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**FULFILLING GAMING EXPERIENCE WITHOUT  
BEING FULLY IMMERSED**



UNIVERSITY OF JYVÄSKYLÄ  
FACULTY OF INFORMATION TECHNOLOGY  
2021

## ABSTRACT

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Fulfilling Gaming Experience Without Being Fully Immersed

Jyväskylä: University of Jyväskylä, 2021, 66 pp.

Information Systems, Master's Thesis

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Immersion is an essential element in the context of video games. Immersion has been researched for almost two decades, yet it is still a scattered concept. Other concepts, such as flow and presence, share some traits with immersion and are strong influence in the background of immersion. Immersion is believed to be an important element for game experience. There are a few tools to measure immersion and game experience. Using one of them, a study has concluded that immersion is stronger in *The Elder Scrolls V: Skyrim* when played from first-person perspective. *Skyrim* is a game that lets the player choose whether they play in first- or third-person perspective.

This thesis focuses on immersion and game experience in *Skyrim*. For the empirical study, 10 participants answered a pre-questionnaire and then played *Skyrim* from their least preferred perspective that they reported in the pre-questionnaire. After an approximately 15- to 20-minute-long gameplay session, the participants filled a post-questionnaire consisting of the Immersive Experience Questionnaire (IEQ) and the Game Experience Questionnaire (GEQ) Post-game module. The participants were then interviewed with a semi-structured interview. The results of this study suggest that a player can experience a positive gaming experience without being fully immersed, while playing *Skyrim* from an unfamiliar camera perspective.

Keywords: immersion, flow, presence, camera perspective, video games, game experience, fulfilling gaming experience

## TIIVISTELMÄ

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Miellyttävä pelikokemus pelaajan olematta täysin immersoitunut

Jyväskylä: Jyväskylän yliopisto, 2021, 66 s.

Tietojärjestelmätiede, pro gradu -tutkielma

Ohjaaja: Lakanen, Antti-Jussi

Immersio on olennainen elementti videopelien kontekstissa. Immersiota on tutkittu jo lähes kaksi vuosikymmentä, mutta se on käsitteenä silti hajanainen. Muut käsitteet, kuten flow ja läsnäolo, jakavat joitakin piirteitä immersion kanssa ja ovat vahvasti immersion taustavaikuttajina. Immersio on todettu tärkeäksi elementiksi pelikokemuksen kannalta. Immersion ja pelikokemuksen mittaamiseen on olemassa muutamia työkaluja. Yhdellä näistä on voitu todeta immersion olevan vahvempi *The Elder Scrolls V: Skyrimiä* pelatessa ensimmäisen persoonan perspektiivistä. *Skyrim* on peli, jota pelaaja voi itse valita pelaavansa ensimmäisen tai kolmannen persoonan perspektiivistä.

Tässä tutkielmassa tarkastellaan immersiota ja pelikokemusta *Skyrimissä*. Empiirisessä tutkimuksessa 10 osallistujaa vastasivat alkukyselyyn, jonka jälkeen he pelasivat *Skyrimiä* vähemmän käyttämästään kuvakulmasta, joka määräytyi alkukyselyn vastausten perusteella. Noin 15 – 20 minuutin mittaisen pelisession jälkeen haastateltavat täyttivät jälkikyselyn, joka koostui immersioskyselystä (IEQ) sekä pelikokemuskyselyyn (GEQ) pelin jälkeisestä moduulista. Tämän jälkeen osallistujia haastateltiin puolistrukturoidulla haastattelulla. Tutkimuksen tulokset viittaavat siihen, että pelaaja voi kokea positiivisen pelikokemuksen olematta täysin immersoitunut, pelatessaan *Skyrimiä* vähemmän käyttämästään kameraperspektiivistä.

Asiasanat: immersio, flow, läsnäolo, kameraperspektiivit, videopelit, pelikokemus, tyydyttävä pelikokemus

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# 1 INTRODUCTION

Video games are everywhere. They provide entertainment, experiences and social interactions. They can be a way to relax and they can be a way to challenge yourself. In the context of video games, the state in which a player is in a focused state, is called immersion. Research on immersion has existed for almost two decades now. There is a common understanding among players that immersion happens, when a game is so good that it really pulls you into the game world. It is seen as a benchmark for a good game.

There is research that proves that first-person perspective in *The Elder Scrolls V: Skyrim* (Bethesda, 2011) is more immersive than the third-person perspective (Denisova & Cairns, 2015). Yet not all players prefer the first-person perspective (Denisova & Cairns, 2015) and there are new third-person games developed every year. Immersion is not the key to a fulfilling gaming experience, but immersion is one important element in video games nevertheless (Jennett et. al., 2008). As someone who has heard numerous claims that *Skyrim* can only be played in first-person perspective, and that third-person perspective has no place in the game, it was an intriguing topic to choose for this study. Based on these claims that first-person perspective is the way to play, it was assumed that participants would prefer the first-person perspective. It was fascinating to see how people would feel when asked to play *Skyrim* in third-person perspective, as the developers did make switching between the two camera perspectives a feature of the game. To make things interesting for research, it was decided that participants would play from their "other perspective", to see if the feature really had such a big of an effect or if preference just plays a much bigger role than people care to admit. *Hellblade: Senua's Sacrifice* (Ninja Theory, 2017) is a game that was built on making the player have a distinct experience: the developers consulted a neuroscientist and psychosis expert to try and de-stigmatize people with psychosis. The game is played from third-person perspective, and the player is guided through Senua's journey with psychosis while experiencing hallucinations and voice-hearing. (Lloyd, 2018) Could this mean that games focused on experience, rather than purely on the mechanics, would choose third-person perspective? Having both perspectives freely available for players to switch between,

could *Skyrim* be meant to be experienced through one perspective for one purpose, and the other for another? Did the developers intentionally give the player the option to either choose between a more combat-oriented playthrough in first-person perspective and a more experience-oriented playthrough in third-person perspective, or are both meant to be used in a single playthrough?

While the definition of immersion is still not entirely clear in academics, players might have a more unified understanding of immersion. As academics have not been able to agree on one unified definition for the concept of immersion, but rather have their own ways of explaining immersion and what it relates to (Brown & Cairns, 2004; Denisova & Cairns, 2015; Ermi & Mäyrä, 2005; Nacke & Lindley, 2008), it would be interesting to hear players' thoughts on the topic once more. Denisova and Cairns (2015) compared immersion levels of the first and third-person perspectives in their research, coming to the conclusion that first-person perspective is more immersive, yet some players still prefer the third-person perspective if given the choice. Jennett et. al. (2008) argued that immersion does not guarantee a fulfilling experience. To help understand why the industry still offers third-person games, a fulfilling gaming experience was embedded into the topic to accompany the players' thoughts on immersion. Thus, the research question *Can you have a fulfilling game experience without being fully immersed, when playing Skyrim from an unfamiliar camera perspective?* was chosen. This study will look further into immersion and its relation to a fulfilling gaming experience as a subjective experience.

The first part of this study is a literature review. Chapter 2 focuses on immersion as a scattered definition within the academic research, yet understood by players as a concept. Other related concepts, such as flow and presence, are then briefly introduced, as they have overlapping features with immersion. Chapter 3 introduces the main two camera perspectives used in video games and what research exists of those, concluding the literature review in an overview of immersion and fulfilling gaming experience. The second part is conducted as qualitative research, more specifically conducting semi-structured interviews. It was chosen as the method for this study, as it was deemed to be the most fitting research method to answer the research question. Chapter 4 explains the study design and procedure of this study. The interview part of the study builds upon previous studies, implementing recommendations from them, such as focusing on the camera perspectives and having the participants rate their own immersion on top of using questionnaires to determine the calculated immersion score. Chapter 5 introduces the results of the interviews, which are further discussed in Chapter 6, going over the results with the literature.

## 2 IMMERSION

This chapter introduces the different approaches to immersion and some of the related concepts that have overlapping features with immersion, yet are their own concepts entirely.

### 2.1 Immersion

Immersion in gaming has been researched for almost two decades, yet the definition of it is still not unified among academic research. Immersion is not exclusive to gaming, as other media have been described immersive as well. However, within the research of immersion in video games, there is more than one agreed understanding of the concept. Most understandings of immersion make sense in the gaming context, overlapping even, yet remaining as varying definitions.

Brown and Cairns (2004) divided immersion into three levels: engagement, engrossment and total immersion, as they suggest that immersion describes the degree of involvement a player has with a game. These three levels were visualized for clarity and can be seen in Table 1. The authors describe the first stage of immersion, engagement, as the lowest level of involvement with a game. Engagement happens before any other level, and for the player to get to this level, they need to invest time, effort and attention into the game. According to the findings of the study, the amount of these investments increases with each level of immersion. However, there are two barriers that might prevent a player from reaching even the first level of immersion: access and investment. Access includes the player's preference of games they would want to play, for example a certain genre, as well as the process of learning the game controls. Investment includes the player's invested time into the game, the effort put into learning the game mechanics and how to play, and the expected rewards when succeeded in a task within the game. Lastly, attention, or willingness to concentrate, is an im-



TABLE 1 Immersion levels visualized based on Brown &amp; Cairns (2004)

| <u>Immersion level</u>                              | <u>Characteristics of the level</u>  | <u>Barriers</u>  |
|---|--|--|
| Engagement  | Player is interested but not emotionally attached to the game.<br>Player invests time, effort and attention.<br>Attention or willingness to concentrate starts here.   | 1) Access: player preferences (genres, controls)<br>2) Investment: time invested, effort put into learning, expected rewards   |
| Engrossment   | Player starts getting emotionally attached to the game.<br>Player becomes more involved with more time invested.<br>Player becomes less aware of themselves and their surroundings. The player might even consciously turn off lights or increase the game volume to enhance their experience. | 1) Game construction: how well the player feels the game is constructed. Does the player feel respect towards the developers?  |
| Total immersion (the "being inside the game" stage) | Player becomes detached from the real world and only the game world matters.<br>Player invests more of their attention at this point. Attention is divided to visual, auditory and mental attention. The more (numbers of) attention is invested in the game, the stronger the immersion).     | 1) Empathy: deeper attachment to the game character(s).<br>2) Atmosphere: game construction (continuation from engrossment). Combination of game's graphics, plot and sound. |

portant part of the engagement level, yet its importance becomes greater in the next two levels. In this first level of immersion, the player is interested in but not yet emotionally attached to the game. (Brown & Cairns, 2004)

Engrossment is the next level of immersion, according to Brown and Cairns (2004), and happens only after engagement has been achieved. At this level, the player becomes even more involved and engrossed in the game. The barrier that might prevent the player from entering this level is game construction. The player might start feeling respect towards the creators of the game, if the game is constructed well and the effort put into making the game becomes obvious to the player. The authors noticed that at this level the player starts getting emotionally more attached to the game, due to their own investment into the game. At this level, the player is also less aware of themselves and their surroundings. The player might pursue this on purpose, by turning off lights and increasing the volume.

Total immersion is achieved last of the three levels, and going through the previous levels is a prerequisite to get there. Brown and Cairns (2004) equate total immersion to presence. Players described this level of immersion as being inside the game. The player is eventually feeling detached from the real world, and only the game world matters at this point. The barriers for reaching this level are empathy and atmosphere. Empathy relates to attachment from the earlier level, but is a deeper feeling of connecting between the player and a character or characters. Atmosphere develops from the earlier level's game construction, when the combination of the game's graphics, plot and sound form the atmosphere. However, these elements need to stay relevant to the game characters' actions and locations. When the atmosphere is created, it can be used to keep the attention of the player, who can in turn invest more of their attention and effort into the game, thus becoming and staying more immersed. Attention can be further divided into visual, auditory and mental attention. These three elements are important to immersion, and Brown and Cairns (2004) seemed to find a correlation between the level of immersion and the number and types of sources of attention (Brown & Cairns, 2004).

Ermi and Mäyrä (2005) divided immersion into three different categories, based on their research on how children experience gameplay and immersion. These three categories are sensory, challenge-based and imaginative immersion. These categories were also visualized for clarity, and can be seen in Table 2. Sensory immersion includes the audiovisual elements of a game. This is the most easily experienced category, as even a bystander can experience the audiovisual elements of a game someone else is playing. This also makes it the easiest category for an inexperienced player to experience as well, and this alone can make the player focus on the game world entirely. Challenge-based immersion on the other hand requires the game to be played in order to be experienced. Ermi and Mäyrä (2005) describe this category as the achievement of satisfying balance between challenges and abilities. To experience challenge-based immersion, the player is required to have some motor skills or mental skills, often both on some level. Lastly, imaginative immersion comprises of the complex world and stories the game offers to the player, even if the game is not classified as a role-playing game. At the center of this category are the characters and story elements in the game world, absorbing the player in. This category lets the player use their imagination, empathise with the characters and enjoy the game world in general. (Ermi & Mäyrä, 2005)

Cairns, Cox, and Nordin (2014) describe immersion as a cognitive state of focus that leads to dissociation from the real world. However, one does not completely detach themselves from the world while being immersed, but can still receive information from their surroundings. According to the authors, offering an opportunity for challenge and involvement in the game world, leads to

TABLE 2 Immersion categories visualized based on Ermi &amp; Mäyrä (2005)

| <u>Immersion categories</u> | <u>Characteristics of the category</u>  |
|-----------------------------|---|
| Sensory                     | Audiovisual elements of the game.<br>Easiest category to experience, can be experienced by watching someone else play.<br>The first category for a new player to experience.<br>This category alone can make the player focus on the game world entirely. |
| Challenge-based             | Satisfying balance between challenges and abilities.<br>Requires gameplay / interaction to be experienced. Motor skills and mental skills are put to test.  |
| Imaginative immersion       | The complex world and stories for the player to experience.<br>Characters and story elements that absorb the player in.<br>This category lets the player use their imagination, empathise with the characters and enjoy the game world in general.        |

this state. (Cairns, Cox & Nordin, 2014) According to a study by Nordin, Cairns, Hudson, Alonso and Gámez (2014), the difference in immersion when playing a mixed reality game on a mobile device, as opposed to playing a game on a desktop, is statistically significant but not remarkable. This is not due to a dissociation in the real world, but instead in the level of emotional and cognitive involvement during gameplay. (Nordin, Cairns, Hudson, Alonso & Gámez, 2014)

## 2.2 Other relevant terminology and concepts

While immersion is the most relevant concept for this study, there are other concepts that should also be covered. Especially the terminology should be elaborated on, as some of the other concepts overlap with immersion. First to appear is flow, predating immersion all the way to the 1970s in other than game context however. Another interesting concept is presence, which overlaps with immersion to an extent, yet is still its own separate concept. These two concepts are important to understand immersion, and are thus covered in this section. Jennett et al. (2008) had come to the conclusion that immersion is clearly related to flow and cognitive absorption, as they all have similar indicators of high engagement: temporal dissociation and awareness of surroundings. They argued that immersion, however similar to the other concepts, is certainly distinct as a concept and is vital to understanding the interaction between people and video games. They liken immersion to the experience of playing video games. To measure immersion, Jennett et al. (2008) created a questionnaire, in which the players evaluate immersion on their own, by answering different questions on a five-

point Likert scale. (Jennett et al, 2008) Denisova and Cairns (2015) measured immersion in their study by using the questionnaire created by Jennett et al. (2008). By using the results from the questionnaire, Denisova and Cairns (2015) analysed that immersion consists of five measurable components: cognitive and emotional involvement, real world dissociation, challenge, and control. (Denisova & Cairns, 2015; Jennett et al., 2008)

### 2.2.1 Flow

According to Ellis, Voelkl and Morris (1994), Csikszentmihalyi (1990) has researched flow experience as early as the 1970s, and in 1975, flow was conceptualized as "an optimal experience that stems from people's perceptions of challenges and skills in given situations" (Ellis, Voelks & Morris, 1994; Csikszentmihalyi, 1990). According to Chen (2007), flow can appear in any fun activity. However, for polishing a gaming experience, Chen (2007) focuses on the flow zone. The zone appears on a chart, where one axis is challenge, meaning the challenge the game offers, while the other axis is abilities, meaning the player's abilities to play the game. The closer to the challenge-axis we get, the more anxiety is experienced, whereas the further we get from the challenge, and the closer to abilities, boredom is experienced. The flow zone is the zone in the chart, in which a player experiences flow. The zone varies depending on the level of the player, the flow zone for a novice player is closer to the boredom factor than the anxiety factor, as their abilities are less honed compared to a more skilled player who is most likely looking for more challenge to experience flow. (Chen, 2007)

Cairns, Cox and Nordin (2014) describe immersion as a graded experience, whereas flow is described as a state that the player is either in or out of. They describe flow as an extreme experience, as it requires all of its nine characteristics fulfilled in order to be experienced at all. Yet, it is claimed that it can be experienced with any activities. According to the authors, flow integrates the "self" in the activity and makes it more enjoyable. They also argue that while in flow state, the player is totally absorbed in the activity, becoming completely unaware of their surroundings. Flow can also be sustained over a longer period of time, while immersion, especially total immersion, is a more fleeting state. (Cairns, Cox & Nordin, 2014)

Brown and Cairns (2004) saw the connection between immersion and flow, as attention is central to achieving flow. The authors indicate that flow and immersion have overlapping features, for example, attention is important to both, the player might lose their sense of time and even of themselves. Skill and knowledge is also important in both flow and immersion, yet the authors remind us that total immersion is a much more fleeting state of being, and so more difficult to achieve than flow. (Brown & Cairns, 2004)

### 2.2.2 Presence

Based on Brown and Cairns' three levels of immersion, Cairns, Cox and Nordin (2014) describe total immersion as the stage of immersion where the player is completely involved with the game and experiences the feeling of "in the game" while playing a video game (Cairns, Cox & Nordin, 2014). Brown and Cairns (2004) equated total immersion to presence in their study. They mention that presence has been used with the intention to estimate immersiveness. According to Brown and Cairns, previous studies on virtual reality have defined presence as the state of a player's cognitive and perceptual systems being tricked into believing the player is somewhere else than where they physically are. The authors themselves claim that total immersion is presence. (Brown & Cairns, 2004).

Jennett et al. (2008) mention that previously Witmer and Singer (1998) had tried to measure presence subjectively, using the factors they believed to determine presence: control, sensory, distraction and realism. Jennett et al. also argue against Nunez and Blake (2006), according to whom there are presence games (role playing games, first-person shooters) and non-presence games (abstract puzzles). Jennett et al. (2008) argue that presence is possible without immersion, for example, a boring task might make someone feel present in the virtual environment it takes place in without losing awareness of time. (Jennett et al., 2008)

According to Denisova and Cairns (2015) presence has repeatedly been used as a synonym of immersion. However, the authors emphasize that while immersion does not fully depend on physical dimensions of technology, presence does. Denisova and Cairns (2015) also mention that the first-person camera perspective lacks social presence, which can only be achieved if the playable character is visible in third-person. The authors note that previous research on first and third-person perspectives believe that the first-person perspective gives the player a higher feeling of ownership and thus leads to higher presence. (Denisova & Cairns, 2015) Nordin et al. (2014) said that immersion is similar to presence and flow. However, presence enables the player to feel as if they are in the virtual environment, if not completely, at least partly or in some sense. Sensory immersion is not exactly equivalent to presence, as increasing a monitor's size to increase sensory immersion does not apply to presence. (Nordin et al., 2014)

### 3 EXPERIENCE AND CAMERA PERSPECTIVES IN VIDEO GAMES

This chapter introduces gaming experience, explains first-person perspective and third-person perspective: the two camera perspectives available in *Skyrim*, and briefly covers immersion and its relation to gaming experience.

#### 3.1 Gaming experience

Gaming experience is somewhat connected to immersion, but most importantly, is created by the player themselves. Camera perspectives on the other hand are mostly decided by the game designers and developers, yet some games give the player the choice to switch between camera perspectives.

Immersion is not the sole reason for people to play games (Nordin et al., 2014). Ermi and Mäyrä (2005) based their research of immersion on gameplay experience, and wanted to conceptualize gameplay experience to provide a model to organize some of the fundamental components found in it. These components are the sensations, thoughts, feelings, actions and building of meaning that the player engages in and creates for themselves. (Ermi & Mäyrä, 2005) Hunicke, LeBlanc and Zubek (2004) had previously explained that games should be developed with the player in mind. Developing games with a starting point like this helps to make the games more experience-driven rather than feature-driven, in turn making games more fun for the player. (Hunicke, LeBlanc & Zubek, 2004) However, according to Ermi and Mäyrä (2005), gameplay experience is not something that can be built ready for the player, but rather something that the player actively participates in creating. The previous experiences, the current desires and anticipations shape the way the player experiences the game for themselves. Even though gameplay experiences are dependent on the player's inner feelings, they also rely highly on context. As an example, the authors describe a situation where a player has enjoyed their gameplay experience, but changes their mind to think it was a waste of time after hearing that a friend has succeeded in the

same session more effortlessly. (Ermi & Mäyrä, 2005) Ermi and Mäyrä (2005) found that a common understanding of gameplay as a definition was that by playing games for a long enough time, the player will form their own view of this puzzling concept. The view, be it good or bad, is based on the player's own experience, which can be seen as the balance between the abilities of the player, and the challenge posed by the game. This led the authors to conceptualize immersion based on the qualities of flow by Csikszentmihalyi. However, Ermi and Mäyrä noticed that players often choose the game they want to play based on their mood, seeking an experience appropriate for their desired emotional response. Sometimes this can mean that the player seeks for challenge and wants to feel failure before succeeding, in order for that success to feel euphoric. (Ermi & Mäyrä, 2005)

Chen (2007) claims that a happy life is full of various long- and short-term flow experiences. These flow experiences can be from all aspects of life, be it work, family or even daily entertainment. Based on the concept of flow by Csikszentmihalyi, Chen extended the concept to flow zones. A flow zone is the experience of a player balancing the challenge of the game with their own abilities, hoping to overcome the challenge. Keeping the player in the flow zone suited for them is of utmost importance, as too much challenge causes anxiety and the player gets overwhelmed, whereas too little challenge will cause the player to lose interest in the game and stop playing. Within the players, there are different skills and expectations for challenges. Chen mentions the simple task of moving the camera in a 3D game as an example for different player skills. Players who have not played 3D games will find this task challenging, maybe even frustrating. The best way to let gamers of different skill levels enjoy the same game, is to let the players enter their respective flow zone. This means that the game designers should make different options for the players to choose from, based on their skills. However, Chen notes that players will not know what to choose if there are too many choices, and that continuously having to make choices can interrupt gameplay. The best way therefore is to offer adaptive choices, embedded into the core activities of the game. (Chen, 2007)

Denisova and Cairns (2015) found in older studies that the first-person perspective is used for projective accuracy, while third-person perspective is used for exploration and interaction. After conducting their own study on immersion in first and third-person perspective, Denisova and Cairns (2015) came to the conclusion that the importance of camera perspective in creating the gaming experience needs further studies. (Denisova & Cairns, 2015)

### **3.2 Camera perspectives**

There are many options for the camera perspective when creating a game. Denisova and Cairns (2015) mention that traditionally, games have the option to choose an audience-view, isometric, bird's eye, trailing camera, first person or third person perspective. The chosen camera perspective offers the player a

specific perception of the game space and supports a distinctive experience of immersion. Changes in the camera perspective can support the experience and create different experiences. The first-person perspective is believed to be the most immersive (Denisova & Cairns, 2015). First-person perspective is common especially in shooter games, whereas third-person perspective is common in character and narrative focused games (Jennett et al., 2008).

As described by Nacke and Lindley (2008), first-person perspective removes the player avatar from the screen, putting the player in the game world in first-person perspective. This is done to give the player a more integrated experience in the game world. Nacke and Lindley (2008) focus their research on first-person games as they assume that the first-person perspective helps the player identify as the character they play as. (Nacke & Lindley, 2008)

Denisova and Cairns (2015) also claim that in first-person perspective, the player feels part of the story and the environment. They state that it is believed that more experienced players would prefer the first-person perspective. The authors found in their study that first-person perspective is more immersive than the third-person perspective in a role-playing game. In their study, 40 participants were divided into two groups of 20. One group played the game in first-person perspective, while the other group played the same game in third-person perspective. Denisova and Cairns (2015) measured the participants' immersion by using the immersion experience questionnaire, developed by Jennett et al. in 2008 (Jennett et al., 2008). In the end, 16 out of 40 participants expressed their preference of first-person perspective, if allowed to choose between the two perspectives. However, according to the results of the questionnaire, first-person perspective was more immersive out of the two perspectives used in the study. Also notable was that the player's preference of perspective did not have an effect on the feeling of emotional involvement or control of the game. (Denisova & Cairns, 2015)

To understand the purpose of using both first and third-person perspectives within the same game, it is essential to look at how some games approach the use of camera perspectives ingame for specific instances. *Dead by Daylight* (2016) is an asymmetrical multiplayer horror game, which promotes the two perspectives on their Steam page. In the game, players play as a team of four survivors in third-person perspective, against one killer in first-person perspective. The game promotes the third-person perspective as having the advantage in situations where the player should be more aware of their surroundings, while first-person perspective is promoted to be for the player to focus on catching their prey. (Behaviour Interactive, 2016) Thus, the game restricts the amount the player with the role of killer can see the environment.

*Paladins: Champions of the Realm* (2018), a team-based shooter game developed by Evil Mojo Games and published by Hi-Rez Studios, features both first-person and third-person perspectives in most of the game modes. (Hi-Rez Studios, 2018) First-person perspective is used in *Paladins* (2018) after the player gets off their mount (Evil Mojo Games, 2018), as seen in the in Figure 1. This allows



the player to focus more on targeting the other team with their attacks, mostly shooting a weapon or using magic.



FIGURE 1: First-person perspective while on foot in *Paladins* (Evil Mojo Games, 2018)

Denisova and Cairns (2015) note that third-person perspective is often used in exploration and interaction. Third-person perspective allows for observation of the played character, and a better sense of the player's position in the surrounding area. According to what Denisova and Cairns (2015) found in previous studies, third-person perspective distances the player from the game world as the playable character can be seen on the screen. The authors suggest that in this setting, the character performs actions and makes decisions, while the player themselves is only the person controlling the character. This perspective also allows the player to navigate the game world easier, making this a more ideal approach for less experienced players. (Denisova & Cairns, 2015)

Third-person perspective is used while mounted in *Paladins*, allowing the player to travel the map with more awareness of where other players are situated before engaging in combat (Figure 2). This seems to somewhat support what Denisova and Cairns (2015) mention in their study: the game world can be navigated easier in third-person perspective. (Denisova & Cairns, 2015).



FIGURE 2: Third-person perspective while mounted in *Paladins* (Evil Mojo Games, 2018)

### 3.3 Immersion and fulfilling gaming experience

Jennett et al. (2008) mention in their article that immersion is not equivalent to a fulfilling experience. They conducted a study to understand what determines immersion. They wanted to look into this matter, so that in the long run, better games can be developed. According to the authors, many studies on immersion have been based on qualitative research, which is a subjective way of measuring immersion. Jennett et al. (2008) suggested that immersion could, in fact, be measured both subjectively and objectively. For measuring immersion better, the study consisted of a questionnaire that, instead of focusing solely on immersion, borrowed some aspects from other concepts as well, such as flow, cognitive absorption, and presence. The authors assumed that gamers have the capability to identify immersion, even if the academic definition of it is unclear to them. Based on this, and the definitions of concepts similar to immersion, the authors developed an immersion questionnaire. (Jennett et. al., 2008)

Jennett et al. (2008) mentioned that even with a wide range of appearances and design choices, one aspect is common to most, if not all, games. Games have the ability of drawing players' attention almost completely, to the extent of the player not hearing another person calling their name, noticing the passing of time, and moreover not worrying about their everyday life outside the game world. Players could thus become hyper engaged in the game. (Jennett et. al., 2008)

Chen (2007) suggested that the player should stay in a flow zone in order to have a good gaming experience (Chen, 2007). However, Jennett et al. (2008) note that a challenge too great, which can make the player lose, such as a boss fight, can be seen as breaking the flow. Yet, it can still provide the player with an experience that is both satisfying and immersive. The authors concluded their study

by stating that immersion is not always perceived as a positive experience, as it can include negative emotions and feelings of uneasiness. (Jennett et al., 2008) As Ermi and Mäyrä (2005) established, the gaming experience is built by the player themselves, by interacting with a game. However, they mention that the experience can radically change after the gameplay session itself. Interestingly, they suggest that a player, having played a game and found it fun, can rapidly change their opinion of the experience upon hearing that a friend had no challenge at all in the same part of the game. Although the player had built their positive experience and enjoyed the game while playing, hearing someone else's experience can negatively affect their already good experience and turn it into a bad one. This social context is fundamental to gameplay experiences, even if the game in question is not played interacting with other players in-game, as mentioned in Ermi and Mäyrä's example case. (Ermi & Mäyrä, 2005)

Jennett et al. (2008) came to the conclusion that players can identify their own immersion. This was found in their study, where in a single question participants were reliably able to reflect their degree of immersion. (Jennett et al., 2008) On that note, Lehmusjoki (2017) suggested in their study that on top of using the Immersive Experience Questionnaire by Jennett et al. (2008) to get a measure of immersion, the participants should also be asked to rate their own estimate for their immersion in future studies (Lehmusjoki, 2017). Nordin et al. (2014) covered the topic of gaming experience in their article, with a focus on immersion. They mentioned that immersion is not the sole reason people play games. Immersion is only an element of the experience that helps us understand gaming experience as a whole. Their study focused on mixed reality games, which arguably would not be considered very immersive with Jennett et al.' (2008) claims that being highly immersed in a game makes re-engaging with the real world more difficult. Nordin et al. (2014) said that mixed reality games can be immersive while connecting the virtual world and the real world. (Nordin et al., 2014)

## 4 RESEARCH METHOD

This chapter explains the study design and procedure of this study, covering the pilot study that contributed to the actual study, the procedure of the actual study, how participants were chosen and considerations about the instruments used.

### 4.1 Study design and Procedure

This study was conducted as qualitative research, more specifically conducting interviews. Thus, this method is the most fitting research method to answer the research question. This study was designed in two phases. The first phase included some pilot questions for the interview. The second phase was divided into three parts. As seen in Table 3, the second phase started with participants filling out a short pre-questionnaire which determined their gameplay camera perspective for a short gameplay session, followed by filling out questionnaires and lastly a discussion based on the questionnaire answers and some open-ended questions.

**TABLE 3 The study comprised of two separate parts: A pilot study (Phase I) and the actual study (Phase II). Phase I contributed to the research setting of Phase II.**

| Phase I   | Phase II                          |  |   |   |
|---|-----------------------------------|--|---|---|
| Pilot study that contributed to Phase II: Procedure, the actual study | 1. Pre-questionnaire (Appendix 1) | 2. Gameplay session (15 to 20 minutes) | 3. Post-questionnaire form (Appendix 2) | 4. In-depth, semi-structured interview (Appendix 3) |

Denisova, Nordin and Cairns (2016) noted that a single questionnaire is not enough to assess all of player experience's aspects. They compared the

components of Immersive Experience Questionnaire (IEQ), Game Experience Questionnaire (GEQ) and Player Experience of Need Satisfaction (PENS) and saw that they had similar components, whereas they all focus on their own theories and have their own approaches to how the player experiences games. (Denisova, Nordin & Cairns, 2016) Johnson, Gardner and Perry (2018) agreed with Denisova, Nordin and Cairns that a single questionnaire is not enough to assess all aspects of the experience (Johnson, Gardner & Perry, 2018).

For the purpose of this study, it was decided that IEQ and GEQ would be used. Based on the ambiguity of immersion encountered in the pilot questions, it was decided that the participants of the interviews would not be asked so broadly about immersion in the open ended questions, instead the Immersive Experience Questionnaire (IEQ) developed by Jennett et al. (2008) would be used. The questionnaire consists of 31 Likert items on a scale from 1 to 5. The questionnaire gives an immersion score and measures player immersion experienced during gameplay. Most questions are asked in a positive way, but some questions are asked in a negative way, and were reversed when calculating the final score. The IEQ covers 5 tags, under which all the questions fall: cognitive involvement, real world dissociation, challenge, emotional involvement, and control. Out of all the questionnaire questions, four questions were about basic attention, six questions were about temporal dissociation, another six were about transportation, different six questions were about challenge, five were about emotional involvement and finally four were about enjoyment. This questionnaire was validated with a study of 260 participants, out of which 244 had filled the questionnaire completely and correctly. (Jennett et al., 2008) The Immersive Experience Questionnaire was previously used in a study by Denisova and Cairns (2015) in which participants played *The Elder Scrolls V: Skyrim* (Bethesda Game Studios, 2011), so it was chosen as a good way to measure immersion for this study as well.

To ensure that immersion was not the only component measured, the Game Experience Questionnaire (GEQ) Post-game Module (Ijsselstein, de Kort & Poels, 2013) was also added to the Post-questionnaire. The Post-game Module consists of 17 statements, which the participant answers on a Likert scale from 0 to 4. This questionnaire measures how players feel after having stopped playing a game and gives four experience scores: Positive experience, Negative experience, Tiredness and Returning to Reality. As experience is key to this study, this questionnaire was deemed a good fit for this study as well. The rest of the GEQ modules were not included in this study, as with the participants filling a pre-questionnaire and the Immersive Experience questionnaire already, it was decided that including more modules would be too time consuming and could tire the participants too much to want to discuss the topics afterwards.

On top of measuring immersion and gaming experience from the questionnaires, the participants were asked to rank their immersion on the same Likert scale as the IEQ was, as suggested by Lehmusjoki (2017), to also get the subjective measure of immersion. To better understand the participant's own estimate of their immersion, the participants were asked what elements added to

or reduced from the amount of immersion they experienced. The participants' Post-questionnaire answers were then looked at, asking for participants to elaborate on the questions with the highest and the lowest scores. This was done to further understand what the participants meant with each such answer and gave the participants a chance to elaborate on their answers. This was also assumed to lead to some interesting insights that the participant would not cover themselves unless asked.

## 4.2 Phase I: Pilot study

A few pilot questions were asked from a singular volunteer prior to finalizing the actual open-ended question for discussion at the end of the interviews. This volunteer did not participate in the finalized study later. The pilot questions covered topics such as moods, seeking challenge, immersion, and gaming experience:

- 1) How much would you say your mood dictates what games you play? Do you skip dailies if you're just not in the mood to play the game? Or do you force yourself to play them through even if you don't really want to?
- 2) Do you want to challenge yourself every time you play a game? Do you sometimes want to just get through the game tasks without any challenge/ fear of failure?
- 3) Name 3 games you feel have been immersive. Can you describe immersion in these games? Is immersion different in all of them? Do the games share some characteristics that you consider important for immersion?
- 4) How about gameplay/gaming experience? How would you describe the concept? How is it different to immersion? Which one is more important and why?

The question about moods was to determine about moods affecting which games the pilot volunteer plays and moods affecting logging into games that offer login rewards. This question was based on the findings from Ermi and Mäyrä (2005) that gameplay experience is highly context dependent but also relies on player expectations. According to their study, players seek games according to the emotional response they will get from playing a game. Depending on this factor, players will choose to play different games. (Ermi & Mäyrä, 2005)

The question about seeking challenge asked whether the pilot volunteer looks for challenge on a regular basis, and whether or not they play games that do not offer challenge so that they can play without fear of failure. This question was based on previous studies and articles emphasizing that players look for challenge when playing games. Ermi and Mäyrä (2005) defined one immersion category around challenge, Cairns, Cox and Nordin (2014) said that games offering challenge leads to immersion, Denisova and Cairns (2015) found that one immersion component is challenge, and the Immersive Experience Questionnaire from Jennett et al. (2008) includes questions about challenge (Ermi & Mäyrä, 2005;

Cairns, Cox & Nordin, 2014; Denisova & Cairns, 2015; Jennett et al., 2008). Chen (2007) also focuses on challenges, specifically the flow zone, where the player's abilities and the offered challenge meet (Chen, 2007). The pilot volunteer explained that they like to be challenged but not too much. They mentioned *Dark Souls* (FromSoftware, 2011) as a game they did not enjoy at all, as it is heavily based on moving from one challenge to another.

The question about immersion asked the pilot volunteer to name three games that made them feel immersed, describe immersion in these games and share characteristics that they consider important for immersion to occur. The issue with this question was that the pilot volunteer had to ask what immersion means. As mentioned before by Jennett et al. (2008), players have the capability to identify immersion, but the academic definition is not clear to them (Jennett et al., 2008). To understand how immersion can be understood without inception of the academic definition in the pilot volunteer's mind, they were simply asked to answer the question with their understanding of immersion. The pilot volunteer mentioned experiences of relating to the story and sympathizing with the characters. The three chosen games all had mentions of story, character development and psychological impact on the player through the story and characters. The pilot volunteer ended their answer by mentioning a game they absolutely loved, yet somehow did not find immersive.

The last question about gaming experience asked the pilot volunteer to describe the concept of gaming experience, how it differs from immersion, and which one is more important. The biggest issue with this question was the lack of clear definition for immersion. The pilot volunteer struggled to find ways to explain their answer. They gave examples of instances where the game mechanics were not interesting to them, but the story was so captivating they wanted to get to the end of it. They finally concluded that immersion and gaming experience are two very different concepts that are hard to compare directly but can influence one another. The issue with this question was that by using the words *gameplay* and *gaming experience*, the pilot volunteer focused more on the mechanics rather than the overall experience. To avoid this later on, it was decided to ask further questions from the questionnaire answers instead, to avoid too much focus on the mechanics only.

The pilot interview questions helped in deciding how to approach immersion and game experience in the interviews. Further diving into the Immersive Experience Questionnaire (Jennett et al., 2008) and the Game Experience Questionnaire (Ijsselstein, de Kort & Poels, 2013) answers was deemed as a more cohesive way to cover the topics from the questionnaires. Instead of asking too broadly about games that made the participants feel immersed, the interview questions instead focused on games that let the player switch between first and third-person perspectives, like *Skyrim* does. The rest of the pilot questions were deemed redundant, as the topics would be covered in the questionnaires and could be elaborated on based on the participant's answers to those questions.

### 4.3 Phase II: Procedure

*The Elder Scrolls V: Skyrim* (Bethesda Game Studios, 2011) was chosen as the game to play, as it has the possibility of playing in both 1st and 3rd person perspective. *Skyrim* was used in a study by Denisova and Cairns (2015) where the authors came to the conclusion that the first-person perspective was more immersive. Based on this previous study, it is assumed again that first-person perspective is more immersive than third-person perspective, specifically in *Skyrim*. Since *Skyrim* came out in 2011, and additional downloadable content was released later, Bethesda Softworks released an enhanced version with all downloadable content included, called *The Elder Scrolls V: Skyrim Special Edition*, in 2013. This is the only version available for purchase on Steam in 2021, so this version was chosen as the version to be used in this study. The save file compatibility does not work backwards, so participants were required to have the Special Edition of *Skyrim* to be able to participate in the study.

The pre-questionnaire asked for a preference in the camera perspective, which was used to determine which perspective the player would be playing in. Since there already exists a study comparing the immersiveness of the two perspectives, concluding that the first-person perspective is more immersive, this study was not comparing the immersiveness of the two perspectives, but rather focusing on the experience of the opposite camera perspective based on the player's preference. This meant that participants who expressed their preference of playing in the first-person perspective while playing the game, were assigned to play in the third-person perspective. Likewise, the participants who expressed their preference of playing in the third-person perspective were assigned to play in the first-person perspective. There was a big imbalance in the participants playing in first-person perspective and participants playing in third-person perspective, as only one participant played in first-person for their gameplay session. This meant that all participants, excluding one, were more used to playing *Skyrim* in first-person perspective.

As seen in Figure 3, the character is not fully visible in first-person perspective. In combat, the equipped weapons are visible, and move in front of the camera while in use. The third-person perspective positions the character in the middle of the screen, as can be seen in Figure 4. The camera can be zoomed in or out to see more or less of the surroundings.

All participants shared their screens during the Zoom call and showed their faces through a web camera. Most of the participants shared their game view without sharing the game sounds. This was mostly good, as the game sounds might make it more difficult to observe what the participants are saying while playing, in case they commented on something. For sound specific reactions, the





FIGURE 3: *Skyrim* in first-person perspective (Bethesda Game Studios, 2011)

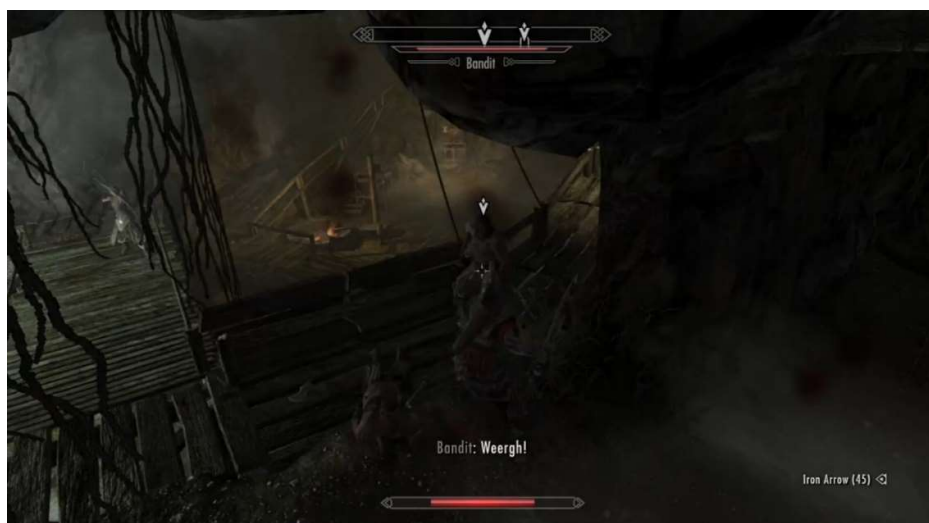


FIGURE 4: *Skyrim* in third-person perspective (Bethesda Game Studios, 2011)

participants sharing their gameplay without sound on were asked to clarify if they for example got startled by something they heard in-game. The participants were given a premade save file to use during the experiment. The save file had a generic character standing in front of a bandit mine, and a handful of quests to start with. The participants were instructed to enter the bandit mine and fulfill the quest objective to kill the bandit leader, after which they would exit the mine and have the freedom to continue exploring the open world for the rest of the session. All participants had played *Skyrim* before, so the difficulty level was left to what the participants had it set for themselves.

The mine was chosen as a starting point for the experiment save file, so that the participants would experience a more limited indoors area before venturing into the open world. All participants were expected to finish exploring the

mine and still have enough time to freely continue playing in the open world within the gameplay session's time limit. The participants were asked to pause the game sometime between the 15 and 20 minutes, depending on what the participant was doing in the game, as to not interrupt the participant in the middle of a combat situation, or during any dialogues or cutscenes.

After the gameplay session, participants were asked to fill another questionnaire, this time covering the Immersive Experience Questionnaire (IEQ) on the first page and the Game Experience Questionnaire (GEQ) Post-game Module on the second page. This second questionnaire was followed by an interview to further discuss the experience and any topics arising from the gameplay and questionnaires.

#### 4.4 Participants

Participants of this study were primarily sought by using the email lists of the University of Jyväskylä, but also with personal contacts. Due to the ongoing pandemic, all interview sessions were carried out through Zoom, with the requirement that the participants own the game themselves. With unfortunately strict and specific conditions to participate in the study, not enough participants were reached through the email lists only, and other participants were allowed as they arose with word of mouth. Half of the participants were reached from email lists, while the rest became aware of the study through personal contacts.

Participant ages were in the ranges from 20 to 39 years old. 80% of the participants fell into the first range of 20 to 29 years old, while 20% fell into the 30 to 39 years old range. The gender variation was 70% male, 30% female.

#### 4.5 Considerations about the instruments chosen

As Lehmusjoki (2017) piloted his study, he found out that there are certain issues with the IEQ:

- some questions are too vague to understand: whether the question means surroundings inside the game world, or surroundings in the real world
- some questions are yes/no questions, but are answered on a 1 to 5 Likert-scale

Lehmusjoki (2017) also suggested that on top of using the IEQ, the participant should be asked to rate their immersion. (Lehmusjoki, 2017) Following this suggestion, the participants of this study were asked to fill in the IEQ and then estimate their immersion on a scale from 1 to 5, the same Likert-scale used in the IEQ. The overall score is easier for the participant to rate on the same scale, but for comparing the score with the IEQ score, it was divided by the number of questions to get a score on the same scale.

## 4.6 Analysis

The Immersive Experience Questionnaire (IEQ) gives an immersion score of minimum 31 and maximum of 155. To compare these to the estimated immersion asked of the participants during the interview, the IEQ scores were adjusted (Table 4) as seen below.

**TABLE 4 Immersive Experience Questionnaire score ranges adjusted to Likert scale of 1 to 5**

| IEQ score range (31 to 155) | Estimate equivalent score (1 to 5) |
|-----------------------------|------------------------------------|
| 31 - 55                     | 1                                  |
| 56 - 80                     | 2                                  |
| 81 - 105                    | 3                                  |
| 106 - 130                   | 4                                  |
| 131 - 155                   | 5                                  |

Participants were asked to rate their immersion after having filled out the questionnaires and were asked to elaborate on the elements that led them to the decision. Along with the semi-structured interview questions, participants were asked to elaborate on IEQ and GEQ questions, based on their answers. The emphasis for elaboration was on questions that the participant had given the lowest or the highest possible score, but also on some recurring questions based on other participant interviews and questions that were relevant to the discussion with the participant. Some participants would mention a topic during their gameplay session, and that topic could be elaborated on during the interview. The interviews were not fully transliterated, but comprehensive notes were taken. Interesting points in the notes were then highlighted and compared to other participant interviews. The recurring topics from the interviews were grouped into themes to discuss in the results chapter, and then discussed with literature in the discussion chapter.

## 5 RESULTS

This chapter introduces the results of the study, including participant quotes divided into themes that arose from the interviews with the participants.

### 5.1 General observations on immersion and game experience

As seen in Table 5, most participants estimated their immersion equivalent to what their IEQ score was, with four participants estimating the same score and one estimating half a score lower, still within the same range. Four participants estimated their immersion lower than what their IEQ score was. Only one participant estimated their immersion higher than their IEQ score. This participant's score was at the higher end of the IEQ range, which reflects with their estimate being higher.

The highest IEQ score was 117 and the lowest was 88. Half of the participants talked during their gameplay session, while the other half did not comment or only made a few remarks to themselves. Talking during the gameplay session did not seem to have any effect on the IEQ scores. However, those who had talked during the gameplay session scored higher in the GEQ Post-game Module's Positive experience scores. All IEQ scores were within the ranges that translated to scores of 3 or 4 on the 1 to 5 scale. Participants' estimated immersion on the other hand ranged from 2 to 4 on the same scale.

The participants were asked for elements that added to or reduced their immersion. Three participants: P3, P7 and P9, said the character animations and movement felt clunky and outdated, which reduced their immersion. They were especially aware of the animations and movement as they played in third-person perspective. P1 said that playing with a premade character and having so little time to play influenced their estimated immersion. P2 said that sounds helped them get immersed. P3 and P4 said looting was too difficult in third-person perspective, which reduced their immersion and P4 got annoyed with how difficult such a simple task was. P5 felt that playing *Skyrim* in

**TABLE 5 Participant IEQ scores, estimated immersion, whether these two reflect each other and whether the participant talked during gameplay or not**

| Participant | IEQ score (max 155) | IEQ score on a scale of 1 to 5 | Estimate (1 to 5) | Scores reflect each other | Talked during gameplay                |
|-------------|---------------------|--------------------------------|-------------------|---------------------------|---------------------------------------|
| P1          | 108                 | 4                              | 4                 | Yes                       | Yes                                   |
| P2          | 116                 | 4                              | 4                 | Yes                       | No (apart from a remark about sounds) |
| P3          | 116                 | 4                              | 4                 | Yes                       | Yes                                   |
| P4          | 112                 | 4                              | 3.5               | Yes                       | No                                    |
| P5          | 90                  | 3                              | 2                 | No (estimate is lower)    | Yes                                   |
| P6          | 88                  | 3                              | 2                 | No (estimate is lower)    | No                                    |
| P7          | 102                 | 3                              | 3                 | Yes                       | No                                    |
| P8          | 117                 | 4                              | 3                 | No (estimate is lower)    | Yes (a few remarks here and there)    |
| P9          | 102                 | 3                              | 4                 | No (estimate is higher)   | No                                    |
| P10         | 109                 | 4                              | 3                 | No (estimate is lower)    | No                                    |

third-person perspective was “so out of their comfort zone that they could not get into it properly”. P6 said that the short playtime and being under observation lowered their immersion remarkably. P6 also said they would rather play *Skyrim* on console, which also influenced the score. P7 had their screen brightness too low to see much in the first area, which also made it difficult for them to progress at first. P8 said that seeing the character’s back while in such a small space felt unnatural to them. P8 said their immersion would have been higher if they played in first-person perspective and in virtual reality. P10 also said that their immersion would have been higher if they played in first-person perspective. Like P8, P10 also felt like seeing the character in a small space was uncomfortable. P10 described it as claustrophobic, explaining that it felt like there was not enough space to move around as the camera hit the walls and ceiling.

The Game Experience Questionnaire gives four scores out of the 17 questions in the questionnaire. As seen in Table 6 below, the average score for Positive experience was 1,9, the highest score was 3 and lowest was 0,5. The average score for Negative experience was 0,5, the highest score was 1 and the lowest score was 0. The highest score for Negative experience came from a participant who gave no answer to one of the questions, but the missing answer can be assumed not to have skewed the score as this participant’s answers were close if not the highest of all the participants.

**TABLE 6 Participant GEQ Post-game Module scores**

| Participant        | Positive experience<br>(Q1, Q5, Q7, Q8, Q12, Q16) | Negative experience<br>(Q2, Q4, Q6, Q11, Q14, Q15) | Tiredness<br>(Q10, Q13) | Returning to Reality<br>(Q3, Q9, Q17) |
|--------------------|---|--|-------------------------|---------------------------------------|
| P1                 | 2,6   | 0,6  | 1                       | 0,6                                   |
| P2                 | 1,5   | 0,5  | 0                       | 1,3                                   |
| P3                 | 3   | 0,6  | 2,5                     | 2                                     |
| P4                 | 0,6   | 0,5  | 0                       | 1,3                                   |
| P5                 | 2,5   | 1 (with Q4 unanswered)                             | 1                       | 3                                     |
| P6                 | 1,3   | 0,5  | 0                       | 0,6                                   |
| P7                 | 0,5   | 0,83   | 0                       | 0                                     |
| P8                 | 3   | 0  | 0                       | 1,3                                   |
| P9                 | 2   | 0  | 0                       | 1                                     |
| P10                | 1,83  | 0,3  | 0                       | 0,6                                   |
| Average            | 1,9   | 0,5  | 0,45                    | 1,2                                   |
| Highest<br>(max 4) | 3   | 1  | 2,5                     | 3                                     |
| Lowest<br>(min 0)  | 0,5   | 0  | 0                       | 0                                     |

As seen in Table 7, the average IEQ score was 106, the highest being 117 and the lowest being 88. The average hours participants had played *Skyrim* was 712,45 hours, the highest being an estimate between 1500 and 2000 hours, and the lowest being one hour. The average hours played was expected to be relatively high, as participating in the study required the participants to own the game and still want to play it. The second lowest time played was P2, who said they had never finished the main storyline. P7 had previously lost interest in the game after playing for one hour, and can thus be assumed to never having finished the main storyline. The third lowest time played was P3, with more than 200 hours more than P2, and was thus assumed to have finished the main storyline at least once.

Most participants claimed in the interview that their immersion could be higher if the perspective was to their preference. Most participants still reported a positive experience even if their IEQ score is at the lower end out of all the participants. As half of the participants talked during their gameplay session, the four GEQ Post-game Module scores were cross-referenced with whether the participant talked or not. Participants who talked during the gameplay session seemed to yield higher Positive experience scores. P3 and P8 had the highest Positive experience scores at a score of 3, while P7 had the lowest score at a score of 0,5. The second lowest score for Positive experience was P4 with a score of 0,6. P8 having the highest Positive experience score coincides with their comments about the scoring. P8 said "All negative questions are in zero because I enjoyed playing. And the positives are in 3 or 4 because I enjoyed playing. And I felt like I did well in the game." P8 had the lowest Negative experience score at a score of 0, which is consistent with their comment and the fact that P8 had the highest

TABLE 7 Cross-referencing

| Participant     | Talked during gameplay                | IEQ score (max 155) | Hours in <i>Skyrim</i> | Positive experience | Negative experience    | Tiredness          | Returning to Reality | Said immersion could be higher |
|-----------------|---------------------------------------|---------------------|------------------------|---------------------|------------------------|--------------------|----------------------|--------------------------------|
| P1              | Yes                                   | 108                 | 1300                   | 2,6                 | 0,6                    | 1                  | 0,6                  | Yes                            |
| P2              | No (apart from a remark about sounds) | 116                 | 55 (only original)     | 1,5                 | 0,5                    | 0                  | 1,3                  | Slightly implied               |
| P3              | Yes                                   | 116                 | 226,5                  | 3                   | 0,6                    | 2,5                | 2                    | Yes                            |
| P4              | No                                    | 112                 | 860                    | 0,6                 | 0,5                    | 0                  | 1,3                  | Yes                            |
| P5              | Yes                                   | 90                  | 392                    | 2,5                 | 1 (with Q4 unanswered) | 1                  | 3                    | Implied                        |
| P6              | No                                    | 88                  | 800                    | 1,3                 | 0,5                    | 0                  | 0,6                  | Yes                            |
| P7              | No                                    | 102                 | 1                      | 0,5                 | 0,83                   | 0                  | 0                    | No                             |
| P8              | Yes (a few remarks here and there)    | 117                 | 700                    | 3                   | 0                      | 0                  | 1,3                  | Yes                            |
| P9              | No                                    | 102                 | 1500 - 2000            | 2                   | 0                      | 0                  | 1                    | No                             |
| P10             | No                                    | 109                 | 1000                   | 1,83                | 0,3                    | 0                  | 0,6                  | Yes                            |
| Average         | -                                     | 106                 | 712,45                 | 1,9                 | 0,5                    | 0,45               | 1,2                  | -                              |
| Highest (max 4) | -                                     | 117 (P8)            | 1500 - 2000 (P9)       | 3 (P3, P8)          | 0,83 (P7)              | 2,5 (P3)           | 3 (P5)               | -                              |
| Lowest (min 0)  | -                                     | 88 (P6)             | 1 (P7)                 | 0,5 (P7)            | 0 (P8, P9)             | 0 (P2, P4, P6-P10) | 0 (P7)               | -                              |

Positive experience score out of all participants. P5 had the highest Negative experience score, however as they did leave one of the questions unanswered, the actual highest is P7. This corresponds with P7 having the lowest Positive experience score, and the third lowest IEQ score. P7 did struggle a lot during the gameplay session and had the least experience with the game, which explains these scores. P3 had the highest Positive experience score and yet also ranked among the highest for Negative experience, right after P7. Though the Positive experience scores reached 3 out of 4, Negative experience scores stayed within the score of 1 out of 4. This would explain P3's scores, however P3 also had the highest score for Tiredness with a score of 2,5. The average score for Tiredness was 0,45. P1 and P5 both scored a 1, while the rest of the participants all scored 0 in

Tiredness. All three participants with a higher score in Tiredness than 0 talked during the gameplay session, however there were participants with a score of 0 who also talked. Drawing any conclusion on this would require a bigger sample size. The highest score for Returning to reality was P5 with a score of 3, and the lowest was P7 with a score of 0, the average score being 1,2. Again, drawing conclusions on this requires a bigger sample size, but three of the highest scores are participants who talked during the gameplay session.

Looking at the hours participants had clocked in *Skyrim* against their IEQ, it seemed that the more hours players had spent, the stronger their immersion was. However, this seemed to stop between 700 and 800 hours, as the lowest IEQ score was P6 at 800 hours with an IEQ score of 88. There seemed to be a pattern of a descending IEQ score after 860 hours: P4 with 860 hours and IEQ score of 112, P10 with 1000 hours and IEQ score of 109, P1 with 1300 hours and IEQ score of 108 and finally P9 with 1500 to 2000 hours and IEQ score of 102. The sample size is not big enough for any conclusions here, however, it would be good to check for this kind of pattern with a bigger sample size in the future.

During the gameplay part of this study, some participants had a mindset of contributing to the research, while others completely forgot that they were participating in a study. Some participants were more nervous or put-off by the situation than others, but the score pattern of P3 differs from all the other participants. P3 did sigh and seemed relieved when told that the gameplay session was over. Knowing that there was a time limit in the gameplay session seemed to have made them feel that they "got through it" and felt a sort of relief knowing that they managed to get to the end.



## 5.2 Recurring themes from the interviews

Six recurring themes arose from the interviews. These themes and their short descriptions can be seen in Table 8.

**TABLE 8 Recurring themes overview**

| Theme   | Description  |
|---|--|
| The camera perspectives in general              | First-person perspective is good for an efficiency and combat focused playstyle. Third-person perspective is good for when the player wants to enjoy the visuals of the character as well.         |
| Character blocking the view                     | Only an issue in third-person perspective, where the player character is visible. The player cannot see behind corners or aim with a bow as efficiently as they would in first-person perspective. |
| Social presence and self-inserting              | Self-inserting could be used as a means to live the life of an alternative self or to have something familiar in an unfamiliar game world.   |
| Losing track of time and detaching from reality | Losing track of time happens often when playing <i>Skyrim</i> . Some participants had issues with controls, while others did not even think of the controls.                                       |
| Emotions and soundscape                         | Most participants had overall positive feelings about the gameplay session. Some participants expressed feeling nostalgia.   |
| Using mods                                      | <i>Skyrim</i> is a 10-year-old game and, as expected, participants said they use mods to enhance the graphics and to add mechanics and content to the game.  |

### 5.2.1 The camera perspectives in general

In the pre-questionnaire, participants were asked about their preference of using first or third-person perspective in *Skyrim*. As seen in Table 9, participants explained the advantages and disadvantages of both perspectives in detail. During the interview, participants also commented on the perspectives. Mostly the pre-questionnaire answers held up and were supported by the comments arising during the interview, however there were a few conflicting comments about third-person perspective.

In the pre-questionnaire, participants said that third-person perspective is good for looking behind corners and looking at surroundings in general. However, during the gameplay sessions and interviews, some participants claimed that it was difficult to see behind corners as the character was blocking their view. Another comment was that the player's gaze focuses on the character when it is visible, rather than the surroundings that were supposedly easier to

**TABLE 9 Participant comments on first and third-person perspectives in the pre-questionnaire and during the interview, conflicting comments underlined**

|              | Pre-questionnaire   | Interview  |
|--------------|---|--|
| First-person | <ul style="list-style-type: none"> <li>• works well indoors</li> <li>• good for exploration</li> <li>• easier to inspect nearby objects</li> <li>• player character never blocks player's view</li> <li>• good for dialogues</li> <li>• combat works better especially when fighting enemies that require more effort</li> <li>• player can better immerse themselves in the game world</li> <li>• enables player to see the world through player character's eyes</li> <li>• helps for more efficient playing</li> </ul> | <ul style="list-style-type: none"> <li>• feels restrictive and unnatural as the view is not as wide as a human view field in real life</li> <li>• makes it easier for the player to forget that they are controlling a character, as the player character is not visible</li> <li>• makes it more difficult to judge the distance of enemy attacks</li> <li>• combat is slightly more intimidating than in third-person perspective</li> <li>• easier to focus on objectives and targets, as the character is not visible</li> <li>• easier to self-insert in the game</li> <li>• stealth archer is better in this perspective</li> </ul>  |
| Third-person | <ul style="list-style-type: none"> <li>• <u>good for looking behind corners</u></li> <li>• good for sneaking to see surroundings (enemy locations etc.)</li> <li>• <u>good for looking at surroundings in general</u></li> <li>• works well when running around the more open outdoor areas</li> <li>• highlighted kill animations look nice</li> <li>• only option to inspect character cosmetics (animations, armor / costume designs)</li> </ul>   | <ul style="list-style-type: none"> <li>• character blocks the player's view too much (especially while looting / picking up objects / while aiming with a bow / <u>while looking behind corners</u> / difficult to see traps right in front of the character)</li> <li>• character movement and animations felt clunky to many participants</li> <li>• animations getting stuck slightly breaks the immersion</li> <li>• <u>player's gaze focuses on the character, rather than the surroundings</u></li> <li>• picking objects up is more difficult, as the pointer is slightly off</li> <li>• <u>good for exploring and seeing what happens around the character / planning attacks is easier as the area of view is bigger / easier to keep track of enemies during combat</u></li> <li>• combat gets frustrating as the character hits air instead of the enemy</li> <li>• makes the player character feel more distant as the character is always visible in front of the camera</li> <li>• diving is difficult as the camera stays too far from the character</li> <li>• <u>works indoors as the character movement is simple enough / feels suffocating in indoor spaces as the camera "hits" walls and ceilings</u></li> </ul> |

inspect in third-person perspective. This was directly contradictory with another comment that said that third-person perspective was good for seeing what happens around the character, implying that it was not bringing their focus to the character only. Contrary to what other participants had said, one participant claimed that third-person perspective works well indoors, as the character movements are simple enough. Another participant said the complete opposite, describing the indoors experience as suffocating. Talking about combat situations, one participant said that it was easier to plan attacks in third-person perspective, however executing said attacks proved frustrating as the distance was too difficult to estimate and the participant kept hitting the air right in front of the enemy instead of the enemy itself. The same participant continued that playing as a stealth archer is better in first-person perspective since aiming is better when in that perspective. They also said their usual playstyle benefits from the first-person perspective. One participant described the third-person perspective as making the game look silly and said the game is probably not supposed to be played from this perspective. They also speculated that they had no idea of the feature of switching between perspectives when they played *Skyrim* for the first time.

P1 explained the two perspectives, saying “In third-person, you can enjoy the view, and admire your character. In first-person you... well, you see what’s in front of you.” P1 also mentioned Photo Mode being a feature included in many games nowadays, and how this feature can help the player figure out their surroundings. P2 explained how choosing a perspective for games is heavily based on preferences. They said they prefer third-person perspective for most games, unless first-person perspective felt more natural for a good reason, for example for first-person shooters. They explained that the first-person perspective field of view is not as realistic as in real life, and that they feel restricted by the camera perspective in games, making third-person perspective feel more freeing and natural. P1 talked about *Skyrim* specifically being a game where choosing the perspective is up to the player’s preferences, although according to this participant, it is best experienced switching between the two perspectives for different purposes and gameplay styles. They mentioned melee attack distances being difficult to estimate in third-person perspective. P1 also mentioned racing games and installments from Fallout series giving the player the option to switch between first and third-person perspectives. P1 noted that driving games are most efficient when played from the third-person perspective, as it lets the player observe the car’s mass and shape. P4 said they prefer playing in first-person perspective, as their playstyle works better in first-person perspective. However, there was one specific situation where P4 would switch “Whenever I kill a dragon and I start absorbing the soul, (snaps fingers) instant [manual] switch to third-person, because the animation looks better in third-person. It looks so nice! I want to look at it.” P5 felt very disoriented ingame, describing it later as “being out of the map” and having issues figuring out which way was which, not recognizing places as they claimed they looked unfamiliar in third-person perspective.

Multiple participants mentioned combat being easier in first-person perspective. P6 said that harder combat situations that require more focus are easier

in first-person perspective, while P10 explained that while they would play the game in first-person perspective only, with the highest difficulty and a challenging enemy, they would switch to third-person perspective to get an advantage with the camera angles.

## 5.2.2 Character blocking the view

P3 said that seeing behind corners in third-person perspective was difficult as the character blocks the view. P10 said that third-person perspective feels like cheating because it lets the player see behind corners, unlike the first-person perspective. P3 said that it was difficult to see behind corners in third-person perspective, as the character stays in the middle of the field of view, essentially blocking the view. This was also obvious during the gameplay session of P1, who had to switch from third-person perspective to first-person perspective briefly to be able to fight small enemies in a narrow spiral staircase.

P1 mentioned that in third-person perspective, it is easier to see enemies trying to surprise the player by attacking from behind. However, sometimes the character would also block the player's view in these instances, especially if the combat instance is in a narrow area like a tunnel or a staircase. However, P1 said at the end of their gameplay session that third-person perspective works indoors as the movements are simple enough. They elaborated on this by saying that the character did not feel realistically heavy, which makes it easier to control the character, be it indoors or outdoors. The biggest difficulty observed in their gameplay session was in narrow spaces indoor, but otherwise indoor spaces did not seem to cause any trouble in third-person perspective.

P1 talked about some games using the third-person perspective to build stories of the playable characters. P1 also mentioned that third-person perspective works best in open world type of settings. Multiple participants talked about games that stay in third-person perspective, to explain how the two perspectives work in different games. P1 said that *The Witcher 3: Wild Hunt* (CD Projekt, 2015) puts a lot more cinematic emphasis on character movement, as the character is visible at all times. According to P1, character movements look and feel more realistic compared to *Skyrim*. P1 also mentioned *Dark Souls* (FromSoftware, 2011), saying that the perspective lets the player inspect the surroundings in less detail.

Multiple participants talked about archery in *Skyrim* being difficult in third-person perspective. P1 contemplated that using a bow would probably be a bit difficult in third-person perspective. P1 also explained that using a bow is very inefficient in third-person perspective. They continued that using spells would require less distance to the enemies, so it would probably be easier than using a bow. P3 described using a bow in third-person perspective "distant", which is what they also described the third-person perspective in general.

Aiming a bow in third-person perspective is difficult for two reasons. First, the character stays in the center of the screen, enhancing the feeling of blocking

the player view. Second, the position of the character is not coherent with the crosshair in the middle of the screen, as seen in Figure 5 below.



FIGURE 5: Archery in third-person perspective in *Skyrim* (Bethesda Game Studios, 2011)

While in first-person perspective, aiming a bow is slightly more coherent between the character position and the crosshair in the middle of the screen, as seen in Figure 6 below.



FIGURE 6: Archery in first-person perspective in *Skyrim* (Bethesda Game Studios, 2011)

Participants also gave examples of other games where the issue of the character blocking the aim is avoided by placing the player character off center. P2 mentioned that the *Tomb Raider* (2013) series reboot has solved this issue by moving the 3rd person camera from behind the playable character to the side while aiming, so that even though the character is still visible, it is not blocking the view of the

player, as seen in Figure 7 below. P2 remembered this when asked about games which use both first and third-person perspectives, as they felt that the aiming instance in *Tomb Raider* (2013) was very similar to a first-person perspective experience.



FIGURE 7: Archery in *Tomb Raider* (Crystal Dynamics, Inc., 2013)

*The Legend of Zelda: Breath of the Wild* (2017) also uses a similar solution, but instead of moving the camera to the side, the camera always hovers slightly higher than the character's center, as seen in Figure 8 below. P3 mentioned this when talking about aiming with a bow in third-person perspective during their gameplay session, comparing *Skyrim* to *Breath of the Wild* and wondering how it worked so well in the latter. P3 mentioned bow aiming and a skill for controlling the arrow in *Assassin's Creed: Origins* (Ubisoft Montréal, 2013). P3 said that in this case, if the camera wasn't already on the bow string when aiming, the skill to follow the arrow would probably feel too overwhelming, as the camera would have to dash from the character all the way to the flying arrow.



FIGURE 8: Archery in *The Legend of Zelda: Breath of the Wild* (Nintendo, 2017)

### 5.2.3 Social presence and self-inserting

P3 talked about social presence within a crowd of non-player characters when playing in third-person perspective. However, P3 mentioned that the player would still feel distanced from the characters. They wonder if they would feel more part of the group themselves if they did the same in first-person perspective. P3 also tried to scroll the third-person camera as close to the character as they could to “feel closer to the character” like they would in first-person perspective. P3 had recently played *The Legend of Zelda: Breath of the Wild* (Nintendo, 2017) and explained that in *Breath of the Wild*, the player character gives the player feedback on stamina depletion while climbing, which makes the player relate to the character more, even though the game is played in third-person perspective. P3 said “I feel like when [player character] starts climbing a mountain, I start sweating as well”.

P1 talked about self-inserting being easier in purely third-person perspective games. Their reasoning was that it adds to immersion and the credibility of self-insertion to see the player character running in the game world, as the character visually fits into the game world whereas they as a player would not visually fit. P5 mentioned a flight simulator, giving it as an example of a game that can be played from both first and third-person perspective depending on player’s own preference. P5 themselves felt more immersed playing it in first-person perspective, as they played with a joystick. P5 said that playing in third-person perspective could be fun too, but with the joystick they feel more immersed if they play in first-person perspective, seeing all the control panels. What P5 described was essentially self-inserting in the game, where even their physical surroundings mimic the game environment to enhance the experience.

P9 explained that in certain roleplaying games, they would enter a mindset of playing as an alternative self. In these cases, they would be able to self-insert, however it requires that specific mindset and ability to detach in the moment.

During this gameplay session, P9 was very aware that they were not the character inside the game.

P10 explained their habits for self-insert, or the lack of it, depending on the game and situation. P10 said there are games in which they would choose to self-insert to feel some level of familiarity in a game environment that is completely unfamiliar to them. They mention playing fantasy games for the first time, not knowing what factions the different races represent, and the safest bet being to play as a human as similar as they themselves are. P10 also said they have always played *Skyrim* as a self-insert, they described it as “I become the character and don’t just control a character”. P10 explained that when they play a game like *Skyrim* for the first time, they would try to make their ingame moral choices as close to what they would choose to do in real life as well. For a second playthrough, P10 would try to make their approach interesting by choosing to be completely evil, for example. Any further playthroughs would get more adventurous and would always have a special condition to make the playthrough different from the previous ones. They would also try to see what kind of scenarios the developers had prepared for.

P10 further explained that in games where the player character already has their own established story, it feels weird to try to self-insert. P10 said “The more established the character is with their backstory and all, the weirder it would be to play in first-person”. P10 felt that the story builds in gameplay, and also said that the world is so established in *Skyrim*, that they feel like the focus is on the world rather than the player character. P10 explained that “*Skyrim’s* world is so well built, there are books and stories that the focus is more about the world’s story, rather than the character’s story”.

#### 5.2.4 Losing track of time and detaching from reality

When asked about losing track of time, multiple participants said this happens fairly often when they play *Skyrim*. P3 “Yes, this is why I have played this game so much” they also said “When playing for longer, sometimes it’s [suddenly] been three hours. This happens very naturally with *Skyrim*” Although the gameplay session for this study was relatively short for each participant, lasting from 15 to 20 minutes, only two participants did give a low score to the question asking whether they lost track of time. These two participants were P6 and P9. Both P6 and P9 looked around them a few times during the gameplay session. The rest of the participants scored high and even commented on it during the interview. P2 said “Even though it was a short time, I lost track of time”. P3 said “I felt like time might be up soon but at one point I was wondering how far I could still run before time was up”. They also said that they would not be able to say whether it had been 10 or 20 minutes. P7 said they are quite picky with games, but once they find a game they like, they will play it for hours without realizing. During the gameplay session, P8 asked how long they still had but was only told they still had time. When asked about this during the interview, P8 explained that they completely lost track of time “Having played so much and knowing how easily I lose track of time in this game, I started asking about time way before the actual



time limit was over. I guess I was overcompensating when I asked about the remaining time". P4, P5 and P10 did not comment on the topic during the interview but did give the question the second highest score in the questionnaire. Not talking about *Skyrim* but other games, P5 gave an example of losing track of time as they mentioned "opening the game and suddenly it's 13 hours later". They also said that with games that offer a multitude of things to do at once that the passing of time becomes irrelevant.

Everyday concerns were mostly forgotten, or simply not thought about. Some participants (like P7) did not have any concerns, and thus rated the question a lower score. P2 said "Yeah, I did not think of everyday concerns while hitting some men with a knife" P5 had rushed home from work, which influenced their estimated immersion, yet they managed to forget about everyday concerns while playing. P9 said they felt they got so into the game that they did not think of any stressors during the gameplay session.

P2 said the situation might have added to feeling slightly more aware of self in real life. Similarly, P6 said that playing for such a short amount of time and being under observation lowered their score remarkably. P1 and P8 were disturbed during the gameplay session by noises from their phone and P1 had to close some message notifications on their computer. P9 said that someone tried to speak to them during the gameplay session, but decided to focus on the game instead of answering. P10 said there was some noise outside their apartment when the gameplay session started, but could not tell at which point the noise had stopped during the call.

One of the questions in the Immersive Experience Questionnaire asked about being aware of using controls while playing. P3 said "Yeah, true. Didn't even think of that. I wasn't really thinking that I was clicking on the mouse and using a keyboard while playing". P6 had issues with the controls, and felt frustrated to only have some of the combat functions available to use. P6 also pointed out that running was not in a button that is nowadays standard. P7 also made this remark during their gameplay session. P6 said they would have had no issues with the game controls, had they played on console. They felt too unfamiliar with the keyboard and mouse controls, as they have played *Skyrim* more on console. They also said that they most likely would have become unaware of using controls, had they played on console, or rather with a controller. P6 also said that although games have different control schemes on controller as well, most of them are standardized or pretty easy for them to get used to. P7 had issues with the controls due to not being too familiar with the game to start with. The biggest issue was however the running button being something different than what is pretty much standard in games nowadays.

P8 had no issues with the controls, and was quick to adjust the settings to their liking at the start of the gameplay session. However, P8 said they were completely aware of using controls the entire time. They suggested that playing in virtual reality, once used to, would help them completely forget about using controls while playing. P9 had to check the buttons for *Skyrim* but said they do not have to for other games, nor would they have to for *Skyrim* either, had they

played *Skyrim* more recently. P9 described the state of not having to think of controls as “flowiness”, while explaining that they could not reach this state this time. P10 said they accidentally kept switching to first-person perspective because they were so used to games using that key for interact nowadays. P10 also said they had their control scheme open on a second monitor, to quickly check the controls during the gameplay session. P10 admitted they had difficulties with the controls, but explained that “*Skyrim* just took me with it, even with the difficulties with the controls”. They further elaborated on this by saying that figuring the controls out was the first challenge, and figuring them out made them feel victorious.

P6 estimated their immersion really low, but still did not consider playing a waste of time. P6 said they never feel that games are a waste of time. For P6, gaming time is time off from work and other stress factors in life. They say gaming is escapism, in the same way that someone else might go for a run or to the gym. P6 continued with saying that gaming is also a social element nowadays: “I have a lot of friends whom with we play games, and while we’re at it we talk. I would never call them on the phone to ask them how they’re doing, but while playing it just naturally happens.”

### 5.2.5 Emotions and soundscape

P1 said they feel satisfied very often when playing *Skyrim*. Even when playing in a new situation with unfamiliar restrictions, it was satisfying to P1 to get to play a familiar game. P1 noted that while the situation was not as stress-free as when they would play on their own, they still felt very satisfied playing a game they like. P2 described a question in the Game Experience Questionnaire about being revived as a positive experience, overall happy feelings after progressing in the game. P2 said “Happy feelings more than negative”. They also mentioned that they felt like returning to play. P7 struggled with *Skyrim* during their gameplay session but when asked about an instance where they managed to play as well as they could, P7 said “It’s satisfying when you get a clean and stylish kill. It does make you feel powerful”. P8 said they felt powerful as they have capabilities ingame that they do not have in real life. They also said that had they managed to defeat a strong enemy successfully, they would feel proud. However, this time the difficulty level was slightly too low for P8, and they said nothing really offered such a challenge. P9 was asked if they always get moderately positive feelings when playing *Skyrim*, to which they answered: “Yeah, it’s really never given bad feelings. Overall positive feelings after playing”. P10 explained that they like to make a character so powerful they can take on any enemy even on the hardest difficulty. They say reaching that self-made goal makes them feel powerful and gives a different kind of satisfaction in the game.

P2 felt slight guilt for accidentally stealing something and then having to kill the witness. P10 explained that on second playthroughs when trying to be as evil as possible, there is slight guilt for the evilness, and P10 said they feel the need to remind themselves to stick to it. They said the guilt comes from the non-player characters reacting to the evilness of the player character. P10 also talked about a game forcing the player to participate in a terrorist event where they had

to shoot at civilians to not get caught as the infiltrator in the terrorist organization. P10 said it was surprising to them how guilty they felt playing a video game. They describe the instance by saying “I was so immersed that I just couldn’t fulfill the given tasks in the mission”.

P6 said they have felt “unbelievable frustration” when playing some games. P6 also said they have been asked why they play such games if they cause bad mood and frustration, elaborating that these questions have come from people who never played any video games themselves. P6 claimed that they usually stop playing and start doing something else before experiencing negative emotions. They continued by explaining how they had played a team game the previous night and felt responsibility to keep the team alive, but failed to do so and felt shame and disappointment towards themselves. Similarly, P7 said they would feel bad about not being able to play as well as they could, and it affecting other players, but said they would not lose any sleep over it. P7 said “If I play with other people, I might get a wider range of emotions, but if I play alone then less. Of course, if there is a difficult part in a game, I might get frustrated and other [negative feelings]”. P9 talked about playing with other players invoking negative emotions, talking about cases where players would not get along with each other even when playing on the same team, or where other players would try to do everything on their own even though the game requires players to cooperate with their teammates. P9 said they would sometimes get so engrossed with a game that they would need to shout to get over a frustration, especially if it was caused by something they had no control over.

Three participants said they felt nostalgia. Since *Skyrim* is a 10-year-old game, this did not come as a surprise. P5 said they felt revived in the sense of retuning to something nostalgic. P6 had not played *Skyrim* for years, so getting back to the game after a long time made them feel emotional already while installing the game. P6 described experiencing nostalgia when starting the game to test that it works. P9 explained that *Skyrim* is so nostalgic that playing it felt like going down memory lane. P9 had not played *Skyrim* for 6 years, so she said the feeling of nostalgia was strong.

P2 spent some time listening to game sounds, mostly relating to water. They had to mention this themselves, as the game sounds were not shared along with the visuals. P2 explained that sounds helped them get more immersed in the game world, although sometimes the sounds came from weird directions. P3 also interacted with water during their gameplay session, however, did not comment on the sounds while doing so. P5 said they experienced nostalgia through a familiar soundscape. P10 mentioned the game music when explaining what makes the game overall so beautiful that they stopped during the gameplay session to admire the game world.

Elaborating a question in the IEQ, P5 said that becoming so involved with the game that they would want to speak to the game would require time and emotional involvement, which they did not get to experience during this short gameplay session. P5 said they could possibly talk to the game directly in a more extreme situation that they described as “If not fully immersed in the situation,

at least getting a strong reaction during a plot twist or similar, I might shout my emotions at the game". P5 said they had played *Skyrim* for so many hours that they felt like it has become more of a way to relax and not have to focus so much anymore. P5 said there are less moments of discovery and surprise, than when they were playing for the first time for example. Their focus has shifted from emotional experience to more mechanical observations (bugs, AI behavior), which pulls them away from immersion. P10 said the limitations of the study (limited time to play, being under observation, maybe being nervous during the interview) made them feel less about having returned from a journey. P10 said they were too aware of the situation: having a character they did not make themselves and with all the other limitations, they could not form an epic adventure story inside their head.

### 5.2.6 Using mods

All participants were asked to prepare their game to be played without modifications, or mods, to make sure all participants were playing the base game and had a similar experience. As *Skyrim* is a 10-year-old game, which the community has tried to keep up to date and interesting with a vast pool of mods, some participants mentioned that they use them. P2 said they use mods to enhance their experience. P4 said they would normally use around 200 mods, mostly to enhance the graphics. P4 gave a question about the graphics and imagery the highest possible score, elaborating that "With mods, yeah, the game looks stunning. But even with the Special Edition graphics, and it's a 2011 game, it holds up pretty well." P5 on the other hand prefers to play without mods, as they feel that using mods disturbs their ability to immerse themselves. They said that mods often feel too obviously added onto the original game, instead of smoothly adding to the game. P5 also mentioned that they do not find graphics being the most essential element for their immersion. During their gameplay session, P8 said "Surprisingly good looking for a 10-year-old game without mods. Although, this is Special Edition, so I guess they added some graphic enhancements". P8 also later talked about mods that add new mechanics, such as the player character experiencing cold effects in certain areas. P9 said they like to add story content with mods, as they have played the main story so many times already. They also mentioned using a mod to enhance some basic combat mechanics that they described them being "a bit tricky" without.

## 5.3 Difficulties/things to consider

The standard keyboard button in games nowadays to make the character run is SHIFT, however in *Skyrim* the pre-set button is ALT. This was not clear to a few of the participants and was not noticed by the interviewer until the discussions

after the gameplay session ended. This issue would not have occurred if the participants had been provided with a control scheme, however with the participants using their own devices and game installs to participate, it was assumed that the participants would know the pre-set control schemes well enough. With most of the participants having hundreds of hours spent in game, some of them had modified the pre-set control scheme to suit their own preferences and playstyles. Some participants were more familiar with making these modifications to the controls during the experiment, however a few of the participants were either not familiar enough with the game, or with the device they were using to play the game for this research, to make these changes on their own. P3 pointed out that there is very little visible feedback to the player, when the character is hurt by effects, such as fire. P5 said that the feedback on whether the player gets hit or not was slightly awkward.

## 6 DISCUSSION

As the topics that arose in the interview were grouped into six themes, these themes were further examined in relation to literature. Some of the topics were already covered in the literature review in the earlier chapters, but some new topics arose from the interviews. As the sample size was small, even some topics that were not covered by more than one participant were taken into consideration.

Camera perspective in general was expected to rise as a topic in the interviews, as participants were asked about the first and third-person perspectives already in the pre-questionnaire. There was not much difference between the IEQ score from the questionnaire and the score the participant gave themselves. As Jennett et al. (2008) suggested, players could quite reliably self-report their own immersion (Jennett et al., 2008), which was seen from the participants' calculated IEQ scores and their estimated immersion mostly reflecting each other in this study as well. The character blocking the view in third-person perspective was also not surprising as a recurring topic in the interviews, as all but one participant chose first-person perspective as their preferred camera perspective for playing *Skyrim*. All but one participant (P2) said they prefer playing *Skyrim* in first-person perspective. The pre-questionnaire answers said that first-person perspective works well indoors, is good for exploration and combat and helps players get better immersed as they see the game world through the eyes of the player character without seeing the character in front of them. During the gameplay session and interview, participants commented on the perspective, describing it as easier to forget they control a character and to self-insert, combat being slightly more intimidating than in third-person perspective and using a bow being easier from the first-person perspective. Based on a previous study by Denisova and Cairns (2015), the first-person perspective was assumed to be more immersive (Denisova & Cairns, 2015). Most participants did indeed choose this perspective as their preferred perspective for playing *Skyrim*. Denisova and Cairns (2015) concluded that immersion was higher in *Skyrim* when played it in first-person perspective. (Denisova & Cairns, 2015). This was also observable in this study, as the only participant who played in first-person perspective (P2) got the second highest IEQ score out of all ten participants. However, this study does not have a big

enough sample size to support nor oppose the claim. Multiple participants said their immersion could have been higher, and many of them voiced their preference of first-person perspective being the key element in raising their immersion.

Third-person perspective was described as good for looking behind corners and at surroundings in general in the pre-questionnaire, however during the gameplay session, participants were displeased with how the player character blocked the player's view, contradicting these claims. P3 said seeing the character made them focus on the character more than the surroundings. P1 commented during the gameplay session that using third-person perspective indoors does not cause any problems, as the player character's movements are simple enough, whereas a few other participants described third-person perspective as claustrophobic and suffocating indoors. The character blocking the view was mentioned by participants mostly during combat situations, especially when using a bow. Using a bow was not impossible in third-person perspective, however it is arguably easier to aim in first-person perspective. Combat situations were heavily playstyle reliant for whether the participant was bothered by the character being visible or not. Some participants liked that they could see their surroundings better while fighting, whereas others could not estimate the distances of their attacks while in third-person perspective. As briefly covered in chapter 5, newer games have solved the bow aiming mechanic with a slightly off centered camera in third-person perspective.

Social presence was an interesting theme as it was also briefly covered in the literature review, yet it came from one participant without being asked about it. P3 mentioned social presence during the study, wondering about feeling part of a group of non-player characters, for example, in a village. They felt that they would still feel distanced from the player character, but maybe feel like the player character was more part of the group than them as the player. They were wondering about how trying the same thing in first-person perspective would change this feeling, but did not try it out as the gameplay session had the condition of staying in the assigned perspective. The same participant talked about a different game, only playable in third-person perspective, and seemed to have no issue feeling the same feelings the player character was visibly experiencing on screen. This was an interesting comment from the participant, as they seemed to contradict themselves with these two situations. This makes it seem like this participant had a too strong of a preference for first-person perspective in *Skyrim*, to be able to experience the game as freely in third-person perspective. Social presence was previously mentioned by Denisova and Cairns (2015). Their study mentioned that first-person perspective lacks social presence, while third-person perspective is the only way to achieve social presence as the character is visible in third-person perspective. They noted that previous studies believed that the ownership the player feels when playing in first-person perspective is what leads to higher presence. (Denisova & Cairns, 2015) Interestingly, as P3 wondered about social presence while among villagers, they said they felt a stronger social presence for the character with the villager, rather than for themselves. They felt that they would feel a stronger social presence among the villagers if they played in first-

person perspective. This is contradictory to what Denisova and Cairns (2015) had said about social presence needing the character to be visible in third-person perspective.

Self-inserting was another topic that arose from the discussions with participants, but was expected and thus already covered briefly in the literature review. P1 talked about games that are locked to third-person perspective enabling them to self-insert better. This was the complete opposite to what other participants said about first-person perspective enabling them to self-insert, whereas third-person perspective would restrict them from doing so as they could not identify as the character that they did not create themselves and that was given an established backstory and personality. Only P5 talked about self-inserting in a situation where they have their physical surroundings mimic the game environment, playing a flight simulator with a joystick. They did not mention self-insertion, but from their explanation it was clear that this was the case. P9 said they need to get themselves into a mindset of playing as an alternative self, to be able to self-insert. P10 mentioned self-inserting as a means to have some level of familiarity in an unfamiliar game environment. Self-inserting has previously been hinted at by Nacke and Lindley (2008) as a reason behind first-person perspective being more immersive in general. Nacke and Lindley (2008) touched on the topic while explaining how first-person perspective lets the player integrate more in the game world and thus helps the player identify as the game character. (Nacke & Lindley, 2008) This seemed to be the case with the participants who mentioned self-insertion, especially with P10, who talked about their self-insertion being the most familiar element in a game world that is foreign in every other way. It would seem that the more freedom there is for the player to modify the character they play as, even if it is not visible to the player later on, the easier it is for the player to identify as the game character. Birk and Mandryk (2013) suggested that to fully understand player experience, it is essential to not only focus on how the player feels about the game, but also how they feel about themselves during gameplay. They gave an example of a player enjoying being stealthy and stealing items from teammates during a role-playing game, however feeling bad in the end and quitting the game because of feeling sleazy as result of their actions. (Birk & Mandryk, 2013) This could be a reason for P6 not being able to play as an evil character in games, as they would feel bad about themselves.

Losing track of time and detaching from reality are the core elements of immersion as seen in the literature review. Losing track of time seemed to be a re-occurring phenomenon when playing *Skyrim*. Multiple participants described that they get so into playing *Skyrim* that they either completely or partly lose track of time. P3 mentioned in the interview on an instance where they were told by other people that they had already played for a certain amount of time, while they themselves felt that only a fraction of that time had passed. Only two participants (P6 and P9) reported a low score for losing track of time, and these two participants did look around them during the gameplay session. Losing track of time and detaching from reality are some of the core elements in Brown and Cairns' (2004) immersion levels: in the second level, engrossment, players start



becoming less aware of themselves, and might even look for this experience by lowering the light in the room or enhancing the sounds by increasing volume or using a headset. Losing track of time is one of the overlapping features of immersion and flow, as Brown and Cairns (2004) mentioned. (Brown & Cairns, 2004) Losing track of time and detaching from reality could be observed with participants during the gameplay and were discussed with some of the participants in the interview as well.

Two participants (P2 and P6) said they were too aware of the unfamiliar situation or had the feeling of being observed, to detach from reality. Three participants (P1, P8 and P10) were disturbed by noise from devices and other people. P10 said there was noise at the start of the call but did not notice when it had stopped, but assumed it was during the gameplay session. The game being 10 years old, many things that are standard nowadays did not exist when the game released or were not the way everyone was doing it. Thus, the topic of keybindings causing some difficulties was expected as well. Some participants did indeed have difficulties with the controls, some because of being more used to playing on a controller or a different control scheme, some because of inexperience with the game or because of a long break from the game. Other participants who had no issues with the controls did not have to think of using controls for controlling a character. P8 however had no issues but said they were completely aware of using controls the entire time they played. They explained that it was because of seeing the character that they could not detach and feel more like being the character themselves. Two participants (P8 and P9) mentioned virtual reality as a means to get more immersed. Bianchi-Berthouze, Kim and Patel (2007) hypothesized that body movement enhances the player's experience while playing digital games (Bianchi-Berthouze, Kim & Patel (2007). In context of virtual reality, Boltsis and Cedergren (2019) mention that the prevalent ways to move, or locomotion techniques, while experiencing virtual reality are walking-in-place, using a controller or joystick, and teleportation. They studied these three locomotion techniques, and their results suggested that the walk-in-place technique lets the player experience higher immersion than the other locomotion techniques. (Boltsis & Cedergren, 2019) Based on this, P8 and P9 would ideally use this technique to experience higher immersion. P9 however said in the interview that they used to have a virtual reality set at home, but that it took too much space. Medeiros et al. (2018) said that third-person perspective is bad for navigation in virtual reality and that first-person perspective simulates real life better (Medeiros, dos Anjos, Mendes, Pereira, Raposo & Jorge, 2018). This should be taken into consideration before replicating this study as is in a virtual reality setting.

P6 estimated their immersion pretty low, yet said that games are never a waste of time. They explained that while other people might seek an experience of escapism from going for a run or to the gym, gaming is that experience for them. Kosa and Uysal (2020) suggested that there are two types of aspects in escapism in games: healthy escapism and subversive escapism. They emphasize that escapism in video games should not be viewed as something negative only, as it can provide players with emotional benefits. (Kosa & Uysal, 2020). Stenseng,

Falch-Madsen and Hygen approached escapism as a dualistic concept, suggesting that this kind of approach could even help distinguish between healthy and unhealthy gaming. (Stenseng, Falch-Madsen & Hygen, 2021)

Emotions and soundscape were expected to be covered more with the participants; however, it was not very fruitful as it was not the sole focus in the discussions with participants. Granic, Lobel and Engels (2014) said that games are an efficient and effective way for people to experience positive feelings, although their focus was on children and youth (Granic, Lobel & Engels, 2014), positive feelings were also observable in the participants of this study. Overall participants seemed to have mostly positive feelings when answering the GEQ Post-game module questions. P7 struggled a lot with the controls and explained that in other games they would feel powerful if they managed to get a “clean and stylish kill”. They did thus not feel powerful during the gameplay session for this study because of all the struggles they had with the controls. Had they had no issues with the controls, they very likely would have had a better experience and experienced a stronger immersion. Two participants (P2 and P10) talked about guilt, based on their answers in the post-questionnaire. During the gameplay session, P2 accidentally stole something and had to kill a witness. They felt slight guilt for having to do so to not get into further trouble in the village they were in. P10 talked about another game, not *Skyrim*, having a scenario which made them feel very guilty. They said they felt surprised at how guilty the game scenario made them feel, as they were so immersed that it was difficult to fulfill a game mission that was so against what they believe in in real life.

Three participants (P5, P6 and P9) talked about nostalgia, which was to be expected as the game was released 10 years ago. P5 explained that they felt nostalgia through the familiar soundscape. P2 and P3, both of whom had not mentioned nostalgia, observed the game’s sounds. Both participants stopped to listen to some sounds, mostly water flowing. P10 talked briefly about what all makes the whole experience such a beautiful experience, mentioning that they once stopped what they were doing and just admired the game world during the gameplay session.

Using mods was a topic that was prepared to be discussed with participants, as the game is old, and the developers have included the option for people to share their own mods easily through the game itself. All participants were asked to play without mods to keep the experience somewhat similar for everyone. P4 said they would normally use around 200 mods, mostly to enhance graphics, but still enjoyed the graphics so much that they gave the question asking about graphics and imagery being enjoyable a full score. Other participants who said they would normally use mods to enhance the graphics and overall experience. Two participants (P5 and P8) mentioned mods that fix some issues or add something new to the game, be it mechanics or story content.

The research question was *Can you have a fulfilling game experience without being fully immersed, when playing Skyrim from an unfamiliar camera perspective?* Players can indeed have a fulfilling, or at least positive experience without being fully immersed, or at least without being as immersed as they imagine they could be. The participant with the highest score for IEQ score (117) also had the highest

Positive experience score (3) and the lowest Negative experience score (0), but said their immersion could have been higher, as they did play in their least preferred perspective. The participant with the lowest IEQ score (88) had a lower-than-average Positive experience score (1,3) and also said their immersion could have been higher. The participant with the lowest Positive experience score (0,5) had a slightly lower than average IEQ score (102) and the highest Negative experience score (0,83). Participants who talked during their gameplay session seemed to have higher Positive experience scores. The same did not apply for the IEQ scores. This could mean that talking while playing lets a player experience stronger emotions than staying quiet during gameplay, even though it might not have an effect on immersion.

The biggest conflict within the data of this study was the claims participants made of the functionality of the third-person perspective. As most participants said, the first-person perspective is easier for looting and when aiming needs more accuracy, for example . There was a brief moment during one interview, where the interviewer and the participant joked about filling their inventory with cups and bowls, which are essentially useless for the player to pick up and carry around. As for the combat situations, it seems to be a matter of preference or experience. Participants who voiced more willingness to play in a style that switches between perspectives for different purposes, seemed to agree on this with the interviewer. As for the participants who did not agree, most of them said they had either no idea that the game could even be played from a third-person perspective, or were so against the idea of playing in anything but first-person perspective that it would take them a lot of effort to see the benefits of the third-person perspective.

Another internal conflict was P3 being a clear anomaly in the data. The possible reasons for their scores conflicting with their comments in the interview are that they did not understand the questionnaire properly, they were possibly tired from other things in life, their results are an anomaly with high scores in positive experience, tiredness and returning to reality. Their Negative experience score is also the third highest, tied with P1 with a lower IEQ score and more hours clocked in *Skyrim*. Based on their reaction, it is possible that P3 also felt that they made it through the interview session, which they could see as a positive experience. It is possible that they have mixed up the experiment experience and the game experience, considering how many complaints they had about the game during the gameplay session. The only positive element about the game in third-person perspective P3 mentioned was the kill animations, the rest of their comments were rather neutral remarks on the differences they experienced. P3 did not really comment on anything in a negative tone either.

## 7 CONCLUSION AND FUTURE RESEARCH

This study set out to find whether players could have a fulfilling game experience without being fully immersed. The focus was put on third-person perspective experiences, as first-person perspective is already deemed to be more immersive. The intention was to find commentary from players who were willing to have a discussion on the topic. As the pandemic made it difficult to conduct an experiment on campus, new limitations arose. Participants had to own the game themselves and were thus assumed to have played it to some extent. The research question evolved from "*What does the player understand as immersion and a fulfilling gaming experience in third-person video games?*" to "*Can you have a fulfilling game experience without being fully immersed, when playing Skyrim from an unfamiliar camera perspective?*" as the latter better explains what was intended to be the core of this study. The study consisted of 10 participants playing *Skyrim*, answering two questionnaires and having a discussion about their gameplay experience and other game related topics afterwards, with the discussion topics and questions getting iterated with each participant.

Even though all participants, apart from one, chose first-person perspective as their preference, and were thus assigned to use third-person perspective, none of the participant IEQ scores fell under the lower score ranges. This would indicate that, although allowing the players to play in their preferred perspective would most likely yield higher scores, playing in the other alternative perspective was not completely immersion breaking either. Many participants, especially the ones with more than one thousand hours spent in-game, said that *Skyrim* is best experienced while played from the first-person perspective. Hearing this from players themselves raises the question: was *Skyrim* designed to be experienced mostly from the first-person perspective? The game itself never forces the player to switch perspectives, and it starts in first-person perspective, however, the option to switch is bound to its own key, instead of being hidden away in the settings menu. The same feature also appears in other games owned by Bethesda Game Studios, as mentioned by multiple participants during the interview. Game companies being businesses, it can be assumed that there is much more research on this topic than what is publicly available.

Based on a few participants mentioning *Skyrim* VR being something that could enhance their experience, it would be good for future research to focus on whether virtual reality can in fact enhance gaming experience, and what elements of virtual reality are the ones that actually enhance the experience if that is the case. It would also be good to see whether virtual reality has a similar effect on immersion or not.

There were technical issues and unfamiliarity in conducting a research remotely, which were caused by the ongoing pandemic, and likely affected some of the research. Had there been no such limitations, there could have been more participants, less technical difficulties and the gameplay session and interview could have been handled differently, and so this study could draw more conclusions on the topic. This is definitely something that future research should expand on.

As mentioned in the Chapter 5, the sample size was not big enough for definitive conclusions in this study, however it would be good to look for a possible hours spent with the game threshold at which the immersion experience starts descending with a bigger sample size in the future. It could mean that immersion gets weaker once the player is too familiar with the game, however as seen with this study, IEQ scores do not need to be extremely high for players to still get a positive experience with a game.

## REFERENCES

- Behaviour Interactive (2016). *Dead by Daylight* [Video game]. Montreal, Canada: Behaviour Interactive. Steam page retrieved on 19.7.2021. Available at: [https://store.steampowered.com/app/381210/Dead\\_by\\_Daylight/](https://store.steampowered.com/app/381210/Dead_by_Daylight/)
- Bethesda Game Studios (2011). *The Elder Scrolls V: Skyrim* [Video game]. Rockville, MD: Bethesda Softworks. Steam page retrieved on 21.4.2021. Available at: [https://store.steampowered.com/app/489830/The\\_Elder\\_Scrolls\\_V\\_Skyrim\\_Special\\_Edition/](https://store.steampowered.com/app/489830/The_Elder_Scrolls_V_Skyrim_Special_Edition/)
- Bianchi-Berthouze, N., Kim, W. W., & Patel, D. (2007, September). Does body movement engage you more in digital game play? and why?. In *International conference on affective computing and intelligent interaction* (pp. 102-113). Springer, Berlin, Heidelberg.
- Birk, M., & Mandryk, R. L. (2013, April). Control your game-self: effects of controller type on enjoyment, motivation, and personality in game. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 685-694).
- Boletsis, C., & Cedergren, J. E. (2019). VR locomotion in the new era of virtual reality: an empirical comparison of prevalent techniques. *Advances in Human-Computer Interaction, 2019*.
- Brown, E., & Cairns, P. (2004, April). A grounded investigation of game immersion. In *CHI'04 extended abstracts on Human factors in computing systems* (pp. 1297-1300). ACM.
- Cairns, P., Cox, A., & Nordin, A. I. (2014). Immersion in digital games: review of gaming experience research. *Handbook of digital games, 1, 767*.
- CD Projekt Red (2015). *The Witcher 3: Wild Hunt* [Video game]. Warsaw, Poland: CD Projekt. Steam page retrieved on 21.10.2021. Available at: [https://store.steampowered.com/app/292030/The\\_Witcher\\_3\\_Wild\\_Hunt/](https://store.steampowered.com/app/292030/The_Witcher_3_Wild_Hunt/)
- Crystal Dynamics, Inc. (2013) *Tomb Raider* [Video game]. Tokyo, Japan: Square Enix.
- Csikszentmihalyi, M. (1990). Flow: the psychology of optimal experience.
- Chen, J. (2007). Flow in games (and everything else). *Communications of the ACM, 50(4)*, 31-34.
- Denisova, A., & Cairns, P. (2015, April). First person vs. third person perspective in digital games: do player preferences affect immersion?. In

*Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 145-148). ACM.

- Denisova, A., Nordin, A. I., & Cairns, P. (2016, October). The convergence of player experience questionnaires. In *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play* (pp. 33-37).
- Ellis, G. D., Voelkl, J. E., & Morris, C. (1994). Measurement and analysis issues with explanation of variance in daily experience using the flow model. *Journal of leisure research*, 26(4), 337-356.
- Ermi, L., & Mäyrä, F. (2005). Fundamental components of the gameplay experience: Analysing immersion. *Worlds in play: International perspectives on digital games research*, 37(2), 37-53.
- Evil Mojo Games (2018). *Paladins: Champions of the Realm* [Video game]. Alpharetta, GA: Hi-Rez Studios. Steam page retrieved on 19.7.2021. Available at: <https://store.steampowered.com/app/444090/Paladins/>
- FromSoftware (2011) *Dark Souls* [Video game]. Tokyo, Japan: Bandai Namco Games Inc.
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.
- Ijsselsteijn, W. A., de Kort, Y. A., & Poels, K. (2013). The game experience questionnaire. Eindhoven: Technische Universiteit Eindhoven, 46(1).
- Hunicke, R., LeBlanc, M., & Zubek, R. (2004, July). MDA: A formal approach to game design and game research. In *Proceedings of the AAAI Workshop on Challenges in Game AI* (Vol. 4, No. 1, p. 1722).
- Jennett, C., Cox, A. L., Cairns, P., Dhoparee, S., Epps, A., Tijs, T., & Walton, A. (2008). Measuring and defining the experience of immersion in games. *International journal of human-computer studies*, 66(9), 641-661.
- Johnson, D., Gardner, M. J., & Perry, R. (2018). Validation of two game experience scales: the player experience of need satisfaction (PENS) and game experience questionnaire (GEQ). *International Journal of Human-Computer Studies*, 118, 38-46.
- Kosa, M., & Uysal, A. (2020). Four pillars of healthy escapism in games: Emotion regulation, mood management, coping, and recovery. In *Game user experience and player-centered design* (pp. 63-76). Springer, Cham.
- Lehmusjoki, J. (2017). The effects of user interface type on player immersion in first-person shooter games.

- Nacke, L., & Lindley, C. A. (2008, November). Flow and immersion in first-person shooters: measuring the player's gameplay experience. In *Proceedings of the 2008 Conference on Future Play: Research, Play, Share* (pp. 81-88). ACM.
- Ninja Theory (2017) *Hellblade: Senua's Sacrifice* [Video game]. Cambridge, England: Ninja Theory Limited.
- Lloyd, J. (2018, April 13). *How Hellblade: Senua's Sacrifice deals with psychosis*. Science Focus. <https://www.sciencefocus.com/the-human-body/how-hellblade-senuas-sacrifice-deals-with-psychosis/>
- Medeiros, D., dos Anjos, R. K., Mendes, D., Pereira, J. M., Raposo, A., & Jorge, J. (2018, November). Keep my head on my shoulders! Why third-person is bad for navigation in VR. In *Proceedings of the 24th ACM Symposium on Virtual Reality Software and Technology* (pp. 1-10).
- Nintendo (2017) *The Legend of Zelda: Breath of the Wild* [Video game]. Kyoto, Japan: Nintendo.
- Nordin, A. I., Cairns, P. A., Hudson, M., Alonso, A., & Gámez, E. H. C. (2014). The effect of surroundings on gaming experience. In *FDG*.
- Nunez, D., & Blake, E. (2006). Learning, experience, and cognitive factors in the presence experiences of gamers: An exploratory relational study. *Presence: Teleoperators and Virtual Environments*, 15(4), 373-380.
- Poels, K., de Kort, Y. A. W., & IJsselsteijn, W. A. (2007). *D3.3 : Game Experience Questionnaire: development of a self-report measure to assess the psychological impact of digital games*. Technische Universiteit Eindhoven.
- Stenseng, F., Falch-Madsen, J., & Hygen, B. W. (2021). Are there two types of escapism? Exploring a dualistic model of escapism in digital gaming and online streaming. *Psychology of Popular Media*.
- Ubisoft Montréal (2013). *Assassin's Creed: Origins* [Video game]. Montreuil, France: Ubisoft.



## APPENDIX 1 PRE-QUESTIONNAIRE

### Immersion and Game Experience - Preliminary questions / Immersio ja pelikokemus - Alkukysely

1. By choosing yes, I approve of the use of my personal data in the way that the documents describe this experiment.

Valitsemalla kyllä, hyväksyn henkilötietojeni käsittelyn tutkimustiedotteessa ja tietosuojaselosteessa kuvattuun tutkimukseen.

Yes. / Kyllä.

### 2. Approval / Suostumus

Fill in the information below, to sign your approval. /  
Täytä alla olevat tiedot allekirjoittaaksesi suostumuksesi.

Name / Nimi

Email / Sähkö-  
posti

### 3. Age / Ikä

- Under / Alle 20
- 20 - 29
- 30 - 39
- 40 - 49
- Over / Yli 50
- I would rather not say / En halua kertoa

### 4. Gender / Sukupuoli

- Male / Mies
- Female / Nainen

- Other / Muu
- I would rather not say / En halua kertoa

**5. Matriculation exam result /  
Ylioppilaskokeen tulos**

|       | I                     | A                     | B                     | C                     | M                     | E                     | L                     |
|-------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Pitkä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lyhyt | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**6. Latest grade if not matriculation exam /  
Viimeisin arvosana, jos ei ylioppilaskoe**

What grade  
and from which  
other  
exam/course /  
Mikä arvosana,  
mistä muusta  
kokeesta/kurs-  
sista

**7. I play these game genres / Pelaa näitä peligenrejä**

- Platformer / Tasohyppelypelit  
(e.g. / esim. Super Mario, Ori and the Blind Forest)
- Shooters / Ammuntapelit  
(e.g. / esim. Call of Duty, Battlefield)
- Real time strategy (RTS) / Strategiapelit  
(e.g. / esim. Age of Empires, Steel Division)
- Multiplayer online battle arena (MOBA) / Areenapelit  
(e.g. / esim. League of Legends, DOTA 2, SMITE)
- Singleplayer Role-playing Games / Yksinpelattavat roolipelit  
(e.g. / esim. Witcher series, Final Fantasy series)

- MMORPG  
(e.g. / esim. World of Warcraft, Black Desert Online)
- Battle Royale / Selviytymispelit  
(e.g. / esim. Fortnite, Call of Duty: Warzone)
- Fighting / Taistelupelit  
(e.g. / esim. Tekken, Mortal Kombat)
- Realistic simulation / Realistiset simulaatiopelit  
(e.g. / esim. Microsoft Flight Simulator, Euro Truck Simulator)
- Life simulation / Elämäsimulaatiopelit  
(e.g. / esim. The Sims series, Stardew Valley)
- Racing / Ajopelit  
(e.g. / esim. Gran Turismo, Forza,
- Sports / Urheilupelit  
(e.g. / esim. FIFA, UFC)
- Dance and rhythm / Tanssi- ja rytmipelit  
(e.g. / esim. Just Dance, Osu)
- Other, what? / Muu, mikä?

**8. On how many days a week do you play? (within the last 2 to 3 weeks) /  
Kuinka monena päivänä viikossa pelaat? (viimeisen 2 - 3 viikon aikana)**

- 0 - 2
- 3 - 5
- 6 - 7

**9. How long are your gaming sessions? /  
Kauanko pelisessiosi kestävät?**

- 0 - 15 mins
- 15 - 30 mins
- 30 - 60 mins
- 1 - 2 hours / tuntia
- 2 - 10 hours / tuntia

Over 10 hours / Yli 10 tuntia

**10. How much have you played of this particular game (The Elder Scrolls V: Skyrim)? /**

**Paljonko olet pelannut tätä nimenomaista peliä (The Elder Scrolls V: Skyrim)?**

Estimate the hours, unless you can find it in e.g. Steam. /

Arvioi tuntimäärä, ellei sitä löydy esim. Steamistä.

Hours / Tunnit

**11. Share your personal experiences on your preferences on the 1st and 3rd person perspectives. /**

**Kerro vapaasti mieltymyksistäsi 1. ja 3. persoonan kuvakulmien suhteen.**

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|  |
|  |
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|  |
|  |

**12. Would you rather play this in 1st or 3rd person? Or do you switch between the POVs on the go, as the game allows that? /**

**Pelaisitko tätä peliä mielummin 1. vai 3. persoonassa? Vai vaihdatko kuvakulmien välillä kesken pelin, kuten peli sallii tehtävän?**

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## APPENDIX 2 POST-QUESTIONNAIRE

### Immersion & Experience/ Immersion- ja kokemuskysely

In particular, remember that these questions are asking you about how you felt at the end of the game.

#### 1. Please choose the corresponding score to the following questions

|   | Not at all<br>1       | 2                     | 3                     | 4                     | Very<br>much so<br>5  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 To what extent did the game hold your attention?          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2 To what extent did you feel you were focused on the game? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

#### 2. Please choose the corresponding score to the following question

|   | Very<br>little<br>1   | 2                     | 3                     | 4                     | A lot<br>5            |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 3. How much effort did you put into playing the game? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**3. Please choose the corresponding score to the following questions**

|  | Not at all<br>1       | 2                     | 3                     | 4                     | A lot /<br>Very<br>much<br>5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|
| 4. Did you feel that you were trying your best?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>        |
| 5 To what extent did you lose track of time?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>        |
| 6 To what extent did you feel consciously aware of being in the real world whilst playing? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>        |
| 7 To what extent did you forget about your everyday concerns?                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>        |

**4. Please choose the corresponding score to the following question**

|   | Not at all<br>1       | 2                     | 3                     | 4                     | Very<br>aware<br>5    |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 8 To what extent were you aware of yourself in your surroundings? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**5. Please choose the corresponding score to the following questions**

|   | Not at all<br>1       | 2                     | 3                     | 4                     | A lot /<br>Very<br>much so<br>5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| 9 To what extent did you notice events taking place around you?                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 10 Did you feel the urge at any point to stop playing and see what was happening around you?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 11 To what extent did you feel that you were interacting with the game environment?           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 12 To what extent did you feel as though you were separated from your real-world environment? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |

|  | Not at all<br>1       | 2                     | 3                     | 4                     | A lot /<br>Very<br>much so<br>5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| 13 To what extent did you feel that the game was something you were experiencing, rather than something you were just doing? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 14 To what extent was your sense of being in the game environment stronger than your sense of being in the real world?       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 15 At any point did you find yourself become so involved that you were unaware you were even using controls?                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 16 To what extent did you feel as though you were moving through the game according to you own will?                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |

**6. Please choose the corresponding score to the following question**

|  | Not at all<br>1       | 2                     | 3                     | 4                     | Very<br>difficult<br>5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| 17 To what extent did you find the game challenging? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |

**7. Please choose the corresponding score to the following questions**

|   | Not at all<br>1       | 2                     | 3                     | 4                     | A lot /<br>Very<br>much so<br>5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| 18 Were there any times during the game in which you just wanted to give up?              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 19 To what extent did you feel motivated while playing?                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 20 To what extent did you find the game easy?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 21 To what extent did you feel like you were making progress towards the end of the game? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |

**8. Please choose the corresponding score to the following question**

|   | Very<br>poor<br>1     | 2                     | 3                     | 4                     | Very<br>well<br>5     |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 22 How well do you think you performed in the game? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**9. Please choose the corresponding score to the following questions**

|   | Not at all<br>1       | 2                     | 3                     | 4                     | A lot /<br>Very<br>much so<br>5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------------|
| 23 To what extent did you feel emotionally attached to the game?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 24 To what extent were you interested in seeing how the game's events would progress?                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 25 How much did you want to "win" the game?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 26 Were you in suspense about whether or not you would win or lose the game?                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 27 At any point did you find yourself become so involved that you wanted to speak to the game directly? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 28 To what extent did you enjoy the graphics and the imagery?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 29 How much would you say you enjoyed playing the game?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |
| 30 When interrupted, were you disappointed that the game was over?                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>           |

**10. Please choose the corresponding score to the following question**

|   | Definitely<br>not<br>1 | 2                     | 3                     | 4                     | Definitely<br>yes<br>5 |
|---|------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| 31 Would you like to play the game again? | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |



### 11. Game Experience Questionnaire - Post-game module

Please indicate how you felt after you finished playing the game for each of the items, on the following scale:

0 Not at all / 1 Slightly / 2 Moderately / 3 Fairly / 4 Extremely

|   | Not at<br>all<br>0    | Slightly<br>1         | Moderately<br>2       | Fairly<br>3           | Extremely<br>4        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 I felt revived                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2 I felt bad  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3 I found it hard to get back to reality            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4 I felt guilty                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5 It felt like a victory                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6 I found it a waste of time                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7 I felt energised                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8 I felt satisfied                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9 I felt disoriented                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10 I felt exhausted                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11 I felt that I could have done more useful things | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12 I felt powerful                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13 I felt weary                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14 I felt regret                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15 I felt ashamed                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 16 I felt proud                                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17 I had a sense that I had returned from a journey | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## APPENDIX 3 IN-DEPTH, SEMI-STRUCTURED INTERVIEW

### Part 3 - Interview:

*Based on a suggestion by [Lehmusjoki](#) (2017), the participant is asked to rank their own estimate of how immersed they were on a Likert scale. This will be compared to what the IEQ score says.*

**How immersed would you say you were during this gameplay session?**

**Were there any elements that added/reduced your immersion?**

**You answered with 1/5 in this question. Could you elaborate?**

### **Game Experience Questionnaire**

**Do you change perspectives when the option is available?**

**How often do you usually change the perspective? Is it for specific things? (e.g. 3<sup>rd</sup> to 1<sup>st</sup> for aiming with a bow, 1<sup>st</sup> to 3<sup>rd</sup> to see the environment better etc)**

**Did it affect (pos or neg) your experience to not have that option?**

**Can you name other games that utilize switching between 1<sup>st</sup> and 3<sup>rd</sup> perspectives? How do you feel about them?**

**Other notes**