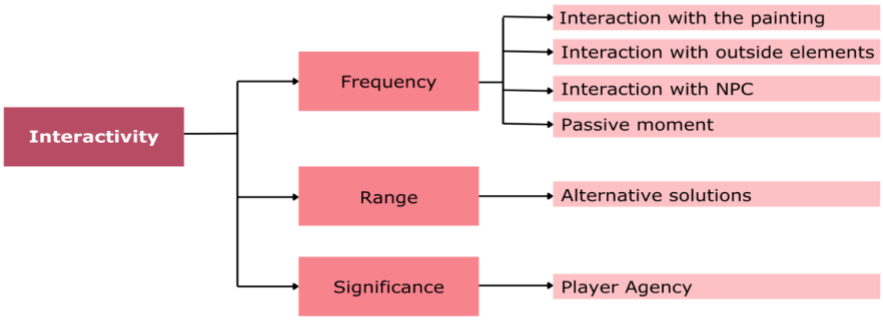
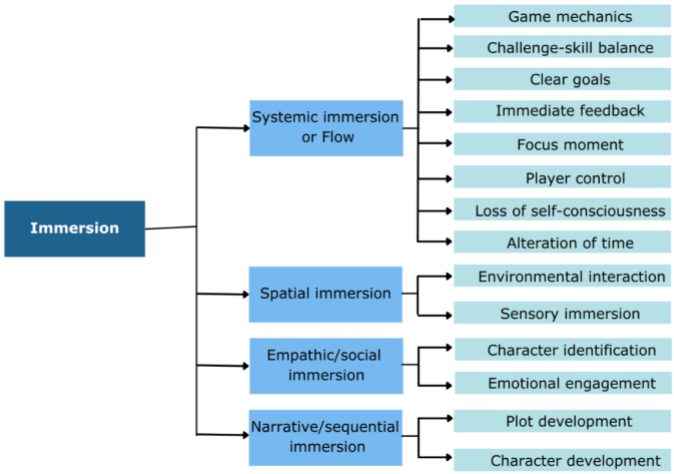


Table 3

Initial Code Tree for Immersion.



The lightly-coloured labels indicate the utilized codes, whilst the others are the overarching themes as defined by the scholars.

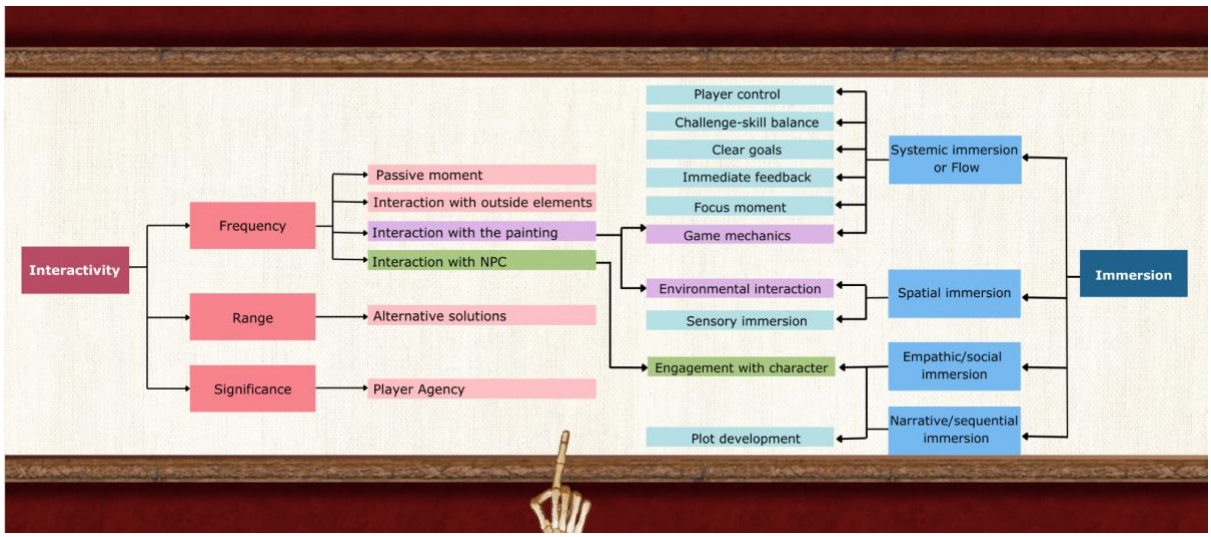
Once the code trees were created, an initial analysis of the gameplay began. To properly take notes during the gameplay, I utilized the website Notion.so to create an initial Code Book with several pages embedded within, one for each code. Initially, I believed it would be easier to focus only on the Interactivity coding tree, and then to play the game again by utilizing the Immersion coding tree. However, I immediately realized that they were too close to be seen as separate, and thus I utilized codes from both trees when conducting the

research. Using two monitors, I utilized the Notion document on one to take notes, and started playing the game on the other. This allowed me to easily take notes and organize screenshots without sacrificing the quality of the gameplay. I found this to be the best solution to still be immersed in the game whilst having easy access to my notes. In the following days, I started collecting the primary data by playing the game and applying the codes whenever there were related elements. To identify whether or not an element was related to the code, I utilized the Code Book, which more clearly defines each code (see *Appendix A* for the finalized Code Book). Through the definitions of the codes, which can be read as indirect questions I identified whether or not an element would fit in it. For example, if I were to encounter an NPC during gameplay, I would identify the codes related to character interaction, then ask myself "Can I identify or empathize with this character?" to code it with 'engagement with character' and "Am I engaging in a meaningful interaction with the NPC?". If the answer was yes, I took as many screenshots as necessary and noted down the observations on the Notion document. If for example I were to encounter an already seen NPC, I would take a screenshot of the recurrent NPC, and then utilize the codes related to NPC interaction, based on the context of the moment. A similar process was applied with the other codes; however, it is important to notice that sometimes the process was inverted. Instead of something occurring, then noting it down, I had to actively seek for it. For example, for 'clear goals' or 'game mechanics' I had to actively research where and how the game would offer related information.

After the first attempt at analysis done by utilizing this method, I quickly realized that the initial coding tree and code book had to be subjected to some modifications. Certain codes were too similar to justify separating them, whilst others were too difficult to research. Firstly, I united 'character identification', 'emotional engagement', and 'character development' under one code called 'engagement with character', as the three initial codes were all similar. Furthermore, 'loss of self-consciousness' and 'alteration of time' were deemed too subjective and too difficult to track and measure; therefore the data collected for these two codes were merged into 'focus moment' and 'sensory immersion' when deemed relevant, and the rest was discarded. Finally, 'game mechanics', 'environmental interaction' and 'engagement with character' were still connected to the category of immersion, but were also connected with the interactivity code. Therefore, the final code includes both Immersion and Interactivity, with some codes being connected between the two overarching concepts. For a better visual understanding, please refer to *Table 4.*

Table 4

Finalized Code Tree.



Once the code book was up to date as well (*Appendix A*), I kept analyzing the video game until its completion utilizing the finalized code tree and the code book as reference. Overall, the data collection process lasted for around two weeks.

Once the data collection process was finished, I reorganized the Notion document and the data collected. I eliminated screenshots which were not useful and reorganized the written notes. As all the data was related to a single case study, this method of analysis permitted an in-depth research, which showcased the nuances of *Please, Touch the Artwork 2*. (Morse, 1994) With the collected data, I conducted a content analysis to identify emerging and recurring themes. From a thorough analysis of the screenshots and the codebook -which includes the written notes taken during the analysis-, three main themes emerge: NPC and character interaction, environmental interaction and immersion and flow elements. As Wulf et. al. (2022) premised, qualitative content analysis was indeed appropriate to identifying overarching themes and patterns in the video game.

3.4 Method of analysis

A qualitative content analysis was conducted on the retrieved data by exploring overarching themes. The first step to analyzing the retrieved data was to review and explore it to familiarize with it and get a sense of the overall themes and patterns. The codebook was particularly helpful to get a bird's eye view of all of the data retrieved, together with the screenshots. Though most of the coded elements were influencing each other to some degree, there were three which emerged, both during the analysis of the gameplay and during the

analysis of the retrieved data. Firstly, though some code only had one or two related notes - for example ‘clear goals’ was assigned only one observation related to the goals- other had a higher frequency of apparition. For example, ‘interaction with NPC’ and the connected ‘engagement with character’ had many more notes and screenshots related to it. Similarly, ‘environmental interaction’, ‘interaction with the painting’ and ‘interaction with outside elements’ all seemed to relate, and had a high frequency of notes and screenshots. Though at the beginning those two were the more apparent categories which emerged, there was a third one that also showed itself to be highly influential, which is related to focus moments and good game design. Finally, after the identification and refinement of the themes, I analyzed them in relation to the research question, which I will showcase in the Analysis chapter.

3.5 Ethical considerations and reliability

Though the research was conducted by myself being both the researcher and the player, which needs no informed consent, there are still ethical considerations and reliability issues to consider. Firsty, the research may be influenced by my own bias and background knowledge; for example, what in this context is considered an enjoyable and nuanced experience of art may be seen in a different way from another scholar’s perspective. Furthermore, this study solely relies on a qualitative approach, which may influence the findings; it is possible that by using mixed media there may be more insights shown. These elements were taken into consideration when conducting the research. Two strategies were implemented throughout the research to lessen the effect of these limitations. Firstly, exploring the subject from different theoretical angles, with scholars from different cultural backgrounds. Furthermore, one strategy that was implemented through was a consistent review from my thesis supervisor, and peer-review and peer debriefing with colleagues impartial to the study. Finally, a review conducted by an academic with no familiarity with the field of media studies - specifically a PhD in behavioral ecology and biology - was conducted to ensure clear explanations of all elements of the thesis and cohesion throughout. This collaborative process was effective to recognize errors and biases which could have influenced the research.

Chapter 4: Analysis and Results

4.1 Introduction

This chapter will delve into the analysis that was conducted with the data retrieved, and the observations that arise from the process. It is always important to keep in mind the original research question: which interactive and immersive elements of the video game *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience that allows players to engage with art in ways that extend beyond the experience of a traditional museum exhibition? Based on this research question, the data collection and the content analysis are based on exploring interactive and immersive elements in the context of an art exhibition-like video game. By utilizing the code based on the theoretical framework and conducting the content analysis, as described in the methodology, three main findings come to answer the question: character and NPC interaction, environmental interaction and flow-related elements. Character and environmental interaction are mainly related to in-game elements, but the third theme, related to flow, is connected to good game design and ease of use. All three elements are connected with one another, as they include interactive and immersive elements both. In the following sections, they will all be discussed in detail, with screenshots and notes taken during the analysis process as examples. As will be discussed, elements such as character engagement and environmental interactions are rarely part of a traditional in-person museum experience; therefore, they pose a nuanced perspective on the research question at hand. As a final note, although the original intention was to divide the two overarching topics into two separate analysis chapters - one for interactivity and one for immersion -, the analysis of the data itself suggested that the two topics are too closely related; therefore, this chapter will combine the analysis and findings of both elements in the video game related to interactivity and immersion.

The very first observation that emerged when conducting the content analysis by applying the code is how interactivity and immersion are two concepts that, in the context of this video game, cannot be seen as completely separated entities. When utilizing the first codes, one for interactive elements and one for immersive elements, one of the first things observed was how similar some of the notes and screenshots gathered as data were for a few codes. For example, data retrieved for ‘interaction with NPC’ and ‘engagement with

character' were very often overlapping, with the only difference being that the protagonist did not count as an NPC. As it did not make sense to assign one code related to the topic exclusively to either interactivity or immersion, character interaction became a bridge between the two concepts. Another bridge between interactivity and immersion is the one between in-game elements (the code interaction with the painting) and environmental interaction and game mechanics. Although this is case-specific, when seen in broader terms this connection between immersion and interactivity stands, from a logical and a theoretical standpoint. In fact, interactive elements can indeed inform and encourage the feeling of immersion. In their paper *How do narrative features affect a player's immersion in computer games? The analytical hierarchy process approach* (2022), Zixuan Guo and Cheng-Hung Lo argue that spatial and interactive elements, such as in-game puzzles and narrative features, ignite curiosity, empathy and a high level of concentration -i.e. immersion-. A more recent paper called *Understanding the impact of perceived challenge on narrative immersion in video games: the role-playing game genre as a case Study* (2024) explores more in detail the complex relationship between the two. To briefly summarize it, the authors explore the connection between challenges and narrative immersion, specifically in the context of role-playing games (RPGs), arguing that a higher challenge and interaction level does have some impact on immersion (Dominigues et al., 2024). Overall, therefore, there seems to be an agreement that the two concepts are connected and that interactivity has a certain degree of impact on immersion.

In the analysis of *Please, Touch the Artwork 2*, there are two overarching themes that especially seem to connect interactivity and immersion, as briefly mentioned beforehand: character interaction and environmental interaction. A fundamental part of many video games is the interaction with NPCs or with other characters; those can either be impersonated by real people, such as in the case of multi-player games, or by virtual entities. (Haggis-Burridge, 2020) Several dissertations in contemporary video game studies look into the importance of NPC interaction to increase immersion and, thus, entertainment value. The better and more natural the interaction is, the higher the feeling of immersion, further proving that interactivity can heighten the feeling of immersion in the context of character interaction. (Zargham et al., 2024) The second element that unites immersion and interactivity is environment interaction, which is another major focus point in video game studies when looking into immersion. The connection between interactivity and immersion, however, is complex and deserves more attention than what is possible to achieve in this paper's constraints. Furthermore, it is not directly related to the research question, which instead aims

at answering which interactive and immersive elements can create an enjoyable and diverse experience that allows players to engage with the art in ways that extend beyond those of a traditional museum exhibition. However, seeing the two entities as connected adds a nuanced perspective to the interpretation of the data and the answer, and thus still needs to be taken into consideration when understanding the results.

4.2 Character and NPC engagement

In *Please, Touch the Artwork 2*, character and NPC interactions are a recurring theme that emerges during gameplay and during the analysis. Social interactions of these sorts are fundamental in the context of this game, as the NPCs are the ones that allow the story to continue. Various NPCs, which are often (virtual) people, but also animals, skeletons, shells and even objects, usually require a number of items that the player has to find across Ensor's paintings. Often, these objects either showcase the NPC's personality - for example a drunken person asking for liquor bottles,- see *Figure 1* -, or an urgency they may have - for example, a boat rider asking for buckets to avoid sinking, see *Figure 2* -.

Figure 1
A Drunken Asking for Liquor Bottles.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 2
A Sinking Boat Rider Asking for Buckets.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Often, fulfilling these requests triggers a scene, which allows the protagonist to continue the story or find other objects for other NPCs, thus allowing the continuation of the plot. For example, providing the drunk with all the 10 bottles triggers a scene where he gets kicked out by an elderly woman; he does so and trips on the table in front of him, breaking a wooden leg, which is needed by another NPC (*Figure 3*). In other cases it's more straightforward; for example, once the boat rider is not sinking anymore and the boat is safe, he invites the protagonist to go on a boat ride, unlocking the next scenery (*Figure 4*).

Figure 3
The Drunken Flees and Provides Another Object.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 4
Unlocked Scenery with the Boat Rider.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Often, the scenes triggered by fulfilling the NPC's requests are engaging in an emotional way. Though the reaction to each scene might offer a different emotion to different players, the game often wants to convey a specific feeling. For example, in the scene where the drunken gets kicked out of the bar, the scene is shown in a comical way, with exaggerated expressions and sound effects often associated with funny scenes in movies or cartoons. In other cases, such as with a reoccurring NPC, there are elements which can create a more tender-like reaction. This creates an emotional attachment between the player and the characters in-game, which adds depth to the experience and is often more engaging than simply observing a painting with different characters in it. In the video game, the characters

are dynamic; sometimes they have a specific personality that the player can relate to, and almost always create an entertaining interaction, which can feel more personal as well.

The majority, if not all, of the characters the protagonist engages with are directly inspired -and sometimes 'cut out' - from original paintings by James Ensor; most of them only appear once, but there are three characters which consistently recur in-game. When saying 'cut out', it means that most characters look identical to characters present in Ensor's paintings, but are often put in a slightly different context and animated to ensure a smoother gameplay and a more realistic interaction (see *figure 6* and *Appendix C* for an example). As the characters are directly related to Ensor's paintings, this creates a way for museum audiences to recognize and empathize with the characters on a canvas, for example when going to a physical exhibition in which the paintings they belong to are present. This is particularly true for recurring characters. Apart from the protagonis, only two NPCs are reoccurring: a mysterious masked individual, which in this paper will be referred to as "the slasher", and what appears to be the ghost of James Ensor himself. To briefly explain their identities, there was no name related to the masked individual until the very last chapter, where an accomplishment "find the masked villain" pops up and, later, "bring the masked man home". Therefore, as he was seen slashing canvases, he was called "the slasher" through the research. In the case of the ghost, he can be recognized by a self-portrait that James Ensor did in 1890 (*Self-portrait of James Ensor by his Easel*, 1890 - see *Appendix C*). These characters play a fundamental role in the game; the slasher is initially presented as an antagonist, a character without name that slashes the canvases without apparent reason (*Figure 5*). The ghost of James Ensor, instead, is mainly there to aid the protagonist - the white skull-headed gentlemen present in all of these pictures, which is also James Ensor -; the ghost often is the one that creates a 'magical' vortex inside the canvases, which can transport the protagonist onto the next chapter (*Figure 6*).

Figure 5
The Masked Villain Slashing a Canvas.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 6
A Detail of Ensor's Ghost and the Protagonist Jumping in the Painting.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

The interactions with the slasher specifically are fundamental to the narrative/sequential immersion and to the empathic/social immersion aspects. A recognizable character keeps the player engaged, as it can elicit a strong emotional response -such as worry or surprise-, and may encourage a player to learn more about them and therefore to progress with the story (Haggis-Burridge, 2020). In the case of the slasher, the player's curiosity is indeed satisfied with a progressively higher engagement; only in the latest chapters of the game the slasher's backstory and motive become clear. In the first chapters, the slasher is a character that only appears occasionally, usually slashing the canvas (such as in *Figure 5*), then running away. In "The Wedding" chapter, instead, the player has to repeatedly find the slasher; this is the only instance in which the player has to find another NPC instead of an

object or an animal (*Figure 7*). Once the player successfully completes the challenge, they are transported onto the following chapter, in which they interact with the slasher again; this is the only interaction in the game that happens behind a canvas (*Figure 8*). In a way, utilizing the back of a canvas as an environment itself adds a new way to experience paintings, as it goes beyond experiencing the actual painted part.

Figure 7
The Player Must Find the Slasher.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 8
The Slasher Asks for Help Behind a Canvas.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Once the protagonist accepts the challenge, both the protagonist and the slasher are transported into a museum, which is the only environment that is not a painting or a canvas (*Figure 9*). In here, the player discovers that the slasher was looking for a way to become part of their original painting -an accomplishment will pop up saying “bring the masked man home”-, which becomes possible thanks to the help of the protagonist (*Figure 10*). Though

the final motive of the slasher is to go back home, the exact reason why he was slashing the paintings remains open to interpretation; perhaps, it was a way to get the attention of James Ensor -his painter- and get help, perhaps it was a revenge for having been cut away from his own painting. This turn of events, in which the villain becomes a person in need, a character that needs help to go home, creates an engaging narrative and character arc which can create an emotional attachment to the NPC. This is a powerful element which is connected to both interactivity and immersion. The interactive element lies in the interactions that the player has with the NPC by repairing his damage, finding him and then helping him be reunited with the painting. There is a high level of frequency -as understood in Laurel's terms-, as there are many actions and interactions that the player has with this specific NPC. However, interactivity is not the only factor at hand. In this case, it is the empathic/social immersion aspect of it that creates the emotional bond between the player and the slasher. The player identifies the slasher throughout the gameplay, and though at first the player may feel scared or surprised by him, as the actions and wicked laugh encourage, they may feel empathetic with the masked individual towards the end, when he asks for help and is happily reunited with his family thanks to the player.

Figure 9
The Museum Scene.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 10
The Slasher is Reunited with his Painting.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Another character which is a fitting example for researching how interactive and immersive elements in the video game can create an enjoyable experience of art which stretches beyond those of a traditional museum exhibition is the character of James Ensor. The belgian painter is also not only reoccurring, but a fundamental character in the game, both as the protagonist and as an NPC. The player is subtly introduced to the painter from the first scene, in which the skeleton of James Ensor rises from his tomb (*Figure 11*). At the end of the Prologue chapter, the player then encounters the ghost of James Ensor as an NPC who transports the protagonist between different chapters of the game (*Figure 6*). However, though the protagonist himself is Ensor, it is only towards the end that the player really gets to know the painter. The salient point in which the painter himself becomes the focus is during "The End" chapter, which is the only chapter that is not available and that can be unlocked only by completing the rest of the gameplay. In the final chapter, the protagonist finds himself inside a building with several doors, with the objective being to find 27 paint brushes through the building, by opening each door. Once the challenge is completed, the protagonist starts painting on an easel (*Figure 12*), and a sequence of self-portraits and photographs of James Ensor appear as a sort of flashback (*Figure 13* as example). At the end of the sequence, we see the protagonist transformed in the style of Ensor's paintings (*Figure 14*), and, if clicked on, he will wink to the player before the final credits start to roll. In a sense, the protagonist goes through a similar arc than the one of the slasher. He becomes the painter, but also part of the painting itself, finding his place and remembering his identity.

In the broader context of character interaction and social immersion, this focus on the painter is a particularly interesting feature that contributes greatly to answering the research

question. In fact, it allows the player to pay attention not only to the artworks, but brings homage to the painter as well. Though many traditional museum exhibitions include the history and context of a painter, the video game adds depth to it by being able to impersonate and interact with him. Though not much of his story is showcased in the video game, as the focus still remains on the paintings, it creates a more engaging experience with the painter by utilizing empathic and social immersion elements that the game provides. For example, showcasing the ghost of James Ensor multiple times throughout the gameplay creates a sense of recognition that the player can experience; this sense is enhanced even further by showcasing the original self-portrait of Ensor by the easel in the final flashback scene. Thanks to the final scene, people that may not be familiar with the painting can create a connection; this also adds more depth to an eventual second gameplay.

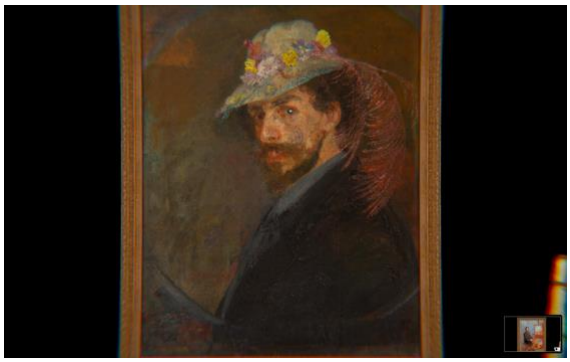
Figure 11
The Skeleton of Ensor Rises from his Tomb.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 12
The Protagonist is Painting on an Easel.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 13
One of Ensor's Self-portraits in the Flashback.



Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 14
The Protagonist Becomes Part of the Painting.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

4.3 Environmental interaction

Environmental interaction is one of the most commonly coded elements, as it is a fundamental aspect of *Please, Touch the Artwork 2*. Codes such as ‘interaction with the painting’, ‘environmental interaction’ and ‘sensory immersion’ were often utilized during the coding process. This can be explained by the context of this specific video game; in fact, the main purpose of this game is to be a hidden object adventure, as specified by the description of the game itself on Steam (*Thomas Waterzooi Franchise*, 2024). As the main challenges are related to finding objects within the virtual environment, the environment consequently

becomes a fundamental part of the gameplay, and thus becomes more prominent in the research process.

This focus on environmental interaction and immersion contribute to creating a new way of experiencing the artworks, which would not be possible in a traditional museum exhibition. In *Please, Touch the Artwork 2*, the entirety of the video game is set inside a virtual environment based on James Ensor's paintings, with a few modifications to ensure an enjoyable and smoother gameplay. The player is free to explore these semi-moving paintings, and is able to travel between them, environmental-related interactivity elements which create a form of spatial immersion. To advance the plot, the player has to engage with NPCs and satisfy their requests; doing so leaves the player the possibility to continue with the narration and to explore even more paintings. In the paintings, the player is not confined to a two-dimensional environment. There is often the possibility to move around the objects (see *figure 15*, *figure 16* and *figure 17* for an example), leaving the player with a higher level of control over their actions and giving the illusion of a tridimensional world, which heightens the feeling of immersion, of 'being there'. Finally, the player is encouraged to virtually touch and engage with the paintings, for example by zooming in the details or by touching the objects that need to be found. Overall, these interactive elements related to the virtual environment all contribute to creating an immersive experience for the player, which can enhance the feeling of being "in" the paintings. Often, that is more difficult or even impossible to achieve in the setting of a physical museum exhibition. For example, it is factually impossible to be transported inside the painting and to move the objects within it; a video game, however, can create this feeling by utilizing environmental interaction. Furthermore, paintings are rather bi-dimensional, and though it is possible to feel like you are "in" them, simply observing the painting is an objectively more passive experience than being able to identify with a protagonist that can explore and move within the paintings at ease. One key feature that a video game allows is to offer the player to see the entirety of a collection, which may not be possible in a physical exhibition. In the following sections I will further define other elements related to environmental interaction in-game that can create an enjoyable and nuanced experience of the artworks.

Figure 15
The Protagonist Behind the Fruits.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 16
The Protagonist Can Move to the Side.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Figure 17
The Protagonist Can Move to the Front.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Another fundamental point of environment interaction is, as previously mentioned, the challenge to find hidden objects within the paintings, which encourages the player to closely observe and notice the detail of the paintings. This encourages the player to not only appreciate the artwork, but also to actively look into the details of it, which creates an engaging and enjoyable experience of artworks for the player. As in museums artworks and artifacts have to be observed from a distance, having the possibility to closely look at the details creates a nuanced experience of the artwork; this is especially useful for highly protected paintings, such as the Gioconda (commonly known as Mona Lisa by Leonardo da Vinci), which are virtually impossible to examine close-up due to protective glasses and barricades, or for difficult to reach giant paintings. Being able to notice specific details of a painting can bring a truly nuanced way of experiencing it, which is where a video game such as *Please, Touch the Artwork 2* can come in aid.

One last element closely related to environmental interactions that greatly contributes to the immersive feeling is related to sensory immersion. Sensory immersion is based on the theory of spatial immersion by Mata Haggis-Burridge (2020), and refers to the game's elements that contribute to the feeling of immersion in the virtual world, such as graphic, design and sound effects. Thanks to these elements, the feeling of immersion that a player can feel is greatly enhanced. In Please, Touch the Artwork 2, for example, there are elements that are in movement, which can make a scene more lively, and sound effects related to the environment. When the protagonist is on a beach or near the sea, there is the sound of waves crashing against the shore; in another scene which depicts a crowded procession -based on Ensor's famous painting *Christ's Entry Into Brussels in 1889* (see *Appendix D*) -, there is the sound of a hubbub of voices typical of big crowds which, interestingly, fades but is still present in closeby paintings. Similar sound effects can be found in other paintings as well, which further enhance the feeling of immersion the player can feel when playing the game. Sensory immersion is another immersive element that a video game can offer to the player to create an enjoyable nuanced experience of art. A traditional museum exhibition is known to be quiet, with little to no sound, and of course the paintings themselves cannot usually move. Within the video game instead, when impersonating the protagonist, which is able to explore and is "in" the painting, the player themselves can feel like they are in it; sound effects or moving elements can enhance this feeling even further.

4.3 Flow elements

The final emerging theme during the content analysis was flow-related elements, i.e. game dynamics that made the experience enjoyable and immersive. Apart from the visually pleasing artwork and the funny NPC interactions, the game design itself encourages the player to enter a state of flow and immerse themselves into it. Particularly, there are very few passive moments, that only last a couple of seconds, making the game very active; furthermore, the challenge-skill balance was well matched, and the easy access to hints - which would indicate where one of the objects to find was - made the plot advancement smooth. If the player were to get stuck on a specific challenge, they could easily choose to ask for a hint in favor of continuing the plot. This also makes the game more easily accessible to people of different skill levels. Two other aspects that made the game easy to play were the clearly defined goals and objectives, indicated by a bar easily visible on top (*Figure 18*). The player has to find a set number of objects, animals or people, and the feedback is immediate when the player is successful.

Figure 18
The Required Object and the Remaining Amount Shown on Top.

Note. Screenshot taken from *Please, Touch the Artwork 2* [Video game] by Waterzooi, T. (2024). https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Every time the player clicks on the object, it creates a sound related to the object, animal or person; for example, when finding the cats in “The City” chapter, they emit a meow. A metal or wooden object creates a related sound, like they are being picked up. Furthermore, the retrieved object gets immediately detracted by the count bar on top. Once the player successfully manages to find all the objects, an image with the NPC that required the object pops up, inviting the player to interact with them again. This combination of clear objectives, immediate feedback and appropriate challenge-skill balance, which can be regulated by asking for hints, makes the gameplay fluid and easily instates a sense of flow. When seen in the context of the research question, it is the way that the video game integrates flow inducing elements that can create an enjoyable and nuanced way to experience the artworks. In traditional museum exhibitions, some of these elements are rarely present. For example,

there is no clear goal or immediate feedback, unless it is entirely self imposed; there is also no challenge which requires a particular skill. Therefore, though a static museum exhibition can still be enjoyable, a video game such as *Please, Touch the Artwork 2* may create a more immersive experience, which could induce a state of flow more easily through balanced challenges, clear objectives and immediate feedback.

4.4 Concluding remarks

In the previous section, three emergent themes that stood out via the content analysis were discussed to answer the research question: which elements of the video game *Please, Touch the Artwork 2* create an immersive and interactive experience of art that extends beyond a traditional museum exhibition? In the context of this case study, we saw that there are three overarching themes that can contribute to an interactive and immersive experience of artworks: social engagement with NPCs and with the protagonist himself, environmental interactions that immerses and invites the player to pay attention to the content of the painting, and elements related to the game design that contribute to entering a state of flow. Some of these elements could greatly contribute to a museum experience, as they might be impossible or too difficult to achieve otherwise. For example, as artworks such as paintings are something to be appreciated from afar and in a controlled environment, using a video game can bridge the physical distance between the physical artwork and the user by allowing active interaction. In fact, the video game can allow the user to touch it, move its elements and appreciate it in all its details. Furthermore, there are no sound effects related to artworks, no moving elements, and no challenges. However, a video game such as *Please, Touch the Artwork 2* can complement a static exhibition by incorporating ways for audiences to engage with the artworks by interacting with the characters inside them. This can create a sense of familiarity, to empathize with them or to be entertained, elements which are related to social immersion. Furthermore, a focus on the painter can give more context on them, and encourage the audience to learn more about the painter and thus to understand the artwork even more deeply. For example, after playing the game and impersonating James Ensor, a player could become motivated to learn more about him. By reading his Wikipedia page, they would learn more about his story, and how he influenced surrealism and expressionism, and how he is seen as one of the boldest artist of his time for his scandalous art (*James Ensor*, Wikipedia, n.d.); even such a simple research would expand the viewer's knowledge and add a nuanced perspective on Ensor's paintings.

Having the possibility to feel immersed in the artwork and to interact with it is also a great addition that a video game can give to a potential museum-goer. Firstly, it makes an exhibition more accessible; a person that cannot go in person to Belgium to visit Ensor's work can still appreciate his work in the comfort of their home, even if they were to live on the other side of the world or if they have a disability or impairment that does not allow them to go to the exhibition. Secondly, it encourages the viewer to appreciate the details of the artwork, as they have to actively seek out the hidden objects by zooming in on details that may not be possible to see that closely in real life.

Lastly, engaging game design can become a great learning tool for audiences that might be more acquainted with video game mechanics. Clear goals, challenges and immediate feedback create a more engaging way to experience the artwork than walking around and just observing the art. As previously mentioned, many museums around the world already have started recognizing this, as they are incorporating video game-like elements in their art exhibitions (the so-called "gamification" of museums). However, a related video game can be an additional tool to add to their repertoire of dynamic activities and to popularize museum and art exhibitions even more.

To briefly conclude, the static nature of visual art exhibitions is changing to appeal to a larger and diverse audience. Science museums have been the first to apply interactive elements to their exhibitions, but other institutions are also picking up on a similar path. More and more art museums include game-like elements in their exhibitions, such as minigames and small challenges, though usually targeted towards younger people. A video game could be a great way for art exhibitions to expand the visitor's experience, and also a way to attract a wider audience, which may start to perceive the museum experience as more engaging and active. As video games have become extremely popular, it opens the museum to new possibilities and ways of becoming more relevant in a technology-centered world.

Chapter 5: Conclusions

5.1 Summary

This section will briefly summarize this research and its relative findings. This dissertation aims at answering the following research question: which interactive and immersive elements of the video game *Please, Touch the Artwork 2* can create an enjoyable and nuanced experience that allows players to engage with art in ways that extends beyond the experience of a traditional museum exhibition? In order to achieve answering the research question, three main steps were taken. The foundation of this research was based on creating a theoretical framework with theories related to interaction, immersion and flow in video games. Utilizing these theories and the theoretical framework, an a-priori code tree was created, a necessary tool for the content analysis which followed. Finally, the analysis was done on the case study - i.e. the video game *Please, Touch the Artwork 2* -, together with a discussion of the data taken. As a conclusion, the three overarching themes that emerged from the qualitative content analysis were environment and character interaction and flow elements. As thoroughly explained in the Analysis and results chapter, all of these themes offer nuanced and enjoyable ways to experience art in a different way. For example, environmental interaction offers the user the possibility to change the paintings, touch them and closely inspect them. Character interaction can create emotional bonds with characters present in the paintings, but also with the painter itself. Finally, flow elements are related to good game design that create an enjoyable experience of the artworks when utilizing a video game.

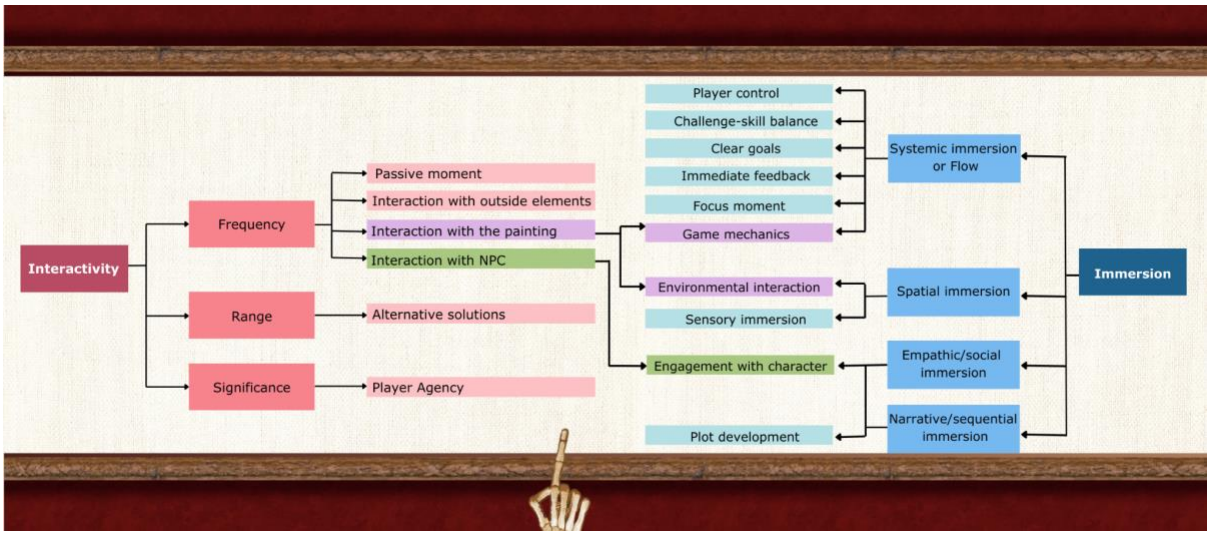
In the theoretical framework, the most relevant theories utilized for this research are those from Laurel, Haggis-Burridge and Csikszentmihalyi. Brenda Laurel distinguished interactivity in three overarching categories: frequency, range and significance, which are all related to how much freedom the player has in a game. Csikszentmihalyi distinguishes seven components of enjoyment, which in the context of video-games can be seen as “flow”. Flow is the sense of enjoyment that one experiences when playing an activity which absorbs one’s attention and makes the player lose the sense of time and self. In the context of this research’s theoretical framework, flow was seen as a part of immersion. Immersion, as Mata Haggis-Burridge defines, is divided in four overarching categories: systemic immersion, which is

seen as a state of flow, spatial immersion, empathic/social immersion and narrative/sequential immersion.

The theories presented by these three scholars posed themselves as a great starting point to build the a-priori code; however, when applied to the case study, some interesting findings revealed themselves. Firstly, once the code started to be applied to the case study, it was apparent that interactivity and immersion could not be entirely separated, especially in the context of this research. Specifically, two elements from the interactive code tree were very closely related: 'Interaction with the painting' and 'Interaction with NPC'. When doing the qualitative content analysis, many of the notes and screenshots related to these elements and three codes from the immersion tree - specifically 'game mechanics', 'environmental interaction' and 'engagement with character' were so closely related or overlapping that they had to be seen as connected. This was then translated in a change of the code tree, which then had these elements connected (see *Table 5*) The change of perspective, even if seemingly drastic, made the process of analysis much smoother and showcased that interactive elements are fundamental for an enjoyable and immersive experience.

Table 5

Finalized Coding Tree with Interactivity and Immersion Merged Together.



The coding tree showcased itself to be an appropriate tool for analyzing the case study in question; however, it had its benefits and limitations. Although there was no text whatsoever, which would have made the coding process easier, the codes were comprehensive and specific enough to allow an accurate recognition of when a specific element of the video game could be labeled. Taking notes was also extremely useful to keep

track of interactive and immersive elements and to better organize the observations done during the gameplay. However, there were a few elements that had to be eliminated, which is one of the greatest limitations of this research. Codes such as 'loss of self-consciousness' and 'alteration of time' were too difficult to research in this context, as it can be highly subjective how someone perceives time and loss of sense of self; furthermore, the researcher would be paying too much attention, which would skew the observation even more. Because they were deemed too difficult to observe objectively, the data retrieved was either merged or eliminated. However, even though it is a limitation, it still offers important insights; for example, it showcases that being in a state of flow and losing oneself into the video game is possible, but can vary depending on the subject. Furthermore, it might guide future researchers into approaching a similar matter with at least two parties: the researcher and the tester, which was not possible in this case.

As briefly mentioned beforehand, one of the elements of *Please, Touch the Artwork 2* which made the gameplay particularly enjoyable and that induced a state of flow, were the character interactions with non protagonist characters (NPCs) and with the protagonist himself. By playing the game, the player gets to know more not only of the artworks by James Ensor, but also the character of Ensor himself. In fact, the player plays as the skeleton of James Ensor, which goes around and helps his creations -characters of all sorts ranging from people to animals and objects-. In the end scene, the focus is on the painter; the player helps him to start painting by fulfilling the challenge to find several paint brushes. Once the final challenge is complete, the skeleton of James Ensor starts to paint and has flashbacks of Ensor's self-portraits and pictures. This encourages the player to focus not only on the paintings, but on the painter as well. Furthermore, helping the NPCs creates a social kind of immersion, which creates a sort of bond, even with inanimate objects. One noticeable element specific to this game is that, as previously mentioned, there are NPCs of all sorts, which -though not exclusive- is a rather unique feature in a video game of this sort, which also can create a sense of enjoyment and amusement. As discussed in the analysis chapter, NPC and character interaction is one of the main elements of how a video game such as *Please, Touch the Artwork 2* can become an extension of a museum exhibition. Thanks to this sense of social immersion, which can create a connection to the characters in a painting or with the painter themselves, the audience can find a nuanced way to interpret and enjoy the paintings; the can feel connected to the characters in them, learn more behind the history or lore of the character in a painting, and also to learn more about the artists themselves.

Another interactive element which helps the player with feeling immersed in the video game is environmental interactivity. Environmental interactivity refers to how a player can trigger and interact with the virtual world presented. In this research, it was observed and recorded with the help of a few codes, namely 'interaction with the painting', 'environmental interaction' and, often, 'sensory immersion', though the last code was not exclusively related to the environment. As a small reminder, the virtual world of this particular video game consists in paintings, specifically James Ensor's paintings. The protagonist, which the player can control, can wander around the paintings, going from one scene to another. Often, to unlock more scenery and progress in the game, the player has to solve certain challenges, such as finding a set number of objects or having to repair a broken canvas. It is by actively interacting with the artworks, as the title of the video game encourages, that the player can appreciate the overall artworks and the details in it. By having to find hidden objects, the player has to focus on the details, sometimes by zooming in; this feature encourages the viewer to not only appreciate the painting, but to actively look into the details, with the possibility to interact with it and to virtually touch the paintings. Lastly, together with environmental interaction, one last aspect made the game particularly enjoyable; good game design dictated by ease of access to different skill levels, good challenge-skill balance and clearly defined goals and objectives showed themselves to be crucial in creating a state of flow and, thus, create an enjoyable experience.

5.2 Theoretical, social and practical implications

Overall, it was good game design and the possibility to interact with the virtual environment and the characters that showcase how a video game such as *Please, Touch the Artwork 2* can become a continuation of a traditional museum exhibition where these elements are difficult to incorporate otherwise. Though this research bases itself on only one case study, the outcomes of the findings may extend beyond the research question itself and apply to situations outside the context of this study. The implications of this research's findings can be summed up in three main points of discussion: theoretical, social and practical.

The theoretical implications refer to how the findings of this research can contribute or challenge the pre-established theories of the field. This dissertation does so by encouraging cross-disciplinary integration of museum study and video game study, specifically under the lens of how video games can become an extension of museum exhibitions. This might help

redefining the museum experience and to evolve it even further from a static experience to a more dynamic and engaging activity. Furthermore, this research sheds light on how much interactivity, immersion and flow are connected with one another by offering a nuanced perspective on the connection between these three fundamental topics.

On a social level, broadening the knowledge of how a video game can aid museums can have fundamental impacts on the engagement of educational institutions such as museums. As discussed in the introduction, museums are a core institution in society, both as an economical center and, most importantly, cultural point. It is thus fundamental to find new strategies to increase their impact and for them to remain relevant. Utilizing video games as a mean to attract a diverse -and often younger - pool of people is one of these strategies, and interactivity and immersion remain fundamental for attracting them and creating a more engaging experience. Furthermore, focusing on which interactive and immersive elements to focus on can help guide people in the sector of museums and even education to create an engaging learning environment.

Finally, practical implications of this research are related to the creation of video games for museums. Firstly, it invites museums to think outside the box when in need to engage and attract a wider audience; though virtual elements are starting to be introduced to the sector, there is still not enough attention to video games as a tool. As this research demonstrates, video games can create a higher engagement with the paintings, the characters and the painters themselves through interactive and immersive elements. Paying close attention to integrating these elements in a complementary video game may prove itself to be beneficial to engage and attract the audience. Elements such as letting the audience manipulate and change the paintings or being able to interact with the characters in them are not achievable within a traditional museum exhibition that has a regular observation-based experience of artworks. By shedding light on how video games can become an extension of a traditional exhibition through these elements, this research invites museums to allocate resources to the creation and study of related video games.

5.3 Limitations and future research

As this research aims at tackling how video games can be an extension of museum exhibitions, one of the main limitations was due to the research gap on the topic. There seems to be sufficient literature on the introduction of game-like elements within the physical space of museum exhibitions, but rarely the focus is on the video game itself. As a consequence,

this thesis can be considered as experimental, which may come with its limitations. For example, the methodology and method of analysis was solely applied to one video game; if applied to a different case study, there is a chance that the findings might be slightly different. I invite future researchers to try it on different case studies, to widen and contribute to this fascinating field of research.

A further limitation for this research was due to the researcher and the test subject being the same person. Though this offered the possibility to analyze and interpret the majority of the codes with a knowledgeable and academic approach, it became a challenge to research elements such as the loss of sense of self or time, which are important elements in the context of flow. Perhaps, a separation between the researcher and the player could have been beneficial in this context, as future research may possibly prove.

Finally, though the goal was to be as objective as possible, I recognize the possibility that my own biases and preconceptions might have influenced the process; what I may find relevant when researching and analyzing, a different scholar may not. In this context, I therefore invite other scholars with different backgrounds to follow a similar approach and add to the field their own findings and perspectives.

In the context of future research, there are a few elements, related to accessibility and education, that I would like to bring into consideration for interested scholars. Having an exhibition available online in the form of a video game can signify an ease of access from people who may not be able to enjoy the exhibition in person due to physical, mental, financial or geographical constraints. Video games have been shown to be beneficial to increase accessibility; thus it might greatly contribute to the field researching video games in the context of museum exhibitions under the lens of accessibility. Furthermore, paying closer attention to how the implications of this study might impact the field of education would also be a great contribution to the ever-expanding knowledge on video games and museum exhibitions.

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List of Abbreviations

NPC(s): non-protagonist character(s)

Appendix A: Code Book

https://drive.google.com/file/d/1bpZHrtj8OUaQPZSeHASNnAJj6SeP3bFZ/view?usp=sharing

Appendix B: Data file

All links to available platforms for downloading *Please, Touch the Artwork 2*: https://studiowaterzooi.com/links/

Link for Steam page of *Please, Touch the Artwork 2*: https://store.steampowered.com/app/2600140/Please_Touch_The_Artwork_2/

Raw data collection: https://drive.google.com/drive/folders/1TNz4TLu4gQSjaWbc7ONyic-Gjc66kTVc?usp=sharing

Appendix C: James Ensor self portrait by the easel

Figure C1

Ensor voor zijn schildersezel - Self-portrait of James Ensor by his Easel.

Note. The author of this painting is James Ensor (1890). Picture retrieved from *Wikipedia*.

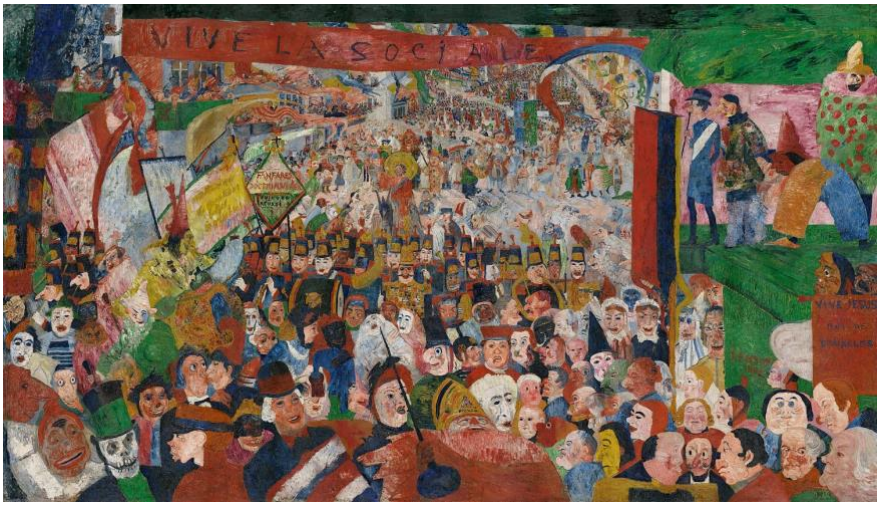
Collection: Koninklijk Museum voor Schone Kunsten Antwerpen.

https://en.wikipedia.org/wiki/James_Ensor#/media/File:Ensor_voor_zijn_schildersezel,_James_Ensor,_1890,_Koninklijk_Museum_voor_Schone_Kunsten_Antwerpen,_2809.001.jpeg

Appendix D: Christ's Entry into Brussels

Figure D1

Christ's Entry into Brussels in 1889



Note. The author of this painting is James Ensor (1887). Picture retrieved from *Wikipedia*.

https://en.wikipedia.org/wiki/Christ