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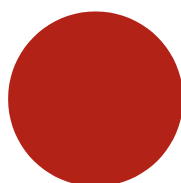
# **Games for non-gamers: Approaching video games from a non-gamer perspective**

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Mestrado em Multimédia da Universidade do Porto

Supervisor: Pedro Cardoso (Assistant Professor)

June 2021



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# Abstract

The video game industry has grown exponentially in recent years. Games are now more diverse than ever before. Among the plethora of genres available are critical games, known for their simple game mechanics and ability to critique both the medium and societal conundrums. Because gamers are already accustomed to how games work, understanding how to play a critical game, although challenging in its own right, makes it a more attainable task. But despite gamers having fewer difficulties approaching them, some players may not have such an easy time undertaking these games, especially those not familiarised with the medium: non-gamers.

This study aims to identify how digital games, and more specifically critical games, can be adapted in a fashion that allows them to be critiquing tools for non-gamers. Critical games are a specific type of digital game that can be used to apply critical commentary on social and cultural issues. To do so, they oftentimes subvert that which is found in more conventional game models.

This research resorted to several methods to explore each research question. As such, we resorted to literature reviews, comparative analyses, questionnaires, followed by thematic analyses, and lastly co-design workshops which underwent a qualitative content analysis.

Results showed that adapting critical games as tools of sociocultural critique for non-gamers can be a very nuanced problem. While non-gamers generally dislike frustrative, repetitive, and stressful behaviour in games, they usually enjoy freedom in the gameplay loop, moderately challenging yet fun game designs, and thematic similarities to real world issues. However, we concluded that adapting games to non-gamers is highly dependent on their personal motives and preferences, as happens with the gamer demographic.

**Keywords:** critical games; critique tools; game conventions; game idiosyncrasies; non-gamers; player motivations; video games.

# Resumo

A indústria dos videogames cresceu exponencialmente em anos recentes. Os jogos encontram-se agora mais diversificados do que nunca. Entre a pleora de géneros existentes estão os jogos críticos, conhecidos pelas suas mecânicas de jogo simples e capacidade para criticarem tanto o próprio meio, como problemáticas de índole social. Tendo em conta que os *gamers* já estão acostumados aos modos de funcionamento dos jogos, entender como um jogo crítico se joga, apesar de desafiante nos seus próprios termos, torna-se numa tarefa mais concretizável. No entanto, apesar dos *gamers* terem menos dificuldades em entrar dentro deste tipo de jogo, alguns jogadores poderão ter maior dificuldade em se adaptarem a estes jogos, especialmente aqueles não familiarizados com o meio: *non-gamers*.

Este estudo tem como objetivo identificar como é que os jogos digitais, e mais especificamente os jogos críticos, podem ser adaptados como ferramentas de crítica para *non-gamers*. Jogos críticos são um tipo de jogo digital específico que pode ser usado para comentar e criticar problemas sociais e culturais. Para tal efeito, estes jogos subvertem aspetos que se encontram nos modelos convencionais dos jogos.

Este estudo recorreu a várias metodologias para explorar cada uma das questões de investigação. Como tal, recorremos a revisões de literatura, análises comparativas, questionários seguidos por análises temáticas, e por fim, workshops de co-design posteriormente submetidos a uma análise qualitativa de conteúdo.

Os resultados mostraram que adaptar jogos críticos como ferramentas para crítica sociocultural para *non-gamers* é uma questão multifacetada. Enquanto, de modo geral, os *non-gamers* desgostam de aspetos frustrantes, repetitivos e stressantes, gostaram, contudo, da liberdade no ciclo de jogo, designs de jogo divertidos mas desafiantes e temáticas relacionadas com problemas reais. Todavia, concluímos que adaptar jogos aos *non-gamers* depende fortemente dos seus motivos e preferências pessoais, tal como se pode observar com a demografia dos *gamers*.

**Palavras-Chave:** convenções de jogo; ferramentas críticas; idiossincrasias do jogo; jogos críticos; motivações de jogador; *non-gamers*; videogames.

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# Abbreviations

AVGP	Action Video Game Player
FPS	First Person Shooter
GDC	Game Design Canvas
MMO	Massively Multiplayer Online
MOBA	Multiplayer Online Battle Arena
MUD	Multi-User Dungeon
NVGP	Non Video Game Player

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# Introduction

## Context/Premise

Video games have been the biggest profiting entertainment industry in recent years. Its prolific growth in economical and cultural terms has turned it into one of the most noteworthy entertainment sources around. According to Statista (2020), gaming has profited a global amount of \$145.7b in 2019 alone, with revenue distribution being attributed to computer gaming (23%), console gaming (32%), and mobile gaming (45%). This not only means that gaming is the most cost-effective in mobile game-making scenarios, but also that video game interest has likely peaked among more casual player bases.

In other words, gaming has evolved from a somewhat niche activity to a much more far-reaching occupation and culture. However, there are still plenty of people who do not engage in gaming, even on the most accessible platforms, such as mobile. While the premise that gaming is limited to hardcore and core gaming audiences has been toppled by the available variety of games that allow more and more people to enter the world of gaming, many individuals are still left out of the medium's reach.

There are multiple explanations as to why that happens, ranging from lack of interest or time to play, to experiencing difficulties getting into the medium. Video games can oftentimes offer resistance to those not familiarised with its structural and mechanical peculiarities and mannerisms. Other times constructed views based on social opinion can also influence one's regards on them. It is thus important to gather a more in-depth understanding of why these individuals, *non-gamers*, are either being shut out or shutting themselves out from the digital world of games.

From their moment of conception video games have been in constant forward motion, whether through graphical improvements, the conception of new game mechanics and genres, and even wider accessibility options to suit diverse playstyles. Many focus on making existing

genres more accessible to the general public, others on providing experiences that differ from the existing ones. In this sense, the search to appeal to a greater cast of players has been well underway for some time now.

However, creating games that nurture non-gamers' needs and fulfil their motivations and demands only succeeds in tackling the issue partially. To address it in a wider and clearer spectrum, it is essential to perceive video games from a critical standpoint. One in which they are reworked and restructured in order to challenge cultural and social struggles. Video games can act as powerful tools for non-gamers to comment on and apply criticism to aspects of the sociocultural status quo.

For this, we draw on critical games, a specific type of game that delivers a space in which problematic topics of social and cultural nature can be confronted. Critical games are able to use the medium to criticise prominent sociocultural matters, but can too use the medium to draw criticism on itself. Bearing that in mind, critical games might prove to be a viable option through which the study here conducted can provide fruitful results, as they endorse new ways of play for gamers and non-gamers alike. In essence, it is possible that critical games may provide an efficient way for non-gamers to use the platform as a means for critique.

## **Motivation**

The motivation for the development of this dissertation stems from wanting to find ways to better accommodate the needs of non-gamers in their gaming experiences. Video games are one of the most versatile, resourceful, and user-adaptable media available today (Samyn, 2010; Denisova & Cairns, 2015), and we should be able to expand them to broader audiences. Although said audiences may not be able to enjoy or get into most video games available, we should not discard the possibility that perhaps they would enjoy them if they were made with different objectives, purposes or actions (Cardoso, 2016) in mind.

Video games have proven to be highly immersive and overall engaging experiences. As such, we believe a wider cast of communities would be able to appreciate and critique them if we understood what would make games appealing and interesting to them. Therefore, our motivation comes from the need to understand why non-gamers do not play games and the ways in which we could produce a propense environment for them to engage in video games and use them as critique platforms.

## Research Questions

This dissertation intends to explore the ways in which video games, and specifically critical games, can be adapted to non-gamers' wants and needs, so that they can use them as social and cultural critique-proficient tools. In order to do so, the following research questions are proposed:

1. What idiosyncrasies are presently found in traditional video games? In which particularities are critical games able to tackle these idiosyncrasies?

2. In which ways do commonly used video game mechanics/ mechanisms affect the entrance of non-gamers (individuals lacking familiarity with video game idiosyncrasies) in the medium?

3. How can we adapt video games in order to turn them into usable critique tools for non-gamers?

## Methodology and Expected Results

The methodological approach for the development of this dissertation is separated into five different stages, all of them related to our proposed research questions.

Stage 0 is focused on the preparation for the stages that follow. We firstly propose a number of hypotheses for each research question. These hypotheses will in turn be proven or refuted through methodology, which is also described in this stage.

Stage 1 is focused on exploring the first research question. At this stage, we resorted to literature review and comparative case studies between critical and non-critical video games. As a result, we expected to not only identify idiosyncratic characteristics commonly present in video games, but also to highlight ways in which critical games transform these very elements.

Stage 2 is focused on the second research question. Similar to the previous stage, we also began by recapitulating on the findings of the literature review. We then conducted gaming sessions with non-gamers, followed by questionnaires about their gaming experience. Collected data was then organised and analysed via thematic analysis. From this procedure, we expected to comprehend which aspects in games hindered non-gamers potential entry into the medium.

Stage 3 addresses the third research question. Here, we created a co-design workshop with non-gamers (some of the participants of Stage 2) and game design specialists. Each workshop aimed to develop a concept of a game for critiquing purposes. With those game concepts, our

intent was to perceive how non-gamers themselves would adapt video games into their own sociocultural critique tools.

Stage 4 concludes with our discussion of the overall results. We reiterate on our established hypotheses and analyse their veracity according to results found throughout the 3 previous stages.

## **Document Structure**

This dissertation is divided into two major parts. *Part 1: State of the Art* corresponds to the literature review which is held as the theoretical basis for the development of this study. It is composed of 2 chapters. Chapter 1 focuses on gamers and non-gamers. It is where we provide characterizations for both according to several factors such as age, gender, preferences and motivations toward games. We also explore how social and cultural backgrounds, and perceptions of the term *gamer* play a role in the conception of the non-gamer identity. Moreover, we also discuss several gamer and player classification models and how they work. Gamer classification models characterise a specific community of players, those more acknowledged with the medium. Player classification models characteristic players regardless of them being gamers or not. Although gamers and players constitute two different notions, it is still worth understanding how each of the terms apply their characterization methods. Even though a player is not necessarily a gamer, to be a gamer one is first required to be a player of games, meaning we can characterise a facet of being a gamer through player classification models. To elaborate, any given player typology model can only characterise certain aspects of a gamer, but never the player as a whole. Players' inherit many qualities, meaning one single typology is never enough to fully describe the type of player in question. Likewise, that same player typology can only be used to describe a non-gamer's facet if the non-gamer priorly identifies as a player. Some player typologies can evaluate non-gamers in their qualities as players, but never as non-players of games. The section that follows makes a general comparison of traits between the gamer and non-gamer demographic. We end the chapter with a distinction between the concepts of gamer, non-gamer, and player in order to draw conclusions regarding the non-gamer's status as a player.

Chapter 2 explores various types of digital games for non-gamers and briefly explains how each works. In order of discussion, the game types explored are casual games, persuasive games, newsgames, not-games, non-games, and critical games. Conclusively, we analyse how these games, and more specifically critical games, can serve non-gamers' preferences and necessities in the gaming spectrum.



Chapter 3 marks the beginning of *Part 2: For the Non-gamers*, where we present our exploratory work and developments on our research questions. In this chapter, we elaborate on several hypotheses that are tested in the subsequent chapters. We also provide a general overview of the methodology used.

Chapter 4 explores and exposes idiosyncratic conventions in video games. Further, it analyses the ways in which critical games subvert idiosyncrasies in non-critical games. This chapter explores our first research question. We also discuss our methodology in greater detail and provide results.

In chapter 5, we identify potential obstacles to non-gamers' entrance in the world of digital games. This chapter aims to answer our second research question. Additionally, we detail the methods employed in order to explore the topic, and provide a critical review of the results.

Chapter 6 regards our third and last research question. Here, we investigate ways to adapt critical games to non-gamers interests, motivations, and preferences. Like the previous two chapters, we describe the employed methodology and provide a critical reflection about the obtained results.

Chapter 7 is our discussion and conclusions chapter. First, we go over our hypotheses once again, and comment on whether they were proven true or otherwise. We also provide conclusive thoughts on our developments, and discuss their potential meaning. At last, we elaborate on this study's limitations and possibilities for future work.

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## PART 1: State of the Art



# 1. Gamers and non-gamers

This chapter aimed to identify characteristic traits of gamers and non-gamers. By analysing behaviours, motivations, and preferences towards video games, it may be feasible to compare both groups and the factors that come into play when gamers and non-gamers choose to engage in play.

In section 1.1. we started by providing a characterisation of gamers according not only to age and gender, but also to their motivations and preferences in video games. Having gathered information on that regard, we then explored and discussed various gamer classification models.

In section 1.2. we characterised non-gamers according to a set of factors, such as demographics, motives for not engaging in gaming, and how personal and social factors may come into play when non-gamers choose to become so. We also explored the possible existence of non-gamer types.

In section 1.3. we presented a general comparison of gamers and non-gamers personalities, evaluating instances in which their characteristics may be similar, and others where they may be dichotomic.

Closing the chapter, section 1.4. we analysed how non-gamers can be players of games. We further elaborated on the concepts of *gamer*, *non-gamer*, and *player*, to understand what differentiates them and where they intersect.

## 1.1 Gamers

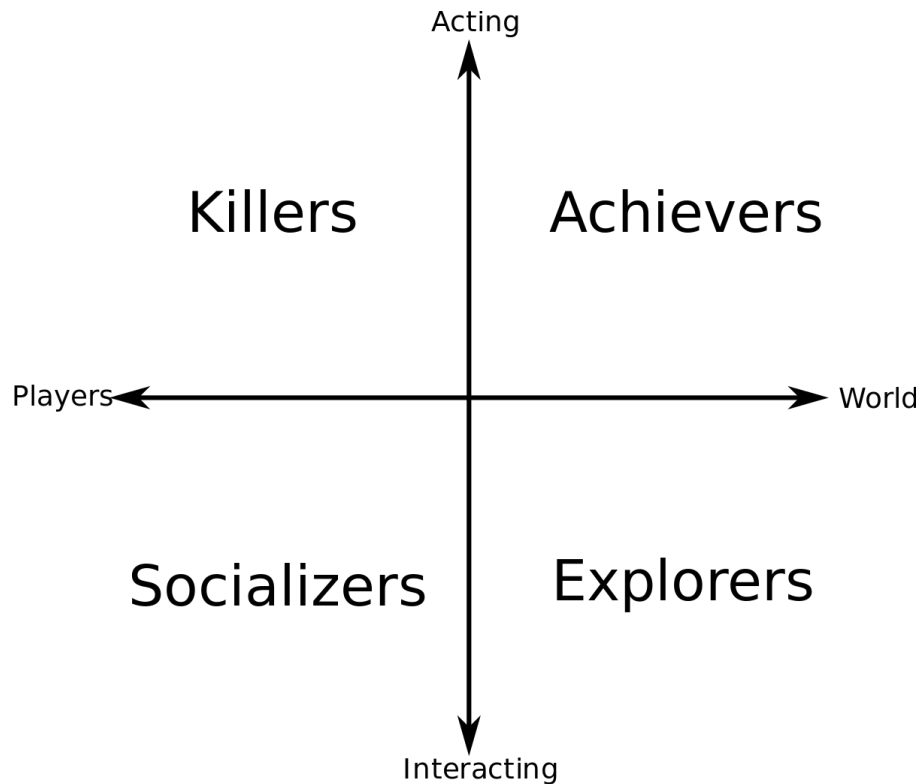
There are several approaches one can take when attempting to characterise gamers. Gamers present a diverse and dynamic range of personal traits (Tondello & Nacke, 2019), meaning that distinguishing them by type may first require the understanding of the role of not only age, gender, and mentalities toward video games (Tondello & Nacke, 2019), but also their motivations and

preferences. However, before delving into specific characteristics inherent in the gamer identity, we must primarily grasp the meaning of the term *gamer*.

Deshbandhu (2016) states that this term has been often used in rather simplistic ways to describe anyone who plays video games as a pastime activity. Being a gamer holds a meaning that goes beyond simply playing and enjoying video games. Gamers, for instance, have the ability to make use of gaming terminology. This includes, but isn't limited to, utilizing abbreviations to describe themselves, other characters or players, genres or types of games, and actions commonly performed within the context of the game (Cade & Gates, 2017). Nevertheless, it is important to note that individual perceptions about the meaning of the term gamer are intrinsically interdependent with each individual's gaming experience (Deshbandhu, 2016). As such, it would be unproductive to attribute an exact meaning to the term, considering the flexibility and comprehensiveness of gaming culture.

In turn, a more valuable and effective way of describing gamers may lie in recognizing motivational and preferential patterns toward video games. William et al. (2008) believe that understanding who plays and for how long might not be enough to comprehend different types of gamer, and rather that the question may depend more on why they play and what motivates them to engage in such activity. In his seminal book, *The Art of Computer Game Design*, Chris Crawford (1982) claimed that "the fundamental motivation for all game-play is to learn", although "there are many other [secondary] motivations that have little to do with learning" (p. 16). Such motivations could include fantasy or exploration themes, proving oneself, and social lubrication (Crawford, 1982). Since then, a vast body of work regarding the subject has been developed.

Many of the current models that address this topic are built upon the foundations of Bartle's taxonomy of players (1996), which was essentially designed to interpret players' behavioural patterns in multi-user dungeons. Bartle uses this model to differentiate between four types of player: Killers, Achievers, Socialisers, and Explorers. However, and as Tondello et al. (2017) claim, this model falls short insofar as it focuses on a very specific type of game. In addition, it assumes that preference for any given type of play automatically invalidates or suppresses other types of play (Yee, 2007). Hamari & Tuunanen (2014) also note that "people's behaviour and motivations can change in time and based upon the context, and therefore it can be difficult to pin-point exactly to what category a person belongs to". An efficient approach to gamer motivations and attitudes must recognize the "layered and overlapping character of gaming mentalities" (Kallio et al., 2011, p. 346).



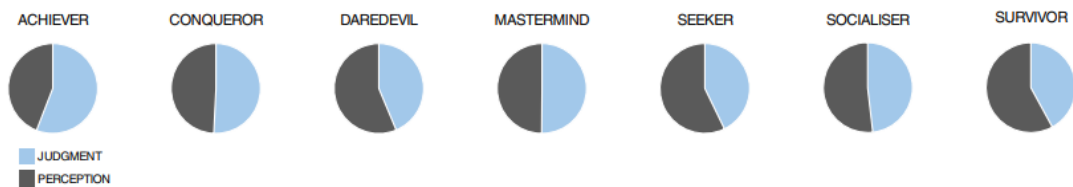
**Figure 1.1:** Bartle’s taxonomy of player types (1996).

Regarding other models, BrainHex is a player satisfaction model that regards seven different archetypes of players and explains how each archetype is able to characterize a certain style of play (Nacke et al., 2013). The archetypes are: Achiever, Conqueror, Daredevil, Mastermind, Seeker, Socialiser, and Survivor. BrainHex takes inspiration from neurobiological<sup>1</sup> player satisfaction research, as well as previously designed player typologies, discussions about patterns of play, and literature describing game emotions. BrainHex evaluates players on two different factors: Judgement and Perception. Judgement refers to goal-orientation in the player, and Perception relates to one’s process-orientation. As Nacke et al. (2011) explain, “individuals preferring process-orientation may well be interested in the quality of the eventual outcome, but are not as motivated as goal-oriented individuals to actually *complete* the process” (p. 293). BrainHex essentially works as a survey<sup>2</sup> that poses various questions about players' preferences in video games regardless of their experience with the medium. The answers given in the survey are then measured in terms of Judgement and Perception, thus classifying the player type accordingly. Although having gathered notable attention among researchers, Tondello et al.

<sup>1</sup> Neurobiology studies how one’s nervous system processes information and mediates behaviour.

<sup>2</sup> The survey can still be accessed online (<http://survey.ihobo.com/BrainHex/index.php>). Date of last access: June 6 2021.

(2017) state that it lacks empirical evidence of its effectiveness. Results from a study by Busch et al. (2016) have shown that in terms of psychometrics, a field of study concerned with the objective measurement of psychological factors such as personality traits, the BrainHex model still has room for improvement. What is more, Busch et al. (2016) propose that some of the model's archetypes should be refined in order to feel more distinct.



**Figure 1.2:** BrainHex: A neurobiological gamer typology model (Nacke et al., 2013). Each player type is defined by the weight of Judgement and Perception factors.

Yee attempted to further develop Bartle's taxonomy by avoiding collapsing all video gamers into simplified archetypes (Yee, 2007). Thus, Yee initially distinguished gamer motivations by creating three categories: Achievement, Social, and Immersion. This model has been continuously worked on over the years, leading to a comprehensive gamer motivation model that encompasses six different motivating agents, each with two variables (Yee, 2015).





Action "Boom!"	Social "Let's Play Together"	Mastery "Let Me Think"	Achievement "I Want More"	Immersion "Once Upon a Time"	Creativity "What If?"
<b>Destruction</b> Guns. Explosives. Chaos. Mayhem.	<b>Competition</b> Duels. Matches. High on Ranking.	<b>Challenge</b> Practice. High Difficulty. Challenges.	<b>Completion</b> Get All Collectibles. Complete All Missions.	<b>Fantasy</b> Being someone else, somewhere else.	<b>Design</b> Expression. Customization.
<b>Excitement</b> Fast-Paced. Action. Surprises. Thrills.	<b>Community</b> Being on Team. Chatting. Interacting.	<b>Strategy</b> Thinking Ahead. Making Decisions.	<b>Power</b> Powerful Character. Powerful Equipment.	<b>Story</b> Elaborate plots. Interesting characters.	<b>Discovery</b> Explore. Tinker. Experiment.

**Figure 1.3:** Gamer motivation model (Yee, 2015). Gamers are classified across 8 different categories, each with 2 variables, according to what motivates them in video games.

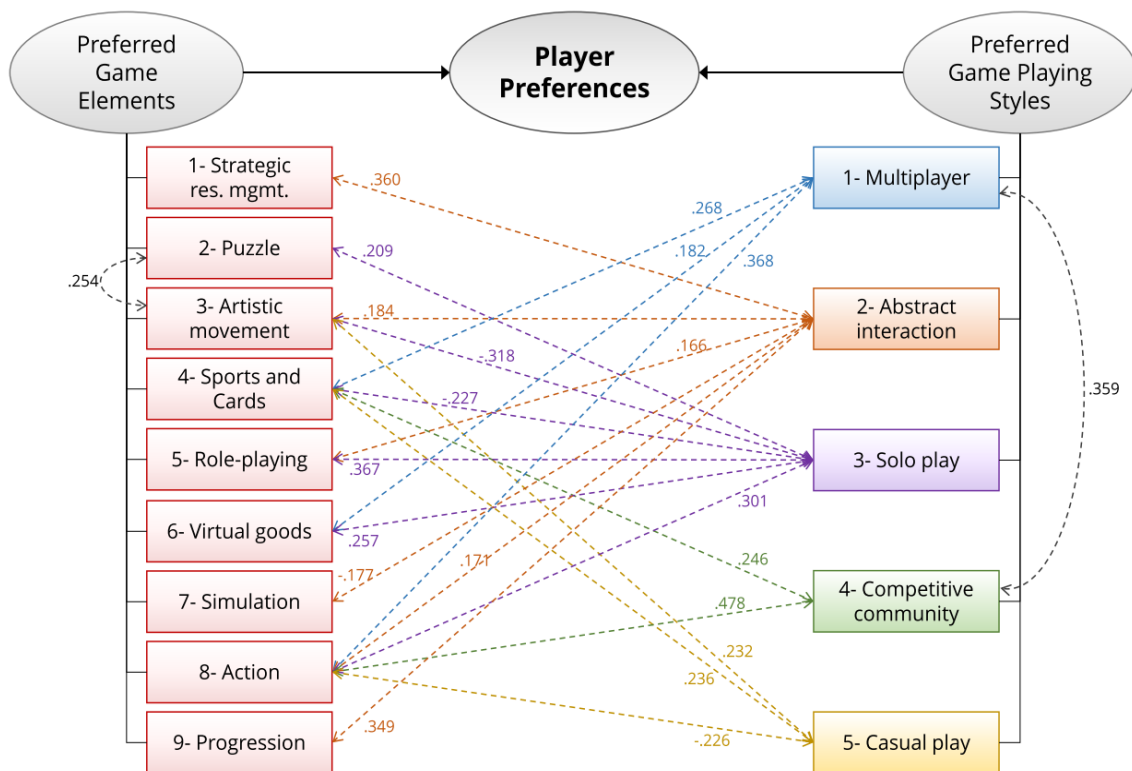
Fullerton (2014) also attempted to categorize players according to the pleasures each takes from the experience based on Bartle’s taxonomy. This resulted in ten different types of player that can be defined by their appeal to competitiveness, achievement, creativity, seriousness towards the game, and so on (p. 104). Fullerton adds that the proposed list is not exhaustive, and that some types of player have been looked into more than others by game designers. The ten types of player are:

- *The Competitor:* Plays to the best other players, regardless of the game.
- *The Explorer:* Curious about the world, loves to go adventuring; seeks outside boundaries – physical or mental.
- *The Collector:* Acquires items, trophies, or knowledge; likes to create sets, organize history, etc.
- *The Achiever:* Plays for varying levels of achievement; ladders and levels incentivize the achiever.
- *The Joker:* Doesn’t take the game seriously – plays for the fun of playing; there’s a potential for jokers to annoy serious players, but on the other hand, jokers can make the game more social than competitive.
- *The Artist:* Driven by creativity, creation, design.

- *The Director*: Loves to be in charge, direct the play.
- *The Storyteller*: Loves to create or live in worlds of fantasy and imagination.
- *The Performer*: Loves to put on a show for others.
- *The Craftsman*: Wants to build, craft, engineer, or puzzle things out.

(Fullerton, 2014, p. 104)

One common issue regarding the aforementioned models is that they rely too heavily on multiplayer video games (Hamari & Tuunanen, 2014). Tondello et al. (2017) designed a model that attempts to address this issue by correlating gamers' preferred game elements and game playing styles. As such, further exploration of individual preferences may occur without overly focusing on one single genre or type of game.



**Figure 1.4:** Player preferences model and significant correlations (Tondello et al., 2017). Left column represents players' preferred game elements. Right column represents players' preferred game playing styles.

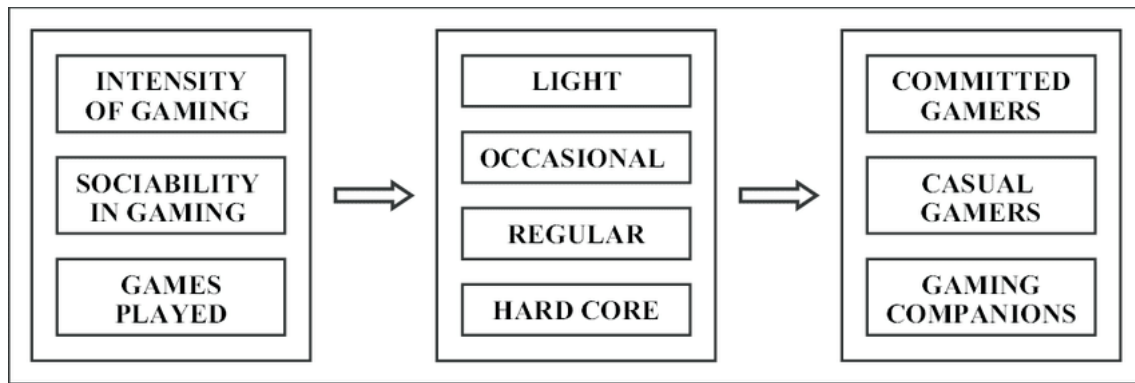
Most studies based on the presented models report not only the overlapping nature of motivations (Yee, 2007), but they further state that these motivations are bound to vary with age

and gender (Tondello & Nacke, 2019). A quick glance upon studies regarding populational characteristics of gamers, especially regarding age and gender, show just how far it has come in terms of diversity. Stereotypes used to dictate that the white, male, teenager was the figure leading the gaming community (Deshbandhu, 2016), but more recently the female audience has been stated to constitute roughly a third of the gamer population (Cade & Gates, 2017). Furthermore, reports state that adults in their thirty to mid-thirties and females are said to have a tendency to play more hours per week (Williams et al., 2008; Cade & Gates, 2017), and also that there is a tendency to play more as one gets older (Williams et al., 2008).

Regarding such findings, it is plausible to say that gamer identity thrives in its complexity of characteristics that go beyond gender, age, and/or game-related skill restrictions. Nowadays, video games are available on a number of different platforms. This means that regardless of the demographic in question, gamers of all kinds are able to find games that suit their own dispositions. As a consequence, gamers are now more diverse than ever before.

The methods used to distinguish between types of gamers are diverse and have sets of attributes that can change according not only to researchers' views and findings, but also according to gamers' individual perceptions of gamer types. As such, and considering how there is no one definitive model for ascribing gamers by type, we must take into account the several typification systems that have been explored in this area.

Kallio et al. (2011) worked on a model that allows for the distinction of three gamer types. These include *committed gamers* (the ones who play frequently and are connected to gaming communities), *casual gamers* (the ones who play occasionally and/or in short sessions), and the *gaming companions* (the ones playing with someone else for company). Respectively, committed mentalities pertain to high concentration and immersion levels, casual mentalities are hard to define with precision due to high variation, and social mentalities (associated with *gaming companions*) engage in gaming for as long as the group keeping them company plays, or until the group moves onto another task.



**Figure 1.5:** Gaming mentalities and gamer classification by Kallio et al. (2011).

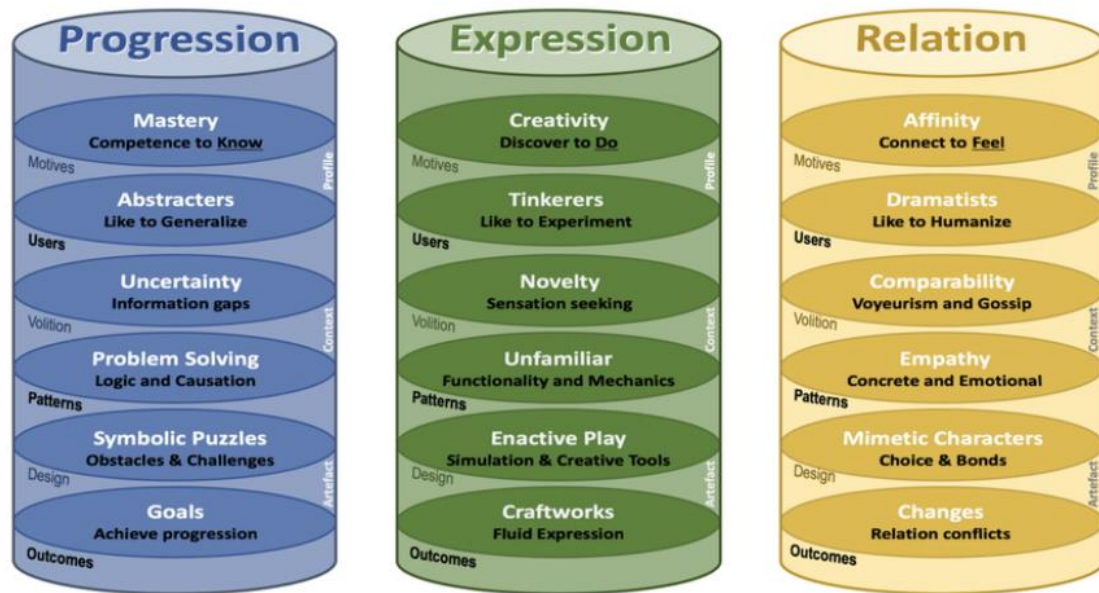
On the other hand, simpler approaches to typifying gamers have also taken place. Vermeulen et al. (2011) explored video game preferences between two essential types of gamer: core players and non-core players. In their study, they described core players as the ones who play core genres (shooters, fighting, action-adventure, sports, racing, strategy, survival horror, roleplaying and MMO games) at least once a week. Likewise, non-core players were defined as all other individuals to whom the core player tag was not attributable. Results showed that while female and male core players' preferences were in line with male non-core players', the likings of female non-core players in video games differed significantly.

Although many other systems have been developed to evaluate contrasting gamer categories, we can argue that the most common notions of gamer types stem from the duality of casual and hardcore gamers (Deshbandhu, 2016). For instance, Poels et al. (2012) examined differential behaviours and characteristics between casual and hardcore gamers according to a variety of components such as genre, challenge, time invested in gaming, and time spent on game related activities such as gaming forums. Yet, they did conclude that the characterization of gamers as hardcore or casual is not as plain as it is often assumed. Juul (2010) understands casual players as people who prefer positive and pleasant fictions, play few games and for short bursts of time, and dislike difficult games. Concurrently, he defined hardcore gamers as the ones seeking emotionally negative fictions, playing a multitude of games, gaming often and in long sessions, and enjoying difficult games. Similarly, Yee's (2018) work on gamer motivation profiles has based itself on an inquiry that questions gamers about their game type, in three main categories: *Casual* (plays infrequently or in short sessions), *Core/Mid-Core* (plays regularly but is not overly serious or competitive), and *Hardcore* (has high-end equipment and plays seriously or competitively). Kowal et al. (2018) make use of the same nomenclature when questioning participants of their study about how strong they felt about their position in gaming.

Hamari & Tuunanen (2014) researched the subject by gathering multiple studies on player types and displaying their similarities and divergences. Immediately noticeable is how in a substantially short period of time so many fundamentally different models, most of them with distinct terminology from each other, have surged.

Such heavy segmentation and differing terms have led researchers to believe that, perhaps, gamer types should not rely as greatly on dichotomic approaches, but rather be seen as belonging to a continuum (Gandasegui, 2010; Hamari & Tuunanen, 2014). The fact that so many gamer and player type models have been proposed over the past few years might also ironically reflect how unfeasible it is to refer to gamers based on a few differing terms. Hamari & Tuunanen (2014) also suggest that perhaps boundaries should not be drawn so drastically. Instead, we should approach the issue as a perceived scale of engagement, where gamer types are never at any extremity of the scale, but somewhere along it. In turn, player engagement with the game can be analysed through different factors, namely degree of willingness to participate in games, effort put into the game, amount of money one is willing to pay to play, and so forth. With so many variables to take into account, it is far more likely that players ought to be positioned somewhere along a spectrum, rather than at its extremities.

Player engagement can also be analysed from other perspectives. For instance, Zagalo (2020) made the distinction between three different engagement streams. In other words, these are essentially three continuums through which engagement can be analysed.



**Figure 1.6:** The Engagement Design Model by Zagalo (2020). The three engagement streams are: Progression, Expression, and Relation.

Zagalo (2020) identifies these engagement streams based on players' profiles and motivations, such as the ones shown in figures 1.1 and 1.3. Personas, as Zagalo describes them, represent an engagement profile. Progression modelling centres on the Abstracter profile, which is motivated by mastering the game and becoming skillful and knowledgeable about said game. Abstracters' engagement stems from a clear sense of progression within the game world. Expression modelling regards the Tinkerer profile, where creativity and experimentation are the main motivators. Tinkerers' engagement relates to their ability to interact with a variety of content in whichever way they see fit. They are motivated to play with all variables of the game. Last but not least, Relation modelling is based on the Dramatist profile, motivated by connecting with other humans and by humanising everything they can relate with. Dramatists' engagement revolves around the humane, and the feelings that correlate to it. Each persona is drawn to a specific drive: Abstracters focus on getting "to know", Tinkerers on getting "to do", and Dramatists on getting "to feel" (Zagalo, 2020. p. 55). These verbs describe how each profile primarily chooses to interact with artefacts, thus portraying how they find engagement not just in games, but in real life as well.

Even then, and just as Hamari & Tuunanen (2014) have too suggested, engagement is barred by its intrinsically subjective nature, which turns the task of understanding how engagement occurs and its consequent meaning much more arduous (Zagalo, 2020). On top of that, the fact

that engagement factors can intersect represent even more variables through which player engagement may be analysed, further deepening the root of the question.

**Table 2.1.1:** Player type methodologies compiled by Hamari & Tuunanen (2014).

Author(s)	Year	Basis	Methods	Presented player types	Games in the study
Whang Chang	2004	Psychographic	Quantitative - factor analyses	Single-oriented player, Community-oriented player, Off-real world player	Lineage (MMO)
Tseng	2010	Psychographic	Quantitative - factor analyses	Aggressive gamer, Social gamer, Inactive gamer	Online games in general
Yee	2006, 2007, 2012	Psychographic	Quantitative - factor analyses	Achievement, Social, Immersion (+subconstructs)	EverQuest, Dark Age of Camelot, Ultima Online, and Star Wars Galaxies (MMOs)
Zackariasson et al.	2010	Psychographic	Conceptual-analytical	Progress & provocation, Power & domination, Helping & support, Friends & collaboration, Exploration & fantasy, Story & escapism	World of Warcraft (MMO)
Stewart	2011	Behavioral Psychographic	Conceptual-analytical	Guardian/Achiever, Rational/Explorer, Idealist/Socialiser, Artisan/Killer, Conqueror, Wanderer, Manager, Participant, Hardcore, Casual	The same ones as in the previous studies that it combines
Bartle	1996	Behavioral	Qualitative observations & Conceptual-analytical	Achiever, Explorer, Socialiser, Killer	MUDs
Lazzaro	2004	Behavioral	Conceptual-analytical	Easy fun, Hard fun, Altered states, The people factor	Non-exclusive
Drachen et al.	2009	Behavioral	Quantitative - clustering of gameplay data	Veteran, Solver, Pacifist, Runner	Tomb Raider: Underworld
Ip Jacobs	2005	Behavioral	Quantitative - factor analyses	Hardcore gamer, Casual gamer	Non-exclusive
Kallio et al.	2011	Behavioral	Triangulation of quantitative and qualitative data	Social mentalities, Casual mentalities, Committed mentalities	Non-exclusive
Hamari Lehdonvirta	2010	Behavioral	Conceptual-analytical combination of qualitative observations and marketing theory	For example character levels and classes	EverQuest, Habbo, Puzzle Pirates, World of Warcraft... (Online games)
Williams et al.	2006	In-game demographic	Triangulation of quantitative and qualitative data	Group centrality, Size of the guild, Type of server, Faction	World of Warcraft (MMO)

As a result of the plethora of gamer type models available, Deshbandhu (2016) concluded that having a rigid and binary understanding of gamers and gaming culture just isn't attainable. Hamari & Tuunanen (2014) state that "the problem with dividing players into just two categories is that it seems to be filled with excess simplifications and even implausible speculation" (p.35) and that "the question of hardcore and casual gaming behavior does not seem to be black and white" (p.35).

## 1.2 Non-gamers

Non-gamers tend to be harder to characterize as the amount of literature concerning this demographic is not yet as developed as gamer demographics. While plenty of studies emphasize the understanding of gamers and their population characteristics (Cade & Gates, 2017; Deshbandhu, 2016), key-features and abilities (Cade & Gates, 2017), perceptions of gaming (Yee, 2018), and motives toward games (Williams et al., 2008; Hamari & Tuunanen., 2014), only a select few studies strive to illustrate characteristics of non-gamers without depending on a comparative filter between gamers and non-gamers. Just like gamers, we can however find motives and reasons as to why non-gamers choose not to or present a lack of interest in games and gaming in general.

Some attempts have been made to describe the position of non-gamers in the gaming context. As a *non-gamer* himself, Gandasegui (2010) wrote an article about the meaning of the term. While reflecting on its meaning and on his own identity as a non-gamer, he described the term as embracing all individuals who "do not play games simply because [they] do not want to even though [they] live in a digital world where [they] are surrounded not only by technology, but also by the recreational side of it"<sup>3</sup> (p. 2). For their research purposes, Winn and Heeter (2009) classified non-gamer individuals as those who had not played a game ever or in a period over six months. Others even affirm that due to the ongoing process of gamification, non-gamers have all been turned into gamers and that thus, non-gamers do not truly exist anymore (Granat, 2013). The variety of opinions pertaining to the status of the word reveal that outlining non-gamers might

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<sup>3</sup> "This article is a sociological and psychological research about those who, like me, do not play games simply because we do not want to even though we live in a digital world where we are surrounded not only by technology, but also by the recreational side of it." (Gandasegui, 2010, p.2)



require further research. As such, it is conceivably of greater use to delineate what the reasons for non-gamers' disregard for gaming could be.

Non-gamers can usually attribute lack of time to play or not being able to afford video game technology as their main reason for not playing video games (Gandasegui, 2010). Even though these are valid reasons on their own to explain why one decides not to engage in gaming, there are other conditions of personal and social nature that weigh in on this decision. One of the most common motivations that can differentiate gamers from non-gamers is the interest (or lack thereof) in video games and the amount of fun each can get out of the experience. Gandasegui (2010) states that non-gamers do not find enough fun in video games to justify spending their leisure time playing them and not doing something else. Even considering how influential technology has perceptibly come to be, some individuals are bound to prefer spending their time out of technology's reach.

In a study focused on understanding why non-gamers (particularly women) didn't play video games, Winn & Heeter (2009) hypothesized that non-gamers chose not to play video games because of lacking or having difficulty finding interesting games. This hypothesis was not supported however, and what they found instead was that people playing more often stated that their interest in games would be higher if "better" games were made. This could be correlated with Gandasegui's (2010) idea that non-gamers simply are not compelled by the medium, or by what the medium was offering up until the time of the study.

Complementing this line of thought, Brown (2017) attempted to delineate the main reasons why older adult non-gamers did not find video games interesting. The key-factors were limited knowledge of gaming platforms, games being too challenging or difficult, and video games being perceived as timewasters. What is more, Brown reports that "there were numerous times during the interviews when participants expressed that they were simply not motivated to play any kind of digital game", as participants referred to them as a "waste of time" (p. 223). Even when some participants acknowledged the benefits that came with playing video games, they simply felt they had no spare time to play them.

Individuals have a tendency to resort to social self-categorization to analyse their role as gamers or non-gamers. This categorization is not limited to how relevant gamer identity is to the individual's quotidian, but also implies the ways in which being a gamer can relate to the cultural milieu they are inserted in (De Grove et al., 2015). This results in a self-categorization of gamer or non-gamer partly based on how our acquaintances are perceived in the gaming context. Consequently, non-gamers are bound to be characterised not just by the reasons and motives that repel them from playing, but also by what they perceive as gamer/non-gamer.

Opposite to gamer typologies, where denominations for various kinds of gamer can present distinctive definitions according to each author, there does not yet seem to exist enough literature to support either the existence or the dismissal of non-gamer types. There are, however, several models that identify types of players, as was demonstrated in Table 2.1. As it will be explored in section 1.4., the term *player* does not necessarily associate exclusively with gamers (Juul, 2010). Many early literature and models on the topic had not yet taken into account the possibility of players, gamers, and non-gamers all being separate, yet interdependent concepts.

This means that it is possible that some player classification models could be applied to non-gamers. Although they are not gamers, non-gamers can still be evaluated in their qualities as players of games. Even then, the problem would still persist because the typification of non-gamers would be implemented according to their statuses as players instead of their abilities, traits, and experiences as non-gamers. As such, this subject will require further investigation before non-gamer types, if at all existent, are able to be outlined. While many motives can be attributed to why non-gamers choose not to game, the dearth of literature regarding non-gamer types still represents an obstacle to non-gamer identity.

### 1.3 A comparison of gamers and non-gamers

Drawing comparisons between gamer and non-gamer personalities can offer an effective method to better characterise both groups, by understanding dichotomies and similarities among them. This section does not aim to find ways to further segregate gamers and non-gamers, but rather tries to shed light upon their identities, making clearer the aspects in which they can connect and/or diverge.

While gamer and non-gamer characterizations have been discussed in previous sections, it is nonetheless essential to consider the perceptions that gamers and non-gamers have about the meaning of *gamer* and *gaming*. For instance, a study by Yee (2018) reported that the concept of *hardcore gamer* incited different views among male and female gamers. For the male audience, playing a game “seriously” meant being able to beat other players, thus reinforcing the appeal of competitiveness. For female gamers, however, playing a game “seriously” involved completionism and creativity. The term *seriously* is directly related to both audiences’ views on what a *hardcore gamer* is<sup>4</sup>. This adds another layer, one that is much more personal, to how definitions of gaming terms occur.

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<sup>4</sup> The term *seriously* does not refer to *serious games*. In the context of Yee’s (2018) study, participants referred to hardcore gamers as players who engaged in serious gameplay. Here, *serious* is seen as playing the game

Deshbandhu (2016) conducted three in-depth interviews with contrasting types of gamer as a means to explore how gamer identity and gaming perceptions could vary from person to person. Deshbandhu noted that all participants defined themselves in relation to whatever games they had played, their game play patterns and the way in which they perceived themselves in the greater scheme of the gaming world. Beyond that, one of the interviews returned somewhat problematic and paradoxical results when one of the participants, who played games frequently and on a variety of platforms, failed to identify herself as a gamer. This refusal of the gamer identity derived from her judgment of what *gamerworthy* games are. This reasserts not only the dominant binary values that other researchers such as Consalvo (2009) report, but also that “the concept of *gamerworthiness* could offer us newer possibilities and points of entry into the players’ psyche” (Deshbandhu, 2016, p. 59).

Therefore, gaming perceptions are sure to suffer or be negatively moulded by damaged assessments of what gaming means. We can witness occurrences of this in an investigation by Brown (2017) that explored older adult non-gamers’ engagement with video games. Brown reported that some participants “did not seem to grasp the full scope of digital gaming” (p. 224). Brown found that misinformation regarding digital games led many participants to perpetrate biased views over what a digital game encompasses. As a result, some participants struggled to understand what could or could not be considered a digital game.

The question of the positive impact of video games on cognitive capabilities has been tackled and still is among researchers in the area. Games do seem to be able to bring benefits on certain human aspects, but at the same time some speculation might have brought forward gaming benefits that are not in fact truthful. If on the one hand authors such as Brown (2017) state that various studies have suggested positive associations of playing video games with increments on visuospatial ability and processing speed, others such as Gerber & Scott (2011) have conducted investigations that contradict the belief of greater critical thinking dispositions among gamers that was upheld by theoretical literature on the subject (Prensky, 2001). Besides the lack of empirical data supporting the claim that gamers show greater tendency towards critical thinking than non-gamers, Gerber & Scott (2011) concluded that gamers and non-gamers displayed identical critical thinking dispositions, thus contradicting previous literature.

Findings reported by Geslin et al. (2011) upon analysing gamers’ and non-gamers’ reactions to a prototype horror game in virtual reality show that even in an immersive environment like VR, gamers who had spent more time with the medium did not get scared as easily. While experienced

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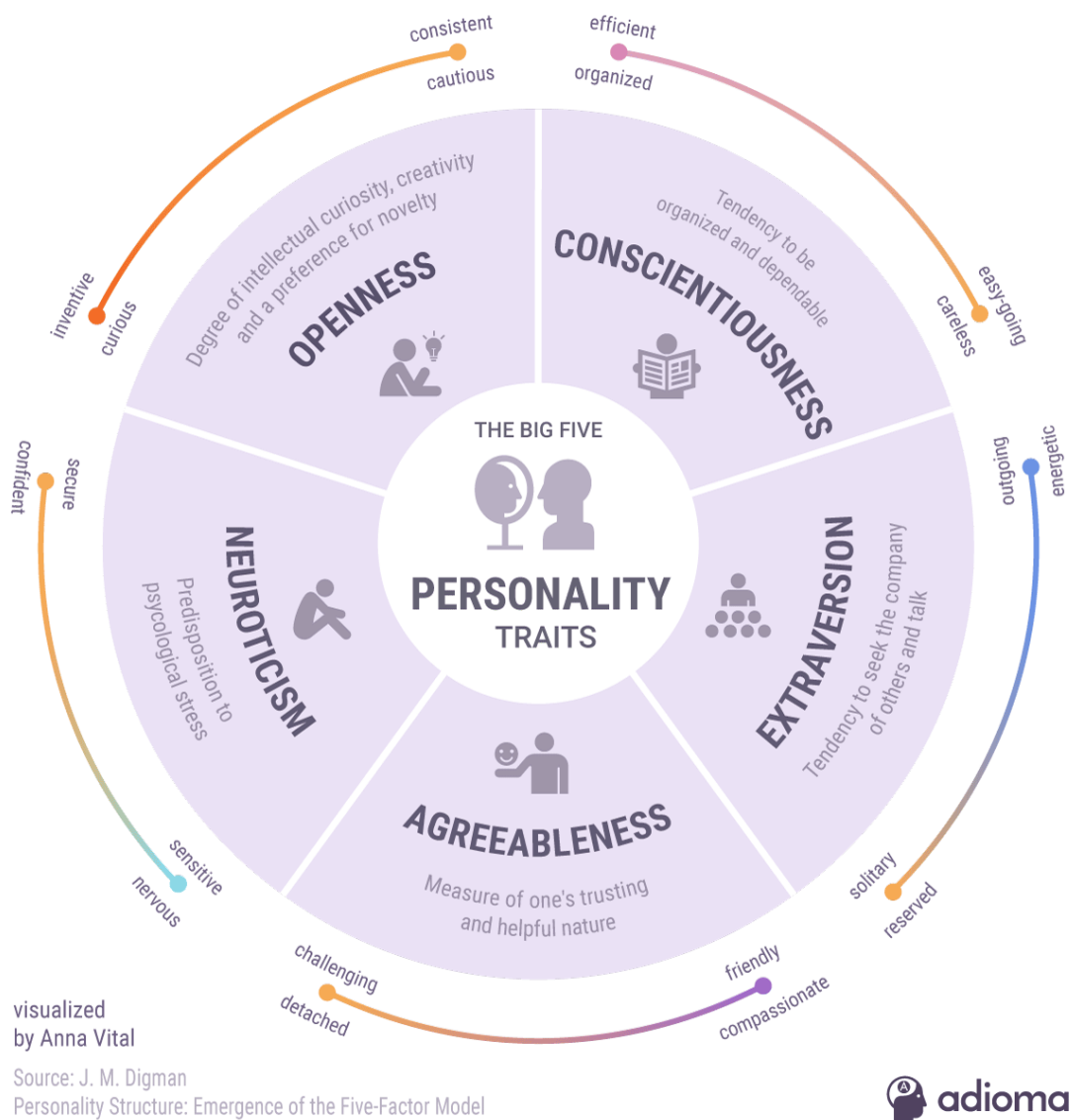
competitively, as completing everything a game has to offer, or simply as being able to beat other players at the game.

players were not as emotionally impacted by the game, non-gamers' emotions were more easily triggered even though the game used common horror game tropes. This roughly demonstrates the gap in what each group perceives as efficient game design.

There are several other studies that aim to compare not just cognitive abilities, but different personality traits among gamers and non-gamers. Braun et al. (2016) applied the Big Five model<sup>5</sup> to compare personality traits among groups. The two traits considered significantly different in the study were neuroticism and conscientiousness. Non-gamers scored significantly higher on both. This not only means that non-gamers are more susceptible to experiencing negative emotions such as anxiety or fear during play, but they also tend to be more self-disciplined and focused.

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<sup>5</sup> “The Big Five Model, also known as the Five-Factor Model, (...) states that personality can be boiled down to five core factors”: Conscientiousness, Agreeableness, Neuroticism, Openness to Experience, and Extraversion (Lim, 2020). A key feature of the Big Five model is that it “focuses on conceptualizing traits as a spectrum rather than black-and-white categories” (Lim, 2020). For instance, when measuring Extraversion, one would not be considered fully extroverted or introverted, but placed somewhere along the scale where it determines one’s precise Extraversion level.

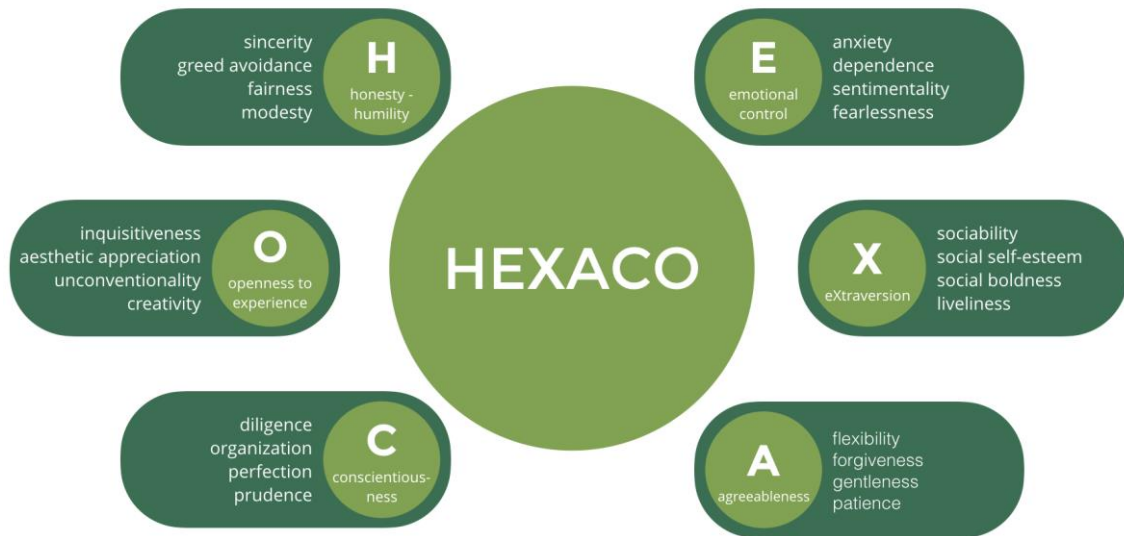


**Figure 1.7:** Big Five personality traits by Goldberg (1993). Conceptualisation by Anna Vital (2018).

For Abbasi et al. (2020), the studies conducted by Braun et al. (2016) and (Teng, 2008), were limited by factors such as the choice of “methodology and personality model” (p. 2). Instead, they used the HEXACO<sup>6</sup> model (Lee & Ashton, 2004) to characterize and differentiate personalities. Here, however, it is stated that gamers and non-gamers do not show much variance

<sup>6</sup> The HEXACO model of personality structure takes in much of the Big Five model, but redefines some personality factors and adds a sixth personality trait. The HEXACO model is often used by “personality researchers to capture differences between people” (Psychology Today, n.d.) on the following factors: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience.

in the Emotionality facet, meaning that, contrary to Braun et al.'s (2016) study, fearfulness, anxiety, and vulnerability are not significant factors among groups.



**Figure 1.8:** HEXACO personality inventory by Lee & Ashton (2004). Conceptualization provided by psyML (2021).

Other researchers have also attempted to study gamers and non-gamers regarding their performances in game-like environments. Upon exploring reaction time differences among action video game players (players of FPS and MOBA genres) and non-video game players, Kowal et al. (2018) gathered that while AVGPs (action video game players) had a significantly shorter reaction time, they were generally less precise than NVGPs (non video game players) in a Stroop Test<sup>7</sup>. They also found that “participants who devoted more time to gaming, happened to perform better” (p. 12) on the cognitive tests they ran. Kniestedt et al. (2018) took interest in gamer and non-gamer experience and performance between motion and joystick controls. Results showed that regardless of the participant being an experienced game player or not, performance was equally balanced. Findings indicate that motion controls might be a better option than joystick controls typically utilized in commercial games in terms of player adoption of game controls and/or mechanics.

On a final note, Casas (2013) hypothesized the results of having gamers and non-gamers participate in the game-making process. The results indicate that non-gamers were inclined to

<sup>7</sup> A Stroop Test aims to examine an individual’s ability to keep focus on any given task(s) regardless of cognitive interference surrounding said tasks. It also evaluates the individual’s capacity to switch between tasks in the presence of distractions (Kowal et al., 2018).

think of more open and unique ideas that had not been yet explored in gaming. Furthermore, Casas concluded that non-gamers would strive in “creating original concepts and radical ideas”, but gamers, in general, would be able to “make a better game, as they would be appropriately ready for the incoming wave of problems that would be inevitably encountered”. The disparity in how both groups would create a video game can explain why non-gamers, whose concepts of “good” or “interesting” games are seemingly harder to achieve, lack interest in gaming.

## 1.4 Non-gamers can be players

The concept of “player” should be carefully analysed and separated from “gamer” and “non-gamer”, as it can ultimately be a comprising part of both terms while never truly fully belonging to either. What is meant by this is that just inasmuch as a player does not necessarily make a gamer, non-gamers can also be players without being automatically deemed as gamers.

This is further evidenced by the belief that the emergence of video games brought forth a new and exclusive language of their own that excluded all those who did not comprehend this language (Juul, 2010), which in turn developed a segregation of sorts where non-gamers’ access to the video game world was conditioned by the need to learn gaming conventions (Gandasegui, 2010). Consequently, this segregation has led to the common supposition that in order to be a player of games, one has to be a gamer. Many studies fail to address or even recognize the duality between player and gamer/non-gamer.

While Shaw (2015) defends that anyone can be a gamer, she also states that being a gamer still requires one to play specific types of game or being invested in video game culture in ways that most people are not. However, she does not believe that everyone who plays games has to forcefully identify as a gamer. On the contrary, Shaw defends that this is an arbitrary tag, and that one does not need to be a gamer to care about games or to be part of the gaming industry’s assessments. Following this line of thought, we can also assume that one identifying as a non-gamer does not necessarily translate into not playing or having contact with games. Not being a gamer is not the same as not being a player of games. This is further supported by Shaw’s (2015) study reports stating that many people that affirm playing games don’t see themselves as gamers.

Juul’s recognition of the diverse cast of players existing beyond simplistic denominations such as “hardcore” or “casual” and the flexibility that the term “player” possesses (Juul, 2010) coexist with the understanding that “there are many players of video games but only a select few of them can be called ‘gamers’” (Deshbandhu, 2016, p. 50).

Upon his interviews about gamer identity and what the meaning of “gamer” was for the interviewees, Deshbandhu (2016) reported one result in particular that is of interest to this question. The last of the interviewees, a game reviewer quite experienced with video games, understood that when attempting to understand gamer identity, a distinction should be made between “player” and “gamer”, as being a gamer is not reflected by simply playing games, but by internalizing game mechanics and rules.

Ishaan<sup>8</sup> believes in the existence of a player-gamer duality amongst video game players and feels gamers are different from players in their willingness to toil and put in the requisite number of hours to not merely master a game’s world and its rules but to internalize them on a deeper level so that they can be manipulated to one’s advantage. (Deshbandhu, 2016, p. 55-56)

Summing up, and having compiled what other researchers have found and contributed towards the subject, we understand that non-gamers can be players insofar as they are able to interact with games although having severely limited vocabulary, skills, and knowledge of how games function. A player can not identify him or herself as a gamer but still play games. Seemingly, the concept of *player* can act as a middleman between gamers and non-gamers: just as players can be gamers, non-gamers can potentially be players of games without being inserted in the gamer category.



**Figure 1.9:** Relationship between non-gamer, player and gamer.

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<sup>8</sup> Ishaan is one of the three people interviewed by Deshbandhu. Ishaan describes himself as a professional video game reviewer with access to the latest games and technology, thus labelling himself as a *hardcore gamer* (Deshbandhu, 2016).



## **2. Games associated with non-gamers**

In this chapter, we went over some game types which may be suitable for non-gamers. Through sections 2.1. to 2.6. inclusively, we respectively analysed casual games, persuasive games, newsgames, art games, not and non-games, and critical games, according to their key characteristics and potential to serve non-gamers.

Although the video games described can be played by any type of player, these were selected for their simpler mechanics and ease of play. It should be disclaimed that game categorization in the following paragraphs does not follow a rigid classification system. Games discussed in one section may have elements reminiscent of other categories.

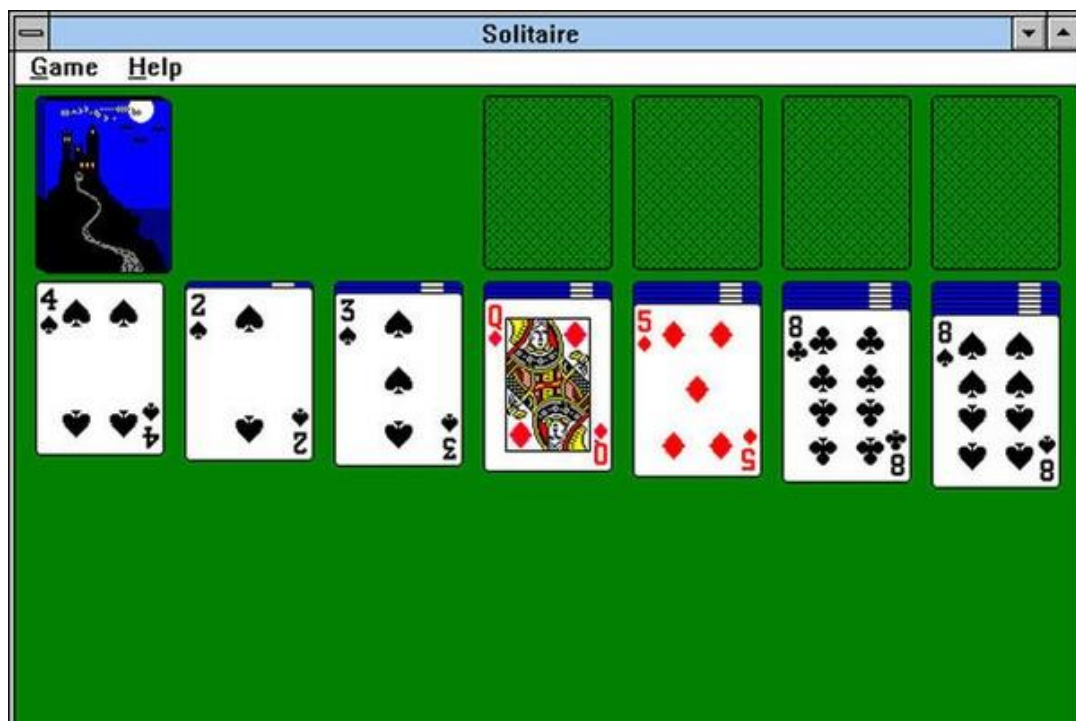
In section 2.7., we provide an evaluation on what the aforementioned game types, and more specifically critical games, may offer to non-gamers that other game types do not.

### **2.1 Casual games**

Casual games are video games developed with the mass consumer as their main target, even if they do not regard themselves as gamers. These games are usually characterised by being quick to access, easy to learn, requiring no previous video game skills or expertise of any sort, and not demanding any specific time commitment to play (Cheng, 2011). Casual games are flexible toward various types of players and uses. Juul (2010) states that casual games constitute a way to

“solve the problem of the missing pull”<sup>9</sup> (p. 5) by providing easy-going gameplay that can fit well in many different situations and with several types of players.

Even though casual gaming can be said to have begun with the development of *Microsoft Solitaire* (1988) (Cheng, 2011), casual games only became popular around the year 2000, and contrasted with the back-then traditional games, which would later be described as hardcore games (Juul, 2010). Games such as *The Sims* (2000), *Bejeweled* (2001), and *Zuma* (2003), which would all be turned into series later on, proved that the casual market had a place in gaming. As such, Eklund (2016) states that casual gaming appeared as video games and their users became more diversified, thus creating the need for distinct designations to differentiate early digital gaming (known as the hardcore) from a new type of seemingly casual games, genres, and gamers alike. Kuittinen et al. (2007) believe that the term *casual* is all too encompassing to categorize casual games and casual gaming as the same concept. For them, a casual game contains properties seen as casual, such as generally appealing content, simple controls, and/or fast rewards. Casual gaming, on the other hand, refers more to when the attitude towards a game is casual, for instance playing as a leisure activity.



**Figure 2.1:** *Microsoft Solitaire* (1988)

<sup>9</sup> Juul describes the *pull* in video games as “the subjective experience of looking at a video game and wanting to play it” (Juul, 2010, p. 122).

The most common elements of casual game design state that rules and goals must be clear, and that players must be able to reach proficiency fairly quickly. Moreover, and opposite to other traditional games, casual games adapt to the player's schedule and usually borrow themes and content familiar to the player (Cheng, 2011). Designing casual games for players with little to no experience can prove difficult since developers must balance between innovating enough to provide a perceptibly worthwhile experience to the player while also designing upon strictly well-known game conventions that reach a wider range of players (Juul, 2010).

Game mechanics are based on simple interactions such as matching, sorting, hitting, chaining, and constructing objects (Cheng, 2011). Juul (2010) identified two major trends in casual games. The first one is mimetic interfaces, meaning that the player physically mimics game activity on the screen, as is seen on games such as *Guitar Hero* (2005) and *Dance Dance Revolution* (1998) and on platforms such as the Nintendo Wii and Xbox's Kinect. The second trend is known as downloadable casual games: "purchased online, can be played in short time bursts, and generally do not require an intimate knowledge of video game history in order to play" (p. 5). This includes games such as *Cake Mania* (2006) and *Candy Crush* (2012), for instance.

Casual games are available on a multitude of platforms, including mobile devices, gaming consoles, web browsers, and even social networks (Cheng, 2011). More recently, hyper-casual games such as *Helix Jump* (2018) and *Crossy Road* (2014) have been striving as a new form of casual game. As the name suggests, they consist of even simpler mechanics and minimalistic user interfaces that offer virtually infinite replay value and engaging gameplay (Korman, 2020).

On an endnote, Consalvo (2009) warns that casual games do not necessarily represent a casual experience, as many players get invested in these games and think and interact with them in ways that are not casual. Consalvo further states that casual games should not all be perceived as unmemorable one-time experiences, as some of these games have deepened structures of game culture in several regards such as gaming capital<sup>10</sup> and game paratexts<sup>11</sup>.

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<sup>10</sup> "(...) gaming capital is the form of cultural capital accrued to gamers in part as they gain knowledge about games and game culture, but more importantly, as they share that knowledge with others. Thus players can develop gaming capital by playing a game a great deal and gaining deep knowledge of the game, which is then shared with fellow gamers" (Consalvo, 2009, p. 51).

<sup>11</sup> "(...) paratexts are the texts that surround texts, helping to give them meaning. Originally ascribed to books and literature, the term has evolved and been used to describe the apparatus surrounding videogames, such as the box art, walkthroughs, previews and reviews of games, and anything else that helps set a game in context and helps players understand it" (Consalvo, 2009, p.51).

## 2.2 Persuasive games

The belief that games can be created as tools capable of persuading individuals to adopt particular stances or take action about certain real world issues (Ferrara, 2013) has shaped a new form of video game: persuasive games. The main intent of persuasive games is to communicate messages and arguments to players, in order to convince them to adopt a specific viewpoint, influence behaviours, or change perceptions about certain topics (Bogost, 2007). However, their potential is not necessarily carried by their ability to change behaviours or perceptions, but more so by encouraging players to reflect about situations represented in the game space, thus persuading them to evaluate the outcomes of their decisions (Carita, 2015).

A persuasive game distances itself from commonplace video game patterns by primarily serving as a communicative vessel through its own gameplay. In other words, and although they usually portray short duration experiences, these games are able to carry impactful messages through the game's own mechanical language (Carita, 2015). As such, the power of persuasive games is not as much represented by its inherent content, but rather by the claims asserted through procedural rhetoric (Bogost, 2007).

Bogost, who coined the term *persuasive game*, defines procedural rhetoric as “the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images, or moving pictures” (p. ix). To better comprehend how the term came to be, Bogost analysed each of its constituents:

Procedurality refers to a way of creating, explaining, or understanding processes. And processes define the way things work: the methods, techniques, and logics that drive the operation of systems, from mechanical systems like engines to organizational systems like high schools to conceptual systems like religious faith. Rhetoric refers to effective and persuasive expression. Procedural rhetoric, then, is a practice of using processes persuasively. More specifically, procedural rhetoric is the practice of persuading through processes in general and computational processes in particular. (Bogost, 2007, p. 1-2)

Consequently, the procedural nature of video games turns them into proficient platforms for persuasion to succeed (Ferrara, 2013). This persuasion can engage various routes, according to the situations they intend to assess. Most commonly advergames such as *America's Army* (2002) or *Pepsiman* (1999), for instance, aim to advertise and attract players toward a company's product or an entity's service. Anti-advergames, like *The McDonalds Videogame* (2006) and *Disaffected!* (2006), do the opposite by critiquing companies and their production procedures or underlying code of conduct.



Figure 2.2: *The McDonald's Videogame* (2006).

Besides advertising-themed persuasion, persuasive games can also address political themes, as is seen in *CNN Campaign Rush* (2008), and educational contexts like in *Elemental* (2004), a game that teaches chemistry to high school students. Persuasive games also tackle social conundrums as is the case with *A Conversation With Hugo* (2015), intended to raise public awareness on bullying and gender issues.

Persuasion can occur through a number of distinct manners. de la Hera Conde-Pumpido (2017) differentiated between three types of gaming persuasion: 1) exocentric, if persuasive strategies are used to convey specific messages to the player; 2) endocentric, if it refers to persuading for the engagement and motivation of a player to play and keep playing the game; and 3) game-mediated, when the persuasive intent is not “built-in” in the game, but favoured by the play context (p.36).

### 2.3 Newsgames

As the name implies, newsgame is a term that names a broad body of work produced at the intersection of video games and journalism (Bogost et al., 2012, p. 6). These games, which are

created fairly quickly and as a response to current events (Treanor & Mateas, 2009), benefit from being able to expose complex concepts and explain them through gameplay, thus “translating news content into language agnostic mechanics (Grace, 2018, p. 20). They are also meant to be played and understood by the player in a short time span (Treanor & Mateas, 2009).

As the internet becomes the main source of news for a large majority of people on a global scale, newsgames present a new opportunity to change the journalistic landscape by utilizing games and their expressive power to reach out to new and broader audiences and explaining intricate systems efficiently by positioning the player at the centre of the action (Cabales, 2019). While their impact on a larger scale is still debatable, these games represent the possibility to help individuals form beliefs and make decisions (Bogost et al., 2012). Bogost et al. further state that newsgames are divided into several categories, depending whether they are based on current events, infographics, documentaries, puzzles, themes of literacy, community, or platforms.

Newsgames can be said to have been around since the beginning of the current millennium (Cabales, 2019) through the exploratory work of Gonzalo Frasca with games such as *September 12th* (2003), a game about the terrorist attacks at the World Trade Center on September 11 of 2001. Other games surged not long after such as *Food Import Folly* (2007), made for a publication in the *New York Times*, and *The Arcade Wire* (n.d.) series which provided critique based on real world incidents. Frasca (2004) defended that much like political cartoons, newsgames combine entertainment with oversimplified editorial points that allows players to grasp the gist of the news more easily. Treanor & Mateas (2009) add that “while political cartoons communicate solely using imagery and language, newsgames additionally use the methods as well as the rhetorical possibilities made available through gameplay” (p. 4).



**Figure 2.3:** *September 12th* (2003).

These rhetorical possibilities are, just as is witnessed with persuasive games, associated with the concept of procedural rhetoric earlier mentioned. Newsgames allow authors to imprint their stances and beliefs in the game's components and overall design, leading players to decipher the message through the rules and mechanics of the game. However, this procedural system can also indicate a few shortcomings of its own.

Because procedural rhetoric relies on players being able to grasp a concept through gameplay, it means that there is a possibility that the elicited player's emotions will be inconsistent with those intended (Treanor & Mateas, 2009; Cabales, 2019). As a result, games like *Madrid* (2004), and most notably *The Uber Game* (2017) left players with divergent takes on the meaning of the game.

With *The Uber Game*, players took to Reddit to discuss their opinions and takeaways. While some Redditors understood the game was designed with the intention to show how challenging driving for Uber could be, other players thought the game was intentionally designed to be easy. (Cabales, 2019)

Newsgames are at their best when, similarly to regular journalism, they ensure the content presented is objective and clear. Although they can provide players with first-hand experiences

that might be harder to explain on paper, they also constitute a more laborious and complex journalism platform.

## 2.4 Art games

Art games shift their weight from the commercial video game by placing emphasis on art, thus creating an interactive digital game with an artistic purpose. These games are usually not created with addictive gameplay or replay value in mind (Ploug, 2005), but rather to be intended as artifacts that carry their own comments on society.

Although art games can come in a variety of media formats, they always comprise experiences that are to some extent playable (Cannon, 2003). While most art games can be played online on a computer, they can also be exhibited as art by artists or curators (Ploug, 2005; Rocha, 2018). Regardless of how they are presented, they constitute playful, interactable pieces that display contents of political, cultural, and social nature.

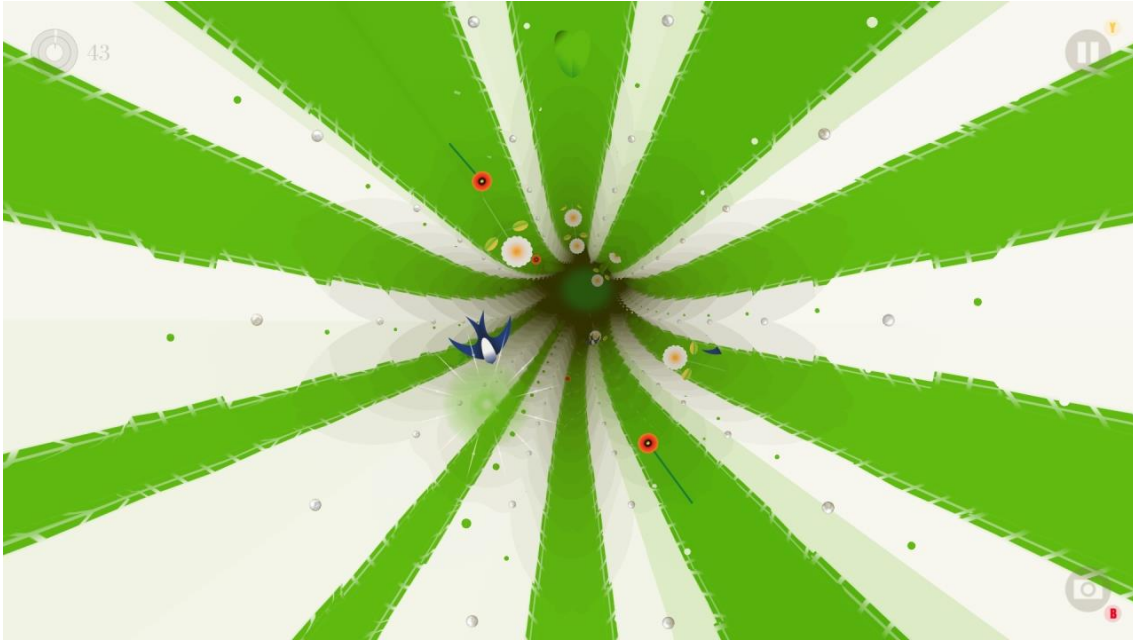
Holmes (2003) points out that art games are characterised by inheriting two of the following traits: “a defined way to win or experience success in a mental challenge, passage through a series of levels (that may or may not be hierarchical), or a central character or icon that represents the player” (p. 46). Cannon (2003) adds that, in competition-based scenarios, elements such as challenges, levels, and a central character see function as tools to aid the exploration of the game’s themes.

The structure of art games tends to challenge players’ mental capabilities in the sense that they must manipulate game controls (although they are usually not very complex) while they attempt to interpret its conceptual message. As such, they usually require the player to think critically in order to understand its critique (Holmes, 2003). In *Passage* (2007), for instance, the player goes through a pixelated environment in a matter of minutes, but only ever realises the message of the game once they notice how their character and surroundings are quickly transforming.

Ploug (2005) divides art games into political games and aesthetic games. *September 12<sup>th</sup>* (2003) is one good example of how a game can fit various categories at once, but also of a well-made political art game. *Luxuria Superbia* (2013) on the other hand, a game that indulges in the beauty of life, demonstrates how aesthetics can play a substantial role in these games. Art games can also include a multiplayer facet, as is the case with *The Endless Forest* (2005). Moreover, we



can also distinguish between art games that are built from the ground up and art mods. Art mods refer to modifications that are made to already existing games. As Cannon (2006) better describes, “artistic computer game modification involves the creative reuse of a pre-existing piece of computer game software and/or hardware for a specifically artistic outcome” (p. 7).



**Figure 2.4:** *Luxuria Superbia* (2013).

One well-known example is *Velvet-Strike* (2002), which takes themes of violence present in *Counter-Strike* (1999) and turns them into anti-war statements.

Considering the amount of time, effort, and resources that go into their making, commercial games also have the potential to be perceived as art. Even though they are not conceptually produced as art pieces but more so as entertainment, there are plenty of video games that are not necessarily labelled as art games but display artistic contents and contexts (Ploug, 2005). Games like *Journey* (2012) or *Limbo* (2010) represent critically acclaimed titles that were not primarily seen as art games but that were praised for their artistic traits.

## 2.5 Not/ non-games

The origin of the term *non-game* can be attributed to Satoru Iwata, as he defined a new form of entertainment which he called “non-game games”. As he described, these are games in which players cannot really win or even reach a tangible conclusion to the video game (Schneider, 2005). Iwata further stated that this new genre of video game emerged as a need to explore the universe of interactive entertainment, to go beyond what video games at the time were capable of offering to their players. As non-games do not truly state any clear objectives or finalities, the outcomes of every action have a reduced impact (Queiroz, 2005).

Queiroz also points out that the non-game genre can be characterised for lacking one key feature intrinsic in video game development.

The main characteristic of the non-game genre is the apparent lack of imposed ‘goals’, ‘objectives’ and ‘challenges’, very important notions for all kinds of games, digital or otherwise. The absence of such elements results in less restriction and resistance from the game to the player’s agency and freeform manipulation of the game, allowing the employment of the player’s creativity in order to produce meaningful play through self-expression. (Queiroz, 2005, p. 2)

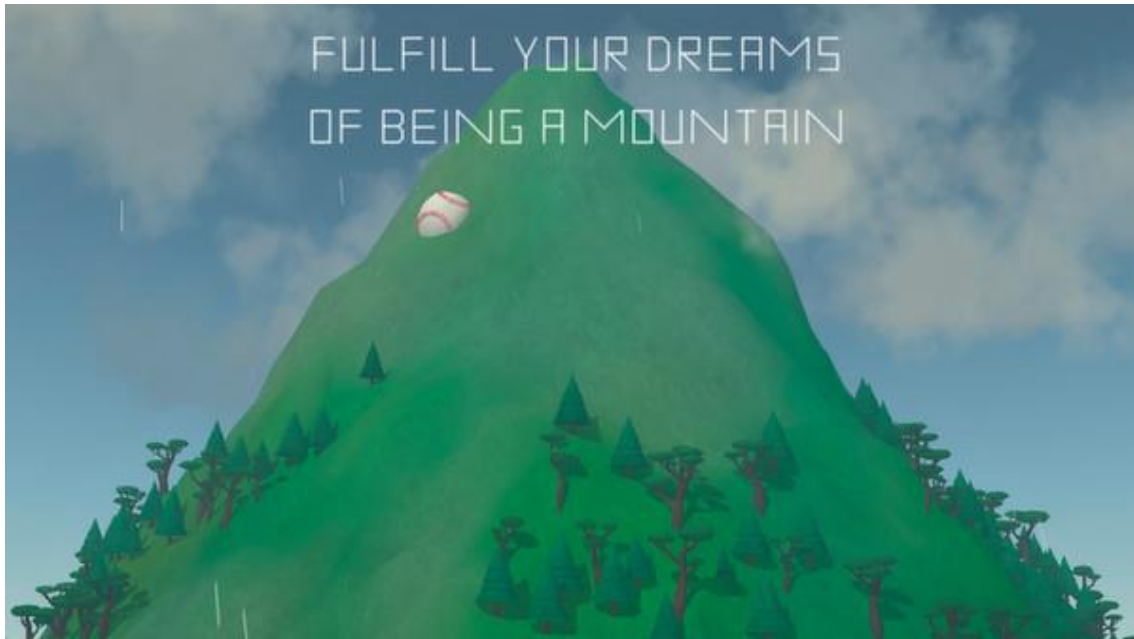
Although Iwata coined the term, non-games can be said to have existed much before that. *SimCity* (1989) was defined by its creator Will Wright as a *software toy*. While it can include objectives in some sections, it presents no final goal. More recently, Nintendo has been recognized as a platform where non-games thrive. *Big Brain Academy* (2005), or even *Nintendogs* (2005), are just some of the cases that exhibit the popularity of the genre.

The concept of notgames, developed by Michaël Samyn, takes the idea behind non-games even further, by fully rejecting the structure of video games.

The notgames thought is inspired by video games. By those fine moments in virtual experiences when we feel like we’re in another world, when we believe a synthetic character is our friend, when our bodies merge with the system and the software becomes our hands and eyes, when we find ourselves enthralled by the very thing that we are doing at that moment in complete disregard of the prize that we might be winning or losing. (Samyn, 2010)

Besides not relying on competition, goals, rewards, or the conceptions of winning or losing, notgames constitute a design challenge that encourages experimentation with older media such as games and films in order to create a new one (Samyn, 2010). Hence, video games are perceived as nothing more than software that has the potential to be turned into anything. Notgames open

the medium to new players by renouncing the limitations often found in games. Notgames Fest has been home to many of the developments in the genre, where games like *Mountain* (2014) and *The Landscape Processor* (2015) have been showcased.



**Figure 2.5:** *Mountain* (2014).

## 2.6 Critical games

To understand critical games it requires first a comprehension of what critical play is. For Mary Flanagan (2009), critical play is the act of creating or occupying play environments or activities that question aspects of everyday life. These questions can in turn be abstract when they refer to subjective topics such as winning or losing or concrete when they regard objective issues present in cultural and societal elements. Critical play aims to radically change the expectations of players and possibilities of play in games. As Flanagan also states

Criticality can provide an essential viewpoint or an analytical framework. Those using critical play as an approach might create a platform of rules by which to examine a specific issue that would be somehow relevant to the issue itself. Critical play is characterized by a careful examination of social, cultural, political, or even personal themes that function as alternates to popular play spaces. (Flanagan, 2009, p. 6)

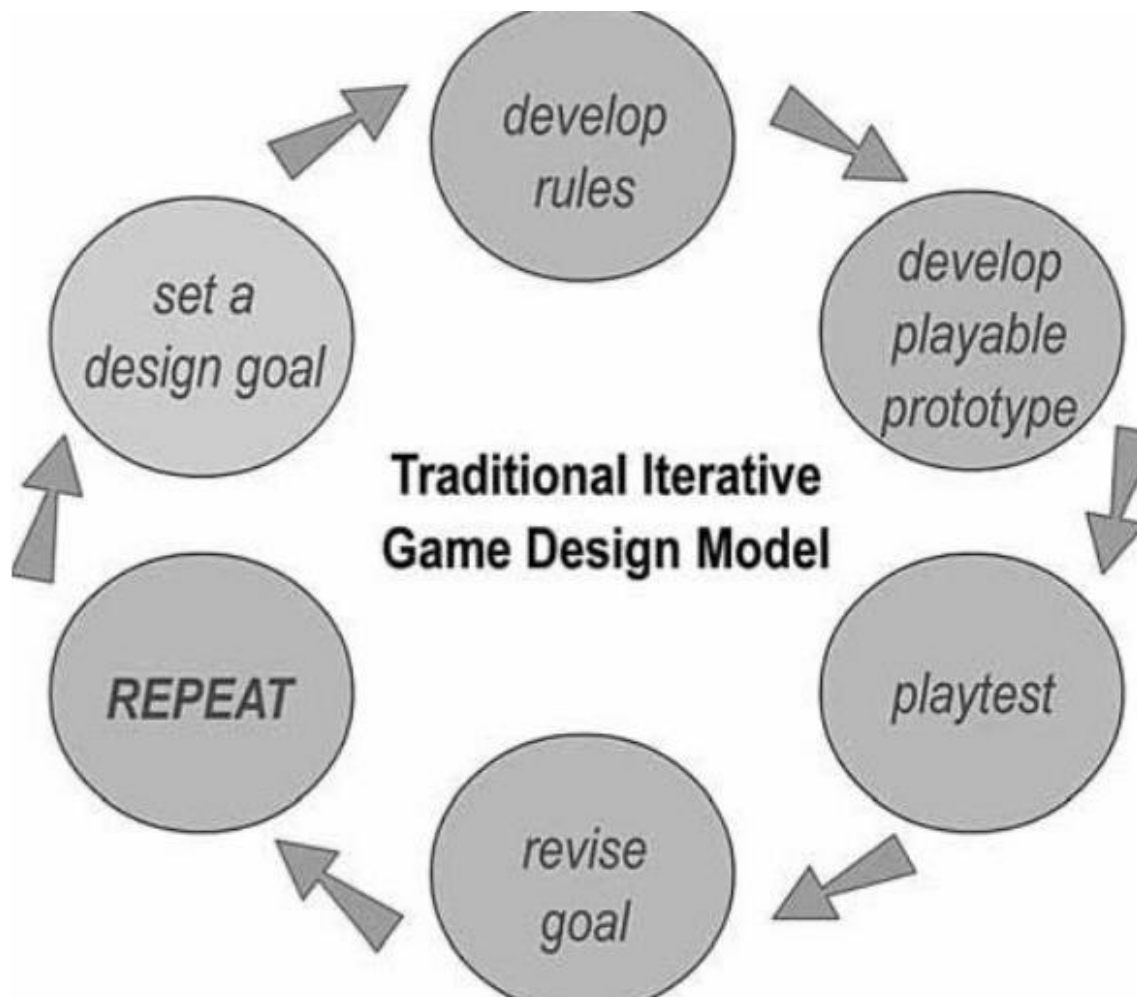
Critical games absorb critical play in order to create games that are not only capable of critique, but of critiquing its own médium as well. They defy gameplay conventions, players' expectations of games, and all that rigidly defines digital games (Grace, 2014). In critical games, value is placed more so on their ability to remind the player that the way forward might not always be through gameplay or game mechanics that are characteristic of many video games. They explore the potential trade-off that results from engaging in critical play and utilising game verbs that are not solely limited to *shooting, jumping, looting*, and so on (Grace, 2014). *Wait* (2009) does away with all of players' expectations by abolishing usual game verbs in exchange for an uncommon, yet simple one: *waiting*.

Critical games' major goal is to provide critical commentary through gameplay. They make use of procedural rhetoric to question the rhetoric inherent in common game mechanics. These games commonly originate tension between game objectives and player values by stating simple, easy goals that often require players to make critical decisions and think critically about them (Grace, 2014). This is the case with *Don't Kill the Cow* (2012). While the title clearly states the objective of the game, it is up to the player to decide whether they save the cow and starve their in-game character's wife to death, or if alternatively they save the wife by killing the cow, thus losing the game. It leaves a tension in the game space which can only come to a conclusion depending on the player's ultimate intention of either winning the game by not killing the cow, or saving their wife but losing in the process of doing so.



Figure 2.6: *Don't Kill the Cow* (2012).

Through her studies on critical play, Flanagan (2016) adds that critical play not only exposes and analyses dominant values either in games or society, but also experiments with the notion of goals by creating games with problematic, impossible, or unusual endings. This ultimately allows for familiar types of play to become unfamiliar. Likewise, the design process behind critical play differs from the iterative game design that is commonplace on most commercial games because it does not simply focus on design goals and gameplay features. Instead, it pushes beyond those boundaries by ensuring that value goals are supported by meaningful gameplay where diverse play styles may protrude.



**Figure 2.7:** “Critical Play” Game Design Model by Mary Flanagan (2009).

For Rocha (2018), critical games reside at the intersection between serious games and art games. By actively imposing a critical approach to the way the game is played, a process is originated in which contents learned inside the game are carried to the outside world, re-shaping

human behaviours and actions. *Phone Story* (2011) is a good example of how a critical game can educate individuals about the inhumane processes regarding mass production of smartphones.

Critical game design, according to Lindsay Grace (2014), stands on a framework that identifies two types of critique: social and mechanical. Social critique refers to the assessment of the society and culture in which the game exists, while mechanical critiques look introspectively at games from the perspective of developers or players of games.

## **2.7 What these kinds of games can offer to non-gamers**

It is now clear that video games are more than a gamer-exclusive platform. In their own terms, non-gamers can interact with games, despite lacking a deep understanding of their inner workings. Even then, the more commercial, complex games available do not seem to provide the same level of entertainment among gamers and non-gamers. These games usually assume that the player has had previous experience with the medium, and rely on mechanics and systems that have been already overdone by their predecessors. As such, playing becomes more about systematic in-game actions than actual creative problem-solving (Cooper, 2011).

What is more, it might be that themes or objectives commonly present in commercial video games are of little interest to some players. It comes as no surprise that most players are “only interested in mastering the game, not delving into the implications of blasting an opponent with a shotgun, or wondering why most central characters are often white males” (Cooper, 2011). But this is not the rule for every player.

Concern with these issues has led to the belief among some game developers that games need to rework their conceptual and mechanical priorities in order for the medium to achieve its true potential:

Now that there's so much willingness, technology and skill to create beautiful virtual worlds, it's disappointing how many video games cling to obstacle-based designs. As if players have to earn the privilege to explore by passing an irrelevant test. Now is the time to open up this medium, to let go of our affections and addictions, of our loyalty to childhood memories, to open up the beauty of video games for the world to see. (Samyn, 2014)

Therefore, it is hypothesized that the above-mentioned game categories, and specifically critical games in this instance, possess capabilities to not only adjust the current state of video games into a more critical and creative medium, but additionally to turn it into an entity that non-gamers can adapt to their needs. Not only do they offer alternative ways for players to engage

them, but they also strive to go beyond entertainment. This does not imply that commercial games are not capable of doing this, but independent games such as critical games purposefully diverge from contemporary video game standards in an attempt to explore new ways to experience gaming experiences (Grace, 2011).

Oftentimes, non-gamers' perceptions towards the state of video games pulls them away from the medium. Critical games do away with preconceptions, in lieu offering more open, uncompromising, and welcoming experience to all players. As such, we can theorize that there are certain key design elements in video games that might make them either more or less available to non-gamers' gaming dispositions. As independent games, critical games also portray experiences designed to act outside the status quo (Grace, 2011), thus creating more diverse motifs in games. Conclusively, we hypothesize that critical games can provide a more appealing journey to non-gamers if they are made with certain game characteristics in mind.

## PART 2: For the Non-gamers



## 3. Stage 0: Preparation

In this chapter, we go over our preparative procedures for the work that follows. In section 3.1. we introduce our hypotheses for each research question. We placed 5 hypotheses for our first question, 4 for our second question, and 4 for our third question.

These hypotheses emerge from section 3.1. and were tested through the methodology described in section 3.2. Here, we provide a brief overview of the methods used for each of the three research questions.

### 3.1 Hypotheses

To answer our first research question – *What idiosyncrasies are presently found in traditional video games? In which particularities are critical games able to tackle these idiosyncrasies?* – , we simultaneously analysed literature on the subject and carried out comparative studies between non-critical and critical games. According to the results of sections 2.1. through 2.7., we formulated the following hypotheses:

**H1:** Traditional video games assume that the player, regardless of being a gamer or non-gamer, will understand and adapt to the mechanical scheme of the game. Therefore, it presumes that gamers and non-gamers possess the same adaptive skills towards the game.

**H2:** Idiosyncrasies of traditional video games stem largely from their repetitive and immutable game mechanics and from their ineptitude to allow the player to create their own critical narrative through gameplay.

**H3:** Concepts such as winning or losing, destroying opponents or enemies, and acting without repercussion are too prevalent in video games, however critical games are able to question these characteristics offering a diversity of unprecedented concepts to video games.

**H4:** Plenty of video games often ask players to perform gratuitous actions in order to achieve unfounded objectives that are not to be questioned. As such, traditional video games commonly propose linear and unquestionable paths to their objectives. Oftentimes, these paths require players to perform skewed and nonsensical actions.

**H5:** Critical games are able to tackle the idiosyncratic behaviours of traditional games by approaching the medium through sociocultural critique and by creating new ways of gameplay unbinded from those already known.

Regarding the second research question – *In which ways do commonly used video game mechanics/ mechanisms affect the entrance of non-gamers (individuals lacking familiarity with video game mannerisms) in the medium?* –, we conducted a literature review, followed by gaming sessions with non-gamers, questionnaires and a thematic analysis. According to the results of sections 1.2. through 1.4., and sections 2.6. and 2.7., we drew the following hypotheses:

**H6:** Various video games take on adverse stances toward non-gamers by making use of game mechanics systems that require the player to have previous experience with and understandings of the game or the kind of game in question.

**H7:** Due to their unfamiliarity with video games, we hypothesize that non-gamers feel restricted by the lack of freedom in expressive and creative terms that the game allows for problem-solving scenarios.

**H8:** Many of the game verbs<sup>12</sup> used in video games are derivative of repetitive and uninteresting actions, rather than creating an appealing experience where creative gameplay and critical play are the key focus.

**H9:** Many non-gamers search for an experience with a larger focus on the sociocultural spectrum and on the implications that arise from each action taken in-game. Although some

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<sup>12</sup> The term *game verb* refers to any given action that can be executed within the video game. They can represent game mechanics, such as walking, jumping, taking, and shooting, or any type of interaction that may occur between the player and the game (Grace, 2010).

commercial games offer this type of experience, it is oftentimes intertwined with complex game mechanics that drive non-gamers away.

Lastly, to answer the third research question – *How can we adapt video games in order to turn them into usable critique tools for non-gamers?* –, we resorted to a co-design workshop with game design specialists and non-gamers. We analysed results from sections 4.3. and 5.3., and created the following hypotheses:

**H10:** Gamers’ preferences, interests and motivations have been explored to rather considerable depth. However, that which non-gamers would like to encounter in video games has not been properly explored. As such, we believe that once non-gamers’ interests and preferences are accounted for, we will be able to adapt games to their liking.

**H11:** Certain video game features and characteristics have a greater positive effect in non-gamers’ playing sessions. In detail, we believe that non-gamers will take more interest in games that heightens their ability to express themselves freely inside the game space. Likewise, games where there is less restriction regarding ways of completing objectives will prove more successful.

**H12:** In-game themes that stray from those predominantly observed in traditional games (namely violence, war, and excessive competitiveness) will have greater success with non-gamers.<sup>13</sup>

**H13:** Simpler and explicit mechanics will result in a better gaming experience for non-gamers. On the other hand, games with frustrating and contrived mechanics requiring some previous experience with video games will not be as appealing to non-gamers.

## 3.2 Methodology

Since it can be answered through literature on the subject, the *first research question*, represented by Stage 1, was explored through two main tasks:

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<sup>13</sup> This is discussed in *Critical Games: Critical Design in Independent Games* (Grace, 2014).

1. A review of literature on the topic, in which we identified conventional models and idiosyncratic elements of video game design;
2. A comparative analysis between critical and non-critical games supported by the conventions previously identified. The analysis intended to comprehend how critical games can subvert current conventional designs in their non-critical counterparts.

After identifying the main conventional models still in use in modern video games, we selected several video games, both critical and non-critical. These games were used to analyse each of the conventions found during the literature review. Accordingly, we analysed how a critical and non-critical game tackles conventions in video games. Thus, the comparative analysis provided contrasts between the ways in which both game types adopt commonly used mechanics. The results of Stage 1 were useful for the development of Stage 2, since the conventional models of modern video games could also represent the same game characteristics that affect the entrance of non-gamers into the medium.

Answering the *second research question*, represented by Stage 2, was partitioned into four tasks:

1. A review of literature regarding aspects in video games that obstruct the entrance of non-gamers in the medium;
2. Gaming sessions with non-gamers. Participants played handpicked critical and non-critical games. Here, concepts found in the literature review were empirically tested;
3. Post-gaming session questionnaires where participants were able to express their opinions and thoughts on each played game. The questionnaires were open-ended and were designed as a means to test the points studied in the literature review;
4. Thematic analysis of the questionnaires' results. This aimed to identify key-themes that affected the participants' game experience.

Because this research question is directly related to non-gamers' opinions on video games, we chose a mixed approach, where we directly analysed non-gamers' gaming experience as a means to debate the theoretical concepts identified in existing literature. Furthermore, by running a method in which we had direct contact with non-gamers, we can more accurately perceive those elements in digital games that they enjoy and those that drive them away. Having information directly reported from non-gamer audiences provided greater depth to the study. The results of

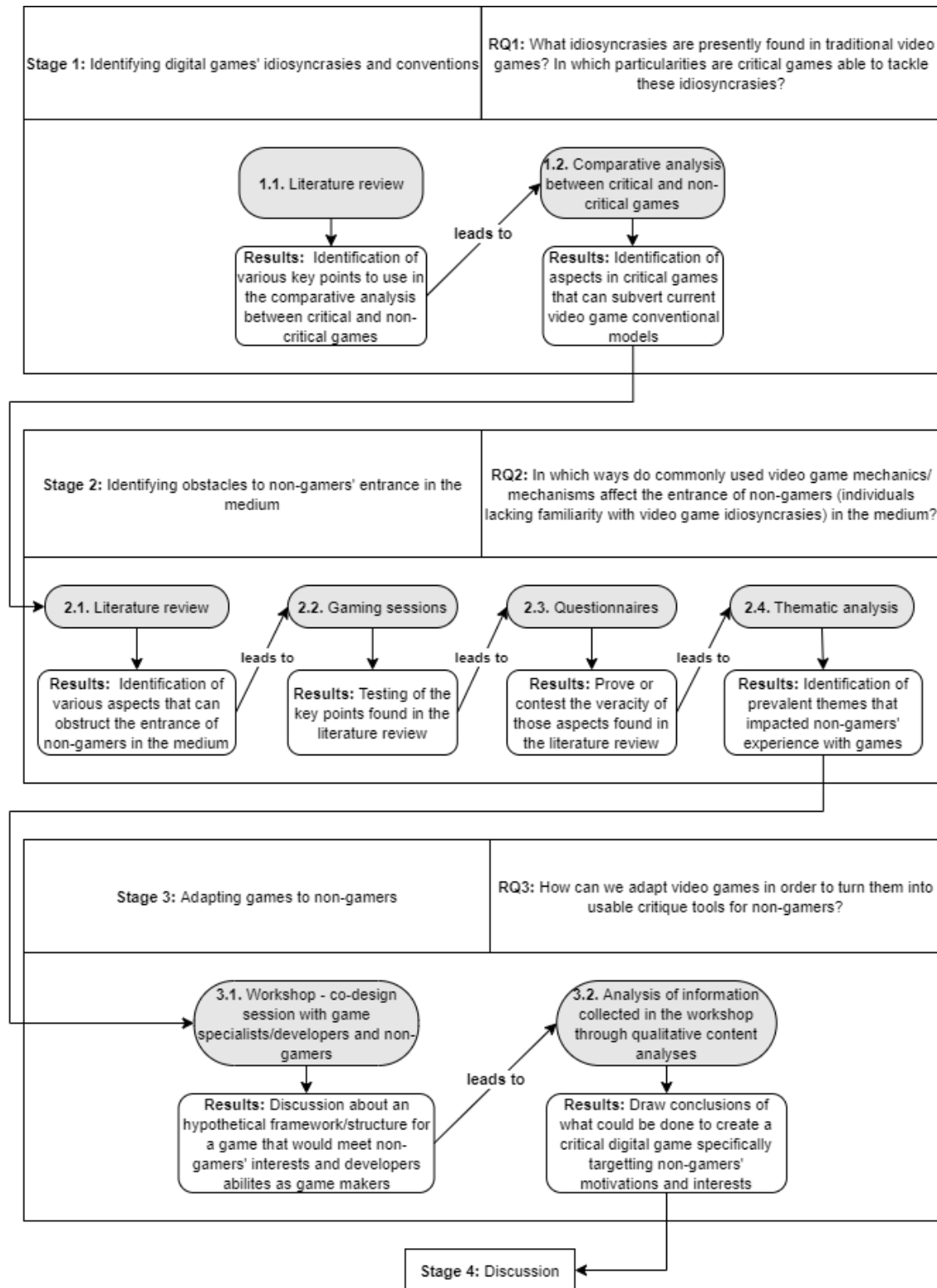
Stage 2 allowed us to pinpoint non-gamers' motivations towards games, which in turn provided a solid foundation to begin the development of Stage 3, where we focused on adapting features of critical games to non-gamers' likings.

To explore the third research question, represented by Stage 3, we delved into two tasks:

1. A co-design workshop featuring both video game design specialists/developers and non-gamers. In this workshop, we evaluated and discussed a hypothetical structure/framework for a critical game design specifically for non-gamer audiences. Furthermore, we intended to reach an equilibrium between what non-gamers would enjoy experiencing in a video game and what video specialists consider possible within a digital game;
2. The results of the workshop were then analysed and structured into a more tangible body of work. Through a qualitative content analysis, we aimed to identify several game characteristics that were prominent in the game concepts designed by the non-gamer participants. In turn, these characteristics were useful to understand how one could adapt critical games to non-gamers' needs.

The choice of methodology for the latter research question is justified by its subjectiveness and experimentality. We did not intend to propose an answer to this question as it is mostly speculative, but rather initiate a conversation about what video games can change in their conventional systems so as to be more inclusive of non-gamers. A workshop with participants from both sides of the spectrum was likely to provide interesting results and solutions to the adaptation of games to non-gamers.

Having established the results from Stage 3, we then delved into our discussion and conclusions section, represented by Stage 4. Here, we analysed and discussed the general results of all three previous Stages in accordance with our suggested hypotheses.



**Figure 3.1:** Methodology overview.

# **4. Stage 1: Identifying digital games' idiosyncrasies and conventions**

## **4.1 Introduction**

Over the years, the development of video game mechanics and gameplay systems have led to the conception of various conventions present in many current digital games. This chapter analyses some of the most prominent and noticeable idiosyncrasies that, although commonplace in current game development, are not necessarily favourable for all players.

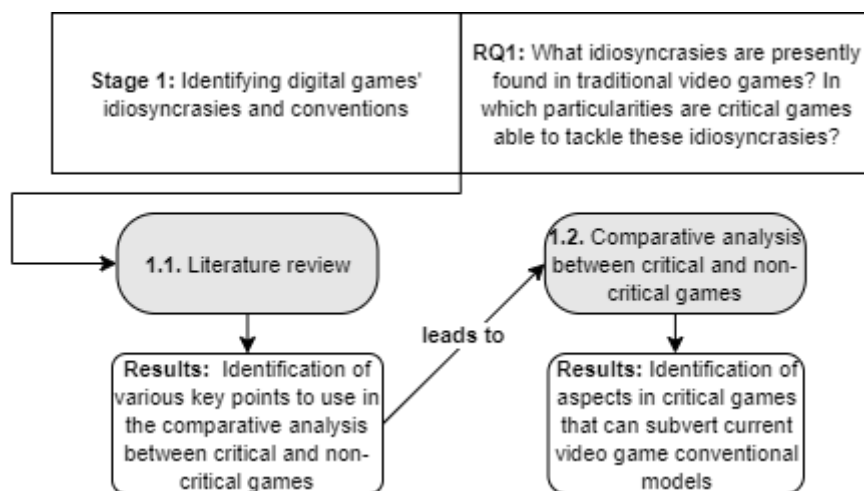
However, how a game approaches convention is derivative of its initial intent upon design. The means by which a critical game addresses convention are quite different from those used by a non-critical game. As such, critical games can be an efficient way of not only detecting these idiosyncrasies in game design, but are also likely to provide critical commentary on and innovative solutions to standardized game norms. Hence, the purpose of the following module is to debate how idiosyncratic game structure and mechanics have been affecting games and how critical games can potentially subvert them.

## **4.2 Methods and Analysis**

Upon surveying the collected literature regarding video game conventions, we have managed to gather several key points which were put into perspective through a selection of

critical and non-critical games. The conventional models we debated include: 1) Inflexible game design (Juil, 2009); 2) Immutable game verbs (Grace, 2012); 3) In-game actions with predetermined outcomes (Grace, 2010); 4) Inconsequence of in-game actions/ games not prompting players to reflect upon the game’s status quo (Cooper, 2011; Flanagan, 2010); 5) Convoluted and complicated game mechanics (Crawford, 1982; Grace, 2010). To conclude, we investigated how critical games might be able to subvert all previous points. As such, we also debated: 6) Procedural rhetoric and critical game design as alternatives to non-critical game design’s idiosyncrasies.

Multiple games of critical and non-critical character were concomitantly studied whether for their idiosyncratic characteristics, or their ability to subvert said characteristics. In sum, the analysis was conducted by the researcher, supported by literature and authors who have previously established the concepts in question, and further corroborated by a selection of digital games.



**Figure 4.1:** Methods for research question 1.

The games that were utilised for analysis were both critical and non-critical games. Non-critical games refer to any type of game that does not mainly focus on critiquing games themselves, seeking to change and subvert video game conventions, or offering critique on sociocultural problems. To guarantee diversity in the cases examined, and to ensure that no one game genre was exclusively focused on, the games selected for comparative analysis belonged to diverse genres that span across several decades. Additionally, they had to obey the following criteria:



1. Digital games: Considering the focus of this dissertation hitherto, the games selected for analysis were limited to games playable on digital gaming platforms.
2. Thematic/ Narrative plot: Selected games must include at least a dedicated section to single player mode, in which we can either identify thematic elements of its plot, or mechanics and rule-based systems that can be analysed. The aim is to evaluate the diverging frames that critical and non-critical games use to set up their gameplay loops and respective messages/critiques.
3. Single-player games: The selected games must not require two or more players in order to be played. As such, we excluded any game that was solely multiplayer. This criterion was based on the fact that this dissertation was centred on the assessment of relationships between player and game systems, and not so much on the connection that players establish through game systems.
4. Games that can currently be or have previously been played by the researcher: Selected games must be available to play, download, or access through websites. The exception is if the researcher had already played the game before its unavailability. Additionally, if the game features enough informative resources such as gameplay videos or official documentation online, it might be considered for analysis regardless of its unavailability.

### 4.3 Results

Many video games created through core and hardcore game design rules host a number of idiosyncratic characteristics that have become more and more standardized in the video game industry over time. One of those characteristics, prevalent in a wide array of modern games, relates to the invariability and inflexibility of game design when it comes to the time and effort players must dedicate to a game. As Juul mentions, “hardcore game design provides an inflexible ultimatum toward the player, asking him or her to commit much time and many resources to playing” (2009, p. 53). Furthermore, he adds that hardcore games make “inflexible and unconditional demands on the skill and commitment of a player” (2009, p. 10) There are plenty of recent video game releases that comply with what Juul states.

The role-playing game *Monster Hunter: World* (2018), for instance, not only requires even the most skilled of gamers dozens of hours to understand and master the game’s mechanics, but

often demands large periods of playtime from the player to be able to progress in the game. The game's objective has players hunting or capturing certain monsters, but doing so is more often than not a very time-consuming task. In addition, the sheer number of actions players can and must perform while navigating the game world can prove excessive for many potential players.

*The Witcher 3: Wild Hunt* (2015) is another role-playing game which many players have engaged with, but only few managed to complete it. In fact, when developer CD Projekt Red were asked about the length of *Cyberpunk 2077* (2021) they stated the following:

We do know the main story run in *Cyberpunk 2077* is slightly shorter than *The Witcher 3* because we got a lot of complaints about *Witcher 3*'s main story just being too long. Looking at the metrics, you see tremendous numbers of people played through that game really far but never made it to the end. (Brown, 2021)

Even then, there is still a tendency in the industry nowadays to make games lengthier. And although many players may enjoy those games, some are automatically excluded from these experiences for not having or wanting to dedicate several hours to properly get into them (Samyn, 2014). *Tetris* (1984), an arcade game almost four decades old, managed to create a gameplay system that any player can quickly get into and grasp the premise of the game. The game does not make any time impositions on players. Instead, it is tuned in such a way that there is always room for improvement as long as the player commits time and effort to play it. Critical games such as *Passage* (2007) or *One Chance* (2010) invert the concept of time and effort-demanding video games, offering in its place very short games that can be experienced by anyone with a few minutes to spare. Players can easily get into these games without being forced to understand a set of overcomplicated mechanics.

Inasmuch as games can be inflexible with what they demand from the player, they can be just as rigid in regard to their use of repetitive and creatively lacklustre game verbs. Although the medium is ripe with a myriad of game verbs to pick from, only a select few seem to be explored to their full potential, thus excluding the more abstract verbs from being properly looked at (Grace, 2014). As a result, game verbs have stagnated to the point where little has changed over the past decades in terms of the meaningful interactions players can perform inside the game world (Grace, 2012).

One needn't look hard to find plenty of games that fit the description. Take a long-running franchise such as *Call of Duty* for instance. Over the span of 24 games, very little has been done to ensure the game verbs provided in *Call of Duty 4: Modern Warfare* (2007) differentiate themselves from the franchise's latest instalment, *Call of Duty: Black Ops Cold War* (2020). The

gameplay loop remains essentially the same across both: run, take cover, aim, shoot, kill, reload, and so forth. These game verbs are also shared across other well-known first-person shooter franchises such as *Counter-Strike* (1999) or *Battlefield* (2002). Because little experimentation occurs in these games, ideas are rehashed to the point where they look derivative and unimaginative (Murdey, 2006).

In lieu of experimentation, what is done to make sure visible change has occurred among games (besides graphical updates and more refined game mechanics) is the addition of more game verbs which are usually not new or innovative (Grace, 2010). Crawford noted that “a very common mistake many designers make is to pile too many game features onto the game structure” because it produces an “overly intricate game, a dirty game”<sup>14</sup> (Crawford, 1982, p. 46). In other words, and as Grace (2010) mentions, a game with more verbs does not represent a better game than a game with fewer verbs.



**Figure 4.2:** Wrong way warning in *Need for Speed: Shift* (2009).

For Flanagan, “by acting through a game’s given “verbs,” players are at work with two fundamental aspects of play: limits and agency” (2009, p. 184). Indeed, game verbs hold crucial power over players’ abilities to express themselves in the game’s context. But in many cases,

<sup>14</sup> “I refer to any factors that do not comport with the central theme of the game as “dirty.”” (Crawford, 1982, p. 47)

game verbs end up being restrictive toward the player's own will. For example, trying to go the "wrong" way or reverse direction in *Need for Speed: Shift* (2009) will have the player be teleported back to the "right" course regardless of what the player's intentions are. Walk to the border of the game world in *Fallout 4* (2015) and an invisible wall followed by the message "You cannot go that way" will prompt. Try to solve a puzzle in your own terms in *Grim Fandango* (1998) and you'll be stuck in the same level until you figure out the game's self-imposed logic. In his critique of affirmative game design<sup>15</sup>, Grace explains the ways in which game verbs often act in detriment of player freedom.

If the player does not play as directed, the game typically quits, booting the player out of the experience until they choose to follow the rules. Change direction in a racing game, and you will be realigned. Get off the track and you will be brought back to the track. Choose to be a pacifist in a first person shooter, and your game won't last long. Digital games rarely afford for alternate ways to play them. Even the best sandbox games impose rules which realign play toward the order prescribed by the game. (Grace, 2010, p. 136)

*Wait* (2009) and *Mountain* (2014) are two games that strive to subvert that which usually is encompassed in the term "game verb". If *Doom* (2016) epitomizes the modern shoot 'em up genre, *Mountain* (2014) generates a whole new genre of game, a *relax 'em up* as the developer David O'Reilly best describes it. In essence, *Mountain's* (2014) game verbs are not new for the most part, but the context in which they are applied is innovative enough that they gain new meaning. Similarly, *Wait* (2009) also revolves about patience and taking a step back to appreciate the scenery. Interaction with the game world is reduced to the simplest yet most overlooked game verbs. The longer one waits in place, the more vivid and colourful the landscape becomes.

The repetitiveness and uncreativity that still besets verbs used in video games can give way to another problematic situation. When players become so accustomed to executing the same verbs over and over on several different games, actions begin to lose their agency and meaning. In other words, the player is led to believe that any given action will have a predetermined outcome based on the player's previous experience with other games. Thus, the problem is born out of "a set of presumptions that form the foundation of gameplay interactions" (Grace, 2012, p. 1185). Upton (2015) explains this scenario through the terms *horizon of action* and *horizon of intent*. The first refers to any given move or action that can be performed within the game context. The latter encompasses a set of desirable moves by the player. Upton points out that the

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<sup>15</sup> "Affirmative design is the trajectory to which most design subscribes." (Grace, 2010, p. 130)

relationship between what the player can do and what the player wishes to do is affected by the game elements and context the player is presented with.

The play value of a horizon of intent is determined not only by how it functions in isolation but also by how it relates to the other horizons that came before it. If we encounter the same horizon over and over, it rapidly loses its play value. Repeatedly making the same choice doesn't feel like choosing; we already know what characters, or expanding on the theme. If a scene merely re-traverses familiar territory, telling us things we already know, our horizon remains static and we find ourselves repeating the same interpretive moves. (Upton, 2015, pp. 240-241)

*Super Mario Bros.* (1985), a widely influential game in the platformer genre, was bred out of verbs as uncomplicated as walking, jumping, hitting, smashing, collecting, etc. Those same verbs remain mostly unchanged in modern platformers. Players familiar with platformers naturally expect that jumping onto an enemy's head will kill it, or that collecting items holds benefit for their in-game character. Although design in every other aspect of the game may change, the link between action and consequence remains ironclad.

One need only consider the conventional models of play to identify the edge of this frontier. It can be found in the prevalence of absolute assumptions in game design. Some examples include the following: collection of objects is good, elimination of obstacles is the best way to handle them, and that tools always offer benefits to us, never complicating our relationship with the challenges we face. (Grace, 2010, p.1)

Through critical game design, some platformers have been made to subvert that which the player expects from the game. *Unfair Mario* (2013) teaches us that not every stretch of soil is safe to step on, and that not every enemy is destroyable. *The Visit* (2012) confronts players for killing what one would assume to be an enemy, only to find out that said "enemy" was harmless and had a family of their own. *You Only Live Once* (2009) critiques the inconsequence of dying or failing in platformers by ensuring that once the player's character dies, the game ends and there is no coming back. Picking up items in *Levity* (1994), a game designed to criticise the mindless collecting of objects in games, will only hinder the player's moving abilities. Attempt to pick an apple from a tree in *I Wanna Be the Guy* (2007), and your character will be blown to pieces. Critique is made through game verbs to criticize game verbs.



**Figure 4.3:** *Levity* (1994).

As a result of the tired and reiterating game verb culture in video games, actions and their implications begin to lose meaning. Recalling the idea presented by Flanagan, we take away that the player and agency in the play space are closely bound by the game verbs one is permitted action through (Flanagan, 2009). Hence, when agency is lost, the feeling of consequence for one's actions inside the video game is lessened. Many games fall victim to this approach, discarding “the value of contemporary social messages, instead focusing on narratives that provide little to no incentive for players to think about what the actions they infer in actually mean” (Flanagan, 2010, p. 5).

When one boots up *Call of Duty 4: Modern Warfare*, there is usually not much thought given to the actions one is doing in-game. The player knows the objective is to shoot at those the game denotes as “enemies”. Other than that, no real reason is given besides “following orders”. The game presents a scenario where the player must kill hundreds of said “enemies” without ever giving much thought to why such actions are being carried on, or what the implications of such actions are. Players become interested in simply mastering the game, forgetting what the repercussions of such behaviours are (Cooper, 2011).

Instead of shooting every enemy in sight carefree, *Healer* (2010) proposes a different viewpoint. Coined as an *unshooter* by Lindsay Grace, the game requires players to “unshoot”

fallen soldiers in order to revive them and undo a massacre. On the other hand, *September 12<sup>th</sup>* (2010) assesses a real world situation through meaningful gameplay. The player must take down terrorists by dropping bombs on them, but doing so risks the lives of many civilians in the area. The players must question if they're destroying the terrorists, or if their own actions are those of a terrorist itself.

However, not all non-critical games fall prey to these conventional systems. Some commercial games actually manage to provide fresh, innovative experiences where a player must not assume everything has a preconceived outcome and where actions reverberate through their inescapable consequences.

*NieR: Automata* (2017) goes beyond a simple JRPG. It proposes critical thought about philosophical matters such as what it means to be human. Although much of the game is spent fighting, the game asks players to actively think about what is being shown. Instead of glorifying acts of war, *This War of Mine* (2014) portrays the suffering of those not fighting at the frontlines, but at home. Rather than playing as a soldier, we are prompted by a group of civilians trying to survive in a besieged city where resources such as food and medicine are hard to come by. Here, war is depicted through a series of thought-provoking scenarios where players must decide if the ends justify the means.

Where these games might fall flat is in their convoluted or poorly explained game mechanics and elements that end up detracting from non-gamers' experiences. For an experienced gamer, these intricate systems might not prove very difficult to grasp. But for new players, understanding the conventions of gameplay is not as straightforward (Grace, 2010). The game mechanics in *Every Day the Same Dream* (2008) or *The Stanley Parable* (2013) can be more easily attained by non-gamer audiences because they are stripped of overcomplex and oftentimes blurry gameplay systems. Their narratives and their critical impact on the player is still as effective as that of higher budget games. But the "dirt", as Crawford (1982) stated, is toned down so that a more focused and attainable experience for uninitiated players can be had.

Critical games are able to propose simpler systems than those of most commercial games through procedural rhetoric. Because games are rule-based, procedural rhetoric can represent a method of turning gameplay into the game's very own message or critique (Bogost, 2007). This is how a critical game like *Phone Story* (2011) can convert its basic yet effective gameplay into a powerful sociocultural critique tool without overwhelming inexperienced players with its inner game mechanics. As players perform simple tasks such as dragging, throwing, and sliding objects around the screen, a story is concomitantly narrated about the degrading and inhumane cycle of smartphone production, the platform this very game takes place in. *Dogness* (2018) makes

exceptional use of procedural rhetoric. Players must pick and mate certain breeds of dog in order to create the perfect dog. The gameplay masks its commentary on the absurdity of eugenics by means of an otherwise light-hearted casual game.

Procedural rhetoric is also used in *Layoff* (2009). Here, and much like a game of *Candy Crush* (2012), players must match items in the game in order to score. But in *Layoff* (2013), this mechanic is used to greater critical effect. As players match workers as a means to increase workforce efficiency, they are essentially laying them off. The verb is the same across both games, but the weight of one's actions differs heavily. Correspondingly, Frasca has concluded that "the rhetorical potential of game mechanics is so appealing partly because a subtle change in the rules can not only modify gameplay but can also lead interpretations in alternate directions" (2007, p. 197).



**Figure 4.4:** *Dogness* (2018).

On a final note, Mary Flanagan (2016) analysed how critical play can propose new ways to subvert the conventional models that have been and still are in place in video games. First and foremost, Flanagan states that critical play can expose and examine dominant values in games. This is reflected, for instance, in the approach that *Healer* (2010) takes when faced with the



dominant forces represented through *Call of Duty* and *Battlefield*'s endless murdering of game-denominated enemies.

Secondly, Flanagan states that critical play helps experimenting with the notion of goals and objectives by making games with problematic or even unattainable endings. This is empirically confirmed by *Wait*'s (2009) method of handling the player's constant search for an objective. There is no ultimate goal to the game other than waiting and appreciating the surroundings, which is something most players seldom do.

Lastly, Flanagan adds that criticality can lead to brand-new ways of play, while also making familiar types of play unfamiliar. This is precisely the case with *Super Mario Bros.* (1985) in contrast with *Levity* (1994). If the first teaches us that item collection is good (Grace, 2010), the latter turns that very same game verb into the furthest possible opposite. Thus, critical play design is made to tackle many of video game's idiosyncrasies: focusing less on how much there is to do in the game, and more on what and how it is being done.

# **5. Stage 2: Identifying obstacles and drivers to non-gamers' entrance in the medium**

## **5.1 Introduction**

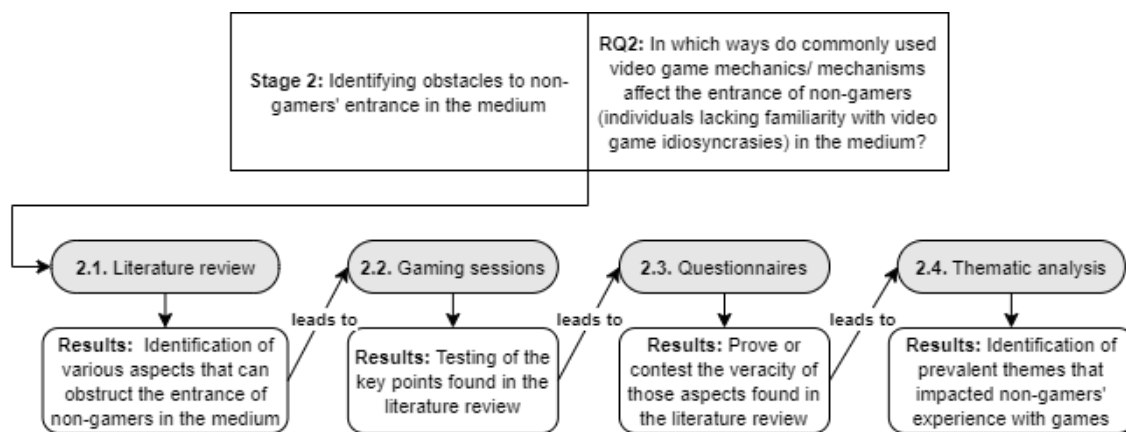
Having explored digital games' conventional systems and mechanics and how those affect the ways in which games are designed, we attempted to understand how these very conventions could act as hindrances to non-gamers who are attempting to get into gaming. Video games can be overwhelming for individuals with little to no previous experience with the medium. For experienced players, video game idiosyncrasies present no challenge because they have already assimilated them. They become invisible. For inexperienced ones however, understanding these systems is an effortful task.

If on the one hand there exist specific characteristics in games that meet the interests of non-gamers, on the other hand lie complex mechanics that pull them away from the enjoyment of the experience. With that in mind, this section is devoted to understanding what it is exactly that non-gamers find engaging, and what is more of a deterrence for the entrance in the world of gaming. If we are able to pinpoint elements in games that captivate non-gamers, comprehending how to adapt games to non-gamers' needs might be converted into a more feasible task.

## 5.2 Methods and Analysis

To answer our second research question, we reiterated the literature and results of the first research question. We believe it is possible that the conventions and idiosyncratic systems priorly analysed might also be potential factors to the obstruction of non-gamers' interest in video games. Because both questions are intrinsically connected, the results obtained through our former literature review and comparative analysis were of the utmost usefulness for the development of Stage 2. Conclusively, our forthcoming methods for this chapter took roots in concepts previously reprised in Stage 1.

Gaming sessions with non-gamers then followed. Participants played a selection of critical and non-critical games individually. The games each participant played can be viewed in Table 5.1. The purpose of these sessions was to empirically test the points established previously through literature. There were a total of 9 participants. Each participant played 4 games: 2 critical games, and 2 non-critical games. All participants played different games, meaning no games were repeated across sessions. This was done in order to ensure variety in our method and results. As such, a total of 36 games were selected, 18 for critical and non-critical each, featuring diverse genres and styles. Participants had an hour to play all games – 15 minutes per game approximately. The games were assigned to each participant randomly. After the session was over, participants were able to ask to repeat a certain game if they so desired. They could also skip a game if a plausible justification for it was provided. The hardware in which games were played was provided by the researcher, to ensure all participants experienced games in the same conditions. Sessions were presencial, in a controlled environment, where no external factors may have affected the participants' attention or performance.



**Figure 5.1:** Methods for research question 2.

Participants had to fit the following criteria to be eligible to engage in a gaming session:

1. Must have at least some understanding of digital literacy concepts, such as comprehending how to navigate a basic digital interface and interpret symbols therein represented. This does not mean the participant must know how to play a game beforehand, but rather must be able to retain some digital elements and their meaning.
2. Must be of age 18 or older, as some games are bound to include content directed at mature audiences only. Furthermore, some content can be hard to grasp by younger players. No age maximum has been established, as long as the participant is able to comply with criterion 1.
3. Participants must communicate fluently in either the Portuguese or English language;
4. Participants must have a basic comprehension of the English language (in case games do not include an option to be played in Portuguese);
5. Must be a non-gamer. Since the term is broadly defined, we perceive non-gamers as people who consider their experience with video games insufficient or undeveloped. Non-gamers lack understanding of several game terms and concepts, and are overall not connected with the medium. They seldom engage with games, and when they do, their ability to interact with them is somewhat limited.

The criteria for the selection of games that were played by participants are as follows:

1. Games must have at least one section dedicated to single player mode, as we wish to analyse the interaction between game and player without external interference of other players;
2. Games that require peripherals other than a gamepad or keyboard and mouse will be excluded as they are not in possession of the researcher. This means games that feature mimetic interfaces or virtual reality, for instance, will not be tested;
3. Selected games must be available on any of these platforms: Windows PC, PlayStation 4, or iOS;
4. Selected games must either be in the researcher's possession, or available to play via website, free download, or game streaming services;
5. Games that include overly-long title sequences or introductions will not be used due to time constraints. Since participants only have 15 minutes to play each game, we must ensure that introductory sequences do not take away a substantial chunk of the participant's actual playtime.

**Table 5.1:** Games played per participant.

Participant					Games				
Nr	Sex	Age	Occupation	Exp. with games	Order of play	Title	Year	Type	Platform
1	Female	25	Photographer	Little experience, hasn't played since 16, but knows and understands basic game controls.	1	Call of Duty: Modern Warfare 2 Campaign Remastered	2020	Non-critical	PS4
					2	Dogness	2018	Critical	PC
					3	Celeste	2018	Non-critical	PC
					4	The Republica Times	2012	Critical	PC
2	Female	25	Social Media Manager	Plays <i>Animal Crossing: New Horizons</i> (2020) once or twice a week. Used to play as a kid but rarely plays anymore.	1	Resogun	2013	Non-critical	PS4
					2	The Things We Lost In The Flood	2019	Critical	PC

					3	Battlefield 4	2013	Non-critical	PS4
					4	Democratic Socialism Simulator	2020	Critical	iOS
3	Female	18	Student	Only plays <i>Animal Crossing: New Horizons</i> (2020) on Nintendo Switch from time to time. Nothing else before that.	1	Super Meat Boy	2008	Non-critical	PS4
					2	Unfair Mario	2013	Critical	PC
					3	Dark Souls 3	2016	Non-critical	PS4
					4	Don't Kill the Cow	2013	Critical	PC
4	Female	25	Graphic Designer	Played as a child, but hasn't played since 2010/2011.	1	Street Fighter V	2016	Non-critical	PS4
					2	Every Day The Same Dream	2008	Critical	PC
					3	Resident Evil	1996	Non-critical	PS4
					4	Phone Story	2011	Critical	PC
5	Female	55	Nurse	Never played a video game before. Contact with technology limited to phone and computer for basic operations.	1	Uncharted 4: A Thief's End	2016	Non-critical	PS4
					2	Wait	2009	Critical	PC
					3	DOOM 64	1997	Non-critical	PS4
					4	The Graveyard	2008	Critical	PC
6	Male	26	Designer	Last interaction with games was 6 months ago. Played games for the social component.	1	This War Of Mine: The Little Ones	2014	Non-critical	PS4
					2	You Have to Burn the Rope	2008	Critical	PC
					3	Don't Starve	2013	Non-critical	PC
					4	The Stanley Parable	2011	Critical	PC
7	Female	52	Civil Servant (Technical Assistant)	Never played a game before.	1	Downwell	2015	Non-critical	PS4
					2	Baba Is You	2019	Critical	PC
					3	Thumper	2016	Non-critical	PS4
					4	Passage	2007	Critical	PC

8	Female	24	Operator in training	Plays <i>The Sims 4</i> (2014), but very rarely. Would rather watch videos of other people playing than playing them herself.	1	SUPERHOT	2016	Non-critical	PS4
					2	Syobon Action	2007	Critical	PC
					3	ONRUSH	2018	Non-critical	PS4
					4	The Best Amendment	2013	Critical	PC
9	Male	57	Automobile Mechanic	Never played a game before.	1	The Binding of Isaac: Rebirth	2014	Non-critical	PS4
					2	Faith Fighter	2008	Critical	PC
					3	DiRT 4	2017	Non-critical	PS4
					4	Escape	2010	Critical	PC

After each gaming session, participants partook in an oral questionnaire. This questionnaire explored how the player felt toward each game, which components and aspects of each game were appreciated and which were frustrating or uninteresting. The questionnaire tested the veracity of our hypotheses, as well as those identified through the literature reviewed. All questionnaires were recorded in audio format for posterior consulting by the researcher, for transcription purposes, and if needed for citation purposes on this dissertation. Participants' identities remained confidential, however some personal traits were provided for the sake of personal context and gaming background. Each questionnaire had an estimated duration of 20 minutes, and succeeded immediately after each gaming session.

The questionnaire held a total of 6 questions for each participant. Because all participants were Portuguese, the questionnaire was translated to their native language to facilitate matters (Appendix A1). Here, the English version was instead provided. Questions were designed to inquire players about their personal experience and thoughts on games played. We aimed to comprehend game conventions that prevented non-gamers from delving further in video games, and aspects that piqued their interest to play more. Thus, we devised the following questions:

1. What are your thoughts on each game you played?
2. What have you enjoyed most in the games you played?
3. What did you find the least interesting or unpleasant in the games you played?

4. Have you felt any particular frustrations or nuisances in the games you played? If so, please describe them to the best of your ability.
5. Would you like to potentially repeat any of the games (or game types) you played here in the future? If so, what are your reasons to do so?
6. In which game or moment in that game have you felt more motivated to keep playing?

Lastly, we analysed all results obtained from the questionnaires through a thematic analysis. By means of a deductive, latent approach, we aimed to generate and define key-themes emerging from participants' answers. Due to the open-endedness of the questions proposed, the interpretation of themes was subdued to the researcher's understanding of their meaning, yet always based on what existing literature had already suggested. With this task, we expected to identify major factors that had notable impact on participants' gaming experiences.

### 5.3 Results: Obstacles

As aforementioned, the conventional models found in current game design all too commonly may also constitute some of the reasons why non-gamers are not finding their way into gaming. In other words, we believe the literature review conducted to answer our first research question can also be a starting point for our developments on this one. Hence, typical video game behaviour such as repetitive game verbs and gameplay mechanics, inflexible game design, and overcomplicated systems, can possibly be the root of the issue. To test this hypothesis, we will now present and analyse the results of our 9 gaming sessions and respective questionnaires.

Participant 1 enjoyed the gaming experience overall, but felt frustrated with her inability to adapt to the controls and mechanics on games such as *Celeste* (2018) and *Call of Duty: Modern Warfare Campaign Remastered* (2020). On the latter, the participant expressed that while the game was fun, she disliked how fast-paced it was, as well as the game's unrealistic depiction of war. *The Republica Times* (2012) was her favourite due to its sense of agency and challenge.

Participant 2 also found it difficult to adapt to the controls in *Battlefield 4* (2013), despite finding the game quite enjoyable. The repetitiveness of the gameplay loop in *Resogun* (2013) and *The Things We Lost In The Flood* (2019) left her unmotivated to continue playing those games in



the future. Additionally, she felt disoriented by the chaotic sections in *Battlefield 4* (2013) and the visual clutter in *Resogun* (2013).

Participant 3 felt highly frustrated by the game mechanics in *Unfair Mario* (2013). Because falling in a trap made her restart the level, she quickly became frustrated with the amount of repetition. Interestingly, she found that *Dark Souls 3* (2016) was not frustrating despite her disorientation regarding where to go, as well as her inability to beat the stage boss, to which she died several times. Unlike *Super Meat Boy* (2008) and *Unfair Mario* (2013), she did not find the game to be irritating. The combination of monotonous gameplay and pixelated graphics in *Don't Kill the Cow* (2012) were unpleasant for her.

Participant 4 struggled with the control scheme in *Resident Evil* (1996) and *Street Fighter V* (2016). Despite enjoying the latter, she mentioned she would not play it for long as the gameplay was always the same. *Every Day The Same Dream* (2008) and *Phone Story* (2011) were praised for their plot and critiquing ability, but held back for having no actual replay value after the first playthrough.

Participant 5 felt stressed out with the game mechanics in *Wait* (2009), as the game did not allow her to play as she intended. *DOOM 64* (1997) was criticized by the participant for its visual repetitiveness and frustrating controls. She enjoyed *Uncharted 4: A Thief's End* (2016) for its more diverse and appealing visuals, interesting plot, and ability to reflect without any time impositions. Participant 6 enjoyed all the games she played for their exploration components. The exception was *You Have to Burn the Rope* (2008), which was short and had no other reason to be replayed. Some frustrations with controls rose in *This War Of Mine: The Little Ones* (2014).

Participant 7 felt her reflexes were not fast enough for *Downwell* (2015). On *Thumper* (2016) however, despite the game being very fast-paced, she enjoyed it for being challenging but not to a point of frustration. She did not like *Baba Is You* (2019) and *Passage* (2007) very much for their monotonousness and pixelated styles. Although she thought the concept was good, it was mentioned that the colour palette in those games was not very attractive and made it hard to understand what was happening in the game.

Participant 8 was very frustrated with the difficulty of *SUPERHOT* (2016) and repetitiveness of *Syobon Action* (2007). The tricky game mechanics on the latter made the participant lose many times, eventually frustrating her with the amount of times she had to repeat the same level.

Lastly, participant 9 was not enthusiastic about violent games, as was the case with *Faith Fighter* (2008). Although he liked *DiRT 4* for its similarities to his real life profession, the cars were way too difficult to control. Despite finding *The Binding of Isaac: Rebirth* (2014) to be fun,

and enjoying the premise of *Escape* (2010), he commented that he would not like to play any games in the future due to lack of interest.

Even though our non-gamer sample was not of great scale, it was enough to devise Table 5.2, which portrays several recurring themes across all gaming sessions.

**Table 5.2:** Thematic analysis of participants' disliked characteristics in the games played.

Codes	Theme
<ul style="list-style-type: none"> <li>• Gameplay loop</li> <li>• Controls and in-game actions</li> <li>• Having to repeat levels everytime they lose</li> <li>• Sameness of the visuals</li> <li>• Lack of replay value</li> </ul>	<ul style="list-style-type: none"> <li>• Repetitiveness</li> </ul>
<ul style="list-style-type: none"> <li>• Confusing controls</li> <li>• Confusing game mechanics</li> <li>• Too difficult</li> <li>• Not enjoying the gameplay loop</li> <li>• Monotonous gameplay</li> <li>• Lack of time to learn the game properly / Lack of tutorials</li> <li>• Lack of control / Lack of player freedom</li> </ul>	<ul style="list-style-type: none"> <li>• Mismatch between game affordances and player expectations and abilities</li> </ul>
<ul style="list-style-type: none"> <li>• Game's fast-paced nature</li> <li>• Slow character movement</li> <li>• Requiring fast reflexes</li> <li>• Game is too slow-paced</li> </ul>	<ul style="list-style-type: none"> <li>• Polarising game pacing</li> </ul>

- 
- Fallacious or unreasonable depictions of reality
  - Nonsensical or stupid
  - Good premise, poor execution
  - Does not understand the premise
  - Spurious or nonsensical premise
- 
- Aversion to pixelated visuals
  - Too much going on
  - Too much visual clutter
  - Unpleasant to look at or uneasy on the eyes
  - Unattractive colour palette
  - Cluttered or indiscernible visuals
- 

### 5.3.1 Repetitiveness

The theme of *repetitiveness* was one present through almost all of the participants' sessions. Whether because of the unchanging gameplay loop, the repetitive controls, or the recurring nature of the game verbs used in the game, participants usually felt unmotivated to keep playing games with little variety in them. Participant 1 mentioned that although she enjoyed *Celeste* (2018) at first, she quickly began to dislike it as she realised “it was very repetitive controls-wise”<sup>16</sup> (Appendix A2, Participant 1). She added that her frustration stemmed from the sameness of the gameplay, “It’s always just jumping, climbing, walking forth, and I eventually got frustrated for having to repeat the same action over and over”<sup>17</sup> (Appendix A2, Participant 1). Another participant also felt that repetitiveness hindered her potential enjoyment of the game *The Things We Lost In The Flood* (2019), because “[when she died and had to restart the level], the scenarios changed but the dynamic of the game stayed the same”<sup>18</sup> (Appendix A2, Participant 2).

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<sup>16</sup> A.T.: “O Celeste eu comecei por gostar dele mas depois fiquei frustrada com os comandos e porque era um jogo muito repetitivo a nível dos comandos (...)” (Appendix A2, Participant 1)

<sup>17</sup> A.T.: “É sempre saltar, subir, andar para a frente e acabei por ficar frustrada por estar sempre a repetir a mesma ação.” (Appendix A2, Participant 1)

<sup>18</sup> A.T.: “Por exemplo, no segundo quando morres tens de voltar ao início e repetir os passos. Claro que eles mudam o cenário, mas não há uma mudança de dinâmica.” (Appendix A2, Participant 2)

Having to repeat levels over and over was also heavily frowned upon. Participants began to feel frustrated since they were progressing very slowly in the game. When asked about why she had not enjoyed *Unfair Mario* (2013), participant 3 replied it was because she “had to repeat everything every time [she] fell into a trap”<sup>19</sup> (Appendix A2, Participant 3). Similarly, participant 9 also got frustrated with dying constantly and never being able to complete the level.

Although not as prevalent, it is also worth noting that the sameness of the visuals was a negative factor for some participants. For instance, participant 5 disliked how *DOOM 64* (1997) always used “the same colours, the same structures, the same shades”<sup>20</sup> (Appendix A2, Participant 5). The lack of replayability in many critical games was also a common pejorative factor. Even when participants enjoyed a critical game, the fact that it had no replay value was often noted by participants. Participant 4 was very keen on *Every Day The Same Dream* (2008) and *Phone Story* (2011) , but she would not play them again because “they were just that”<sup>21</sup> (Appendix A2, Participant 4), meaning there was no replayability, nothing else to experience after the game was concluded. The game prompted a time for reflection, but after that the experience was over and done.

### 5.3.2 Mismatch between game affordances and player expectations and abilities

Another prevalent theme revolved around players’ expectations and abilities being in disconnect with the game’s affordances. Many participants were frustrated with the controls and mechanics in the more complex games, either because they had difficulty in understanding “what each button did and when they should press them”<sup>22</sup> (Appendix A2, Participant 2), because they were “super difficult even on easy mode”<sup>23</sup> (Appendix A2, Participant 4), or because “the controls were just too hard”<sup>24</sup> (Appendix A2, Participant 9). Yet, when games were too slow or monotonous, they were also described as frustrating or uninteresting. For instance, on the critical game *Passage* (2007), participant 7 thought the game was good for its educational and critical

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<sup>19</sup> A.T.: “No [Unfair] Mario, foi ter de estar sempre a repetir tudo por causa das armadilhas.” (Appendix A2, Participant 3)

<sup>20</sup> A.T.: “Sempre as mesmas cores, as mesmas estruturas, os mesmos tons... Não gostei. Sempre a mesma coisa.” (Appendix A2, Participant 5)

<sup>21</sup> A.T.: “Depois, estes dois jogos críticos [Every Day The Same Dream; Phone Story], acho que não voltaria a jogar porque o jogo é só aquilo...” (Appendix A2, Participant 4)

<sup>22</sup> A.T.: “(...) acho que a minha maior dificuldade e frustração é conseguir perceber o que cada botão faz e acioná-los no momento certo em vez de começar a fazer as coisas à sorte por estar stressada.” (Appendix A2, Participant 2)

<sup>23</sup> A.T.: “(...) mas achei super difícil mesmo no modo fácil.” (Appendix A2, Participant 4)

<sup>24</sup> A.T.: “A forma de conduzir é mesmo difícil.” (Appendix A2, Participant 9)

purpose, however it was still “a bit monotonous”<sup>25</sup> (Appendix A2, Participant 7). The participant was hoping for an experience more in line with *Thumper*’s (2016) flashiness and was disappointed when the gameplay in *Passage* (2007) revolved around walking. While playing *The Things We Lost In The Flood* (2019), participant 2 pointed that she “wasn’t able to jump from one boat to another”<sup>26</sup>, which negatively impacted the dynamic of the game. In contrast, she was pleasantly surprised when she found out that she could move in multiple directions in *Resogun* (2013), instead of just being able to move back and forth. “When I realised I could move in various directions, it gave me more motivation to play because I had more possibilities”<sup>27</sup> (Appendix A2, Participant 2). In general terms, participants felt dissatisfied when their own skills and expectations did not match those that the games allowed or required them to do. Thus, participants felt detached from those games they struggled to adapt to.

### 5.3.3 Polarising game pacing

The pacing of certain games was also disliked by some participants. Participants 1, 5, and 7, reported that some games stressed them out because they were too fast-paced or required them to act quicker than their reflexes allowed. This was the case with *Battlefield 4* (2013), played by participant 2. Although she found the game to be fun, the game’s high intensity, juxtaposed by its complex controls, led her to “start doing random things due to being stressed out”<sup>28</sup> (Appendix A2, Participant 2). Likewise, participant 7 felt that *Downwell*’s (2015) intense and unrelenting pace was too much for her hands and eyes to keep up with. Interestingly enough, participant 5 reported the opposite from previous participants, as she disliked when games did not allow her to go faster than she wanted to. For instance, she was annoyed at *DOOM 64* (1997) and the playable character’s slow movement, because she “wanted to move faster”<sup>29</sup> but the game wouldn’t allow it (Appendix A2, Participant 5). *Wait* (2009) had a similar effect on her:

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<sup>25</sup> A.T.: “Ensina-nos alguma coisa... Mas é um bocadinho monótono e as cores não cativam.” (Appendix A2, Participant 7)

<sup>26</sup> A.T.: “(...) não há uma mudança de dinâmica. Tu não podes saltar do teu barco e ir para o outro.” (Appendix A2, Participant 2)

<sup>27</sup> A.T.: “(...) quando comecei a perceber que podia andar em várias direções deu-me mais vontade para jogar porque percebi que tinha mais possibilidades.” (Appendix A2, Participant 2)

<sup>28</sup> A.T.: “Por isso acho que a minha maior dificuldade e frustração é conseguir perceber o que cada botão faz e acioná-los no momento certo em vez de começar a fazer as coisas à sorte por estar stressada.” (Appendix A2, Participant 2)

<sup>29</sup> A.T.: “Porque não me conseguia movimentar rapidamente.” (Appendix A2, Participant 5)

It [*Wait*] unnerved me. As a video game I didn't enjoy it, I thought it was unnerving. It stressed me out... Whenever I tried to go faster to see what would happen, the image disappeared.<sup>30</sup> (Appendix A2, Participant 5)

Game pacing portrayed nuanced views from our participants. Although games featuring frenetic, overly fast-paced gameplay were generally disliked for the participants' inability to keep up with them, slower-paced games were also frowned upon. A balanced game pacing, without extremes, was keener on participants' likings.

### 5.3.4 Spurious or nonsensical premise

Although not as prevalent, another theme explored regards the plot or premise of the game being spurious or not making sense. Participant 1 felt that the fallacious depictions of war portrayed in *Call of Duty: Modern Warfare 2 Campaign Remastered* (2020) made it hard for her to take the game seriously. On the other hand, participants 5 and 8 struggled to comprehend the premise in *Wait* (2009) and *The Best Amendment* (2013), respectively. This was a major detractor for their enjoyment in the experience. On *The Things We Lost In The Flood* (2019), participant 2 mentioned that while the game had potential, the premise was poorly executed. The premise of the game was that as she travelled along a submersed environment, she would find messages in bottles, left by other players as a means of helping her with her journey. As such, players could help each other without really having any direct interaction. However, as she picked up bottles with nonsensical messages from other players, she began to lose interest because they were of no real value or use for her own experience. Interestingly, participant 2 ended up leaving nonsensical messages as well due to her frustration. Because there was no real filter to what players could write, the game's premise was ruined as messages that were supposed to help her navigate through the game world left her in a confused state. Overall, participants 1, 2, 5, and 9, felt that games with similarities with real life matters or their current life situations were able to connect with them more meaningfully. However, their enjoyment was still hindered by other factors, such as difficulty, slowness of the gameplay, or unrealistic depictions of reality.

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<sup>30</sup> A.T.: "Ele enerva-me. Como jogo não gostei, achei enervante. Provocou-me stress... Queria andar rápido, queria ver o que é que acontecia e apagava a imagem. Não me estava a deixar fazer o que eu queria." (Appendix A2, Participant 5)

### 5.3.5 Cluttered or indiscernible visuals

Lastly, visuals turned out to be very unpleasant in some games, especially in critical games. Either because they were confusing, unpleasant, or hard to make sense of, pixelated graphics negatively impacted the experience of participants 3, 5, and 7. Participant 7 made several remarks about *Baba Is You* and *Passage*'s visuals. She expressed her loss of interest in both games due to having to “look really hard to be able to make sense of things” and also “having to pay close attention, otherwise things would go by and [she] wouldn't notice”<sup>31</sup> (Appendix A2, Participant 7). On the same line of thought, participant 3 also disliked *Don't Kill the Cow*'s (2012) pixelated and indiscernible visuals because “they confused [her] and made [her] eyes hurt”<sup>32</sup> (Appendix A2, Participant 3). Even then, other non-critical games also took some criticism when they were too visually cluttered, as was the case with participant 2 on *Resogun* (2013). “It wasn't necessarily getting more interesting. It just became more and more impossible to orient myself amidst all the confusion”<sup>33</sup> (Appendix A2, Participant 2). Overall, well-defined, easily-perceptible visuals with attractive colours were more in line with what participants enjoyed. Concomitantly, games that had too much happening on-screen rendered participants' experiences more confusing as they were susceptible to lose focus on their objectives.

## 5.4 Results: Drivers

If on the one hand our questionnaires allowed us to learn about participants' disliked characteristics in video games, on the other it also gave us some insight on what they found enjoyable and in accordance with their motivations, preferences, and interests. As such, we developed Table 5.3, where we compiled the most pervasive themes among participants.

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<sup>31</sup> A.T.: “Mas se calhar a gente a olhar para ali perde a vontade porque tens de olhar muito para conseguir perceber. Se não estiveres muito atento as coisas passam e nem consegues apanhá-las.” (Appendix A2, Participant 2)

<sup>32</sup> A.T.: “Não gostei das imagens. As imagens metem-me confusão e fazem doer os olhos.” (Appendix A2, Participant 3)

<sup>33</sup> A.T.: “Não estava propriamente a ficar mais interessante. Ficava só mais impossível de me orientar no meio da confusão.” (Appendix A2, Participant 2)

**Table 5.3:** Thematic analysis of participants’ liked characteristics in the games played.

<b>Codes</b>	<b>Themes</b>
<ul style="list-style-type: none"> <li>• Variety of game verbs or in-game actions</li> <li>• With replay value</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified gameplay loop</li> </ul>
<ul style="list-style-type: none"> <li>• Freedom of possibilities</li> <li>• Agency in the narrative</li> </ul>	<ul style="list-style-type: none"> <li>• Empowering gameplay</li> </ul>
<ul style="list-style-type: none"> <li>• Games with emphasis on story/ narrative</li> <li>• Similarities to real life matters</li> <li>• Drawing comparison to current life situations</li> <li>• Prompting critical reflection</li> </ul>	<ul style="list-style-type: none"> <li>• Thought-provoking narrative/ plot</li> </ul>
<ul style="list-style-type: none"> <li>• Fun, even if there is difficulty</li> <li>• Not tiresome</li> <li>• Challenging, but not too challenging</li> <li>• Faster-paced, but not exceedingly fast</li> <li>• Not very demanding for long periods of time</li> <li>• Inclusion of tutorials</li> <li>• Forgiving gameplay</li> </ul>	<ul style="list-style-type: none"> <li>• Challenging, but not frustrating</li> </ul>
<ul style="list-style-type: none"> <li>• Enjoyable graphics</li> <li>• Movie-like features or sequences</li> </ul>	<ul style="list-style-type: none"> <li>• Readable/ decipherable visuals</li> </ul>

### 5.4.1 Diversified gameplay loop

The instances where participants reported their gaming experiences to be the most on par with their interestings revolved around a diverse and non-repetitive gameplay loop. Participant 1 mentioned she enjoyed *The Republica Times* (2012) because “the news were always changing



somehow”<sup>34</sup> (Appendix A2, Participant 1). Participant 5 found *Uncharted 4: A Thief's End* (2016) to be the most compelling because she “had to complete the stages in the game but something new and different was always happening, not just shooting monsters and picking up weapons and killing enemies”<sup>35</sup> (Appendix A2, Participant 5). Likewise, a positive aspect found in the games regarded their replay value. As one of the participants stated, while playing *Democratic Socialism Simulator* (2020), the fact that the game posed so many varied choices motivated her to keep playing.

And on the last one [*Democratic Socialism Simulator*], there were so many choices that I felt like going home and keep on playing to see what would happen in the elections.<sup>36</sup> (Appendix A2, Participant 2).

As such, a diverse gameplay loop was a major driver for participants’ enjoyment in the experience. When participants felt there were multiple ways to go about the gameplay loop, they were more likely to keep playing and potentially replay the game to look for different outcomes.

#### 5.4.2 Empowering gameplay

Another important factor for participants was the ability to feel empowered by the game, whether through freedom to do whatever they desired within the game’s world, or by positioning players as crucial and central agents in the game’s narrative. One such occurrence of player agency in the narrative happened while participant 1 was playing *The Republica Times* (2012). When asked about what made her enjoy the game, she stated:

I think it was because the news kept changing somehow, and then the story’s build-up too. They kept saying my family was in danger or that they were safe. That’s what made me want to play, not just for me and my family, but because I was effectively controlling a newspaper that manipulated people’s views. Overall, I really felt I was working at a newspaper and as such I wanted to do as good as I could to complete the objective.<sup>37</sup> (Appendix A2, Participant 1)

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<sup>34</sup> A.T.: “(...) eu acho que era as notícias irem mudando de alguma forma.” (Appendix A2, Participant 1)

<sup>35</sup> A.T.: “(...) tinha de conseguir passar as etapas mas ia sempre acontecendo alguma coisa nova e diferente. Não era só matar monstros ou apanhar armas e matar inimigos.” (Appendix A2, Participant 5)

<sup>36</sup> A.T.: “E no último [*Democratic Socialism Simulator*], haviam tantas hipóteses que me apetece ir para casa e continuar a jogar até ver o que vai acontecer com as eleições.” (Appendix A2, Participant 2)

<sup>37</sup> A.T.: “Eu acho que era as notícias irem mudando de alguma forma, e depois todo o build-up da história e de dizerem que a minha família estava em perigo e agora estava a salvo. Isso fazia-me querer jogar não só por ti e pela tua

Her report also comes in accordance with the fact that participants generally enjoyed when games presented players with freedom in the gameplay loop, meaning players felt they had power over what happened. For example, participant 8's enjoyment of *ONRUSH* (2018) stemmed from being able to "do whatever [she] wanted"<sup>38</sup> within the context of a racing game (Appendix A2, Participant 8). Participants generally appreciated when the game made them feel like they had actual power over the course of the game.

### 5.4.3 Thought-provoking narrative/ plot

Participants expressed appreciation for games with similarities to real life or that participants could personally relate to. One participant found that *The Graveyard's* (2008) theme allowed her to connect to the game more easily, as it "identified with [her] age and life circumstances"<sup>39</sup> (Appendix A2, Participant 5). Likewise, participant 9 enjoyed the concept of *DiRT 4* (2017) because, as an automobile mechanic, interacting with cars was part of his quotidian (Appendix A2, Participant 9). There were several instances when participants commented on a game's ability to prompt critical reflection. Although she found it to be monotonous, participant 7 appreciated *Passage's* (2007) critical message because it taught players something important about the brevity of life (Appendix A2, Participant 7). Participant 5 would have liked to play more games like *The Graveyard* (2008), as it contained scenarios designed for introspective reflection (Appendix A2, Participant 5). On the same line of thought, participant 4 praised the critical games she played for their capacity to make her reflect on her actions.

The games I liked the most were actually those two games for critique [*Every Day The Same Dream*; *Phone Story*]. What I liked most about them was their emotional component. The experience as a whole, and not simply if it was easy or difficult. It was the fact that it made me question things, understand them and see myself in them.<sup>40</sup> (Appendix A2, Participant 4).

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família mas por conseguires efetivamente lançar um jornal que conseguia manipular as pessoas... No fundo eu senti que estava mesmo num jornal e por isso queria fazer o meu melhor trabalho e conseguir mesmo concluir o meu objetivo." (Appendix A2, Participant 1)

<sup>38</sup> A.T.: "Porque naquele você pode fazer o que quiser. Você só sai correndo ali e aí apertado os botões e estou sempre ganhando." (Appendix A2, Participant 8)

<sup>39</sup> A.T.: "Identifica-se mais com a minha idade e circunstâncias de vida." (Appendix A2, Participant 5)

<sup>40</sup> A.T.: "Os que eu mais gostei até foram esses dois mais de crítica [*Every Day The Same Dream*; *Phone Story*]. O que gostei mais foi mesmo a parte emocional. Foi toda a experiência do jogo e não se era fácil ou difícil. Era fazer-me questionar as coisas. Perceber e rever-me naquilo." (Appendix A2, Participant 4)

In general terms, participants were keen on games that devised narratives or plot points they could reflect upon. By having stories they could follow along, participants felt more of a connection and motivation to keep going through the game.

#### 5.4.4 Story immersion<sup>41</sup>

Participants also felt motivated to keep playing when games emphasised story and narrative elements. All participants except 3, 8, and 9 showed some form of admiration for games that had some sort of story or plot they could immerse themselves in. Participant 4 mentioned that her motivation to keep playing *Resident Evil* (1996) stemmed from her wanting to “finish the game and uncover the ending, as it was a game more focused on story and not just gameplay”<sup>42</sup> (Appendix A2, Participant 4). Participant 5 was pleased with *Uncharted 4: A Thief’s End* (2016) because the story of the game “ended up seducing [her] because [she] wanted to know what came next”<sup>43</sup> (Appendix A2, Participant 5). Overall, she felt the objective, in conjunction with the story, is what made the game enjoyable for her. Participant 6 stated he would like to keep playing *This War Of Mine: The Little Ones* (2014), but only to see to which extent the story would progress (Appendix A2, Participant 6). Even participant 9, who expressed somewhat of a distaste for video games, mentioned his enjoyment of the concept of *DiRT 4* (2017) because, as an automobile mechanic, he found cars to be one of his main interests (Appendix A2, Participant 9). Thus, he was able to immerse himself in the game premise on a more personal level that other games may not have offered.

#### 5.4.5 Challenging, but not frustrating

Most participants mentioned some sort of interest in games that challenged their capabilities, but that were not challenging to the point of frustration. On *Battlefield 4* (2013), participant 2 expressed that even though the game was difficult, it was not at a point where frustration would

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<sup>41</sup> The term Story Immersion has been borrowed from Yee’s gamer motivation model (2015). It is used to describe gamers that are motivated by engaging, depthful stories and well-developed characters. Similarly, Fullerton uses the term The Storyteller to describe players who love “to create or live in worlds of fantasy and imagination” (2014, p.104)

<sup>42</sup> A.T.: “Mas o Resident Evil eu tinha motivação para continuar a jogar para desvendar e terminar o jogo, porque é um jogo mais de história. Não é só estares ali a jogar.” (Appendix A2, Participant 4)

<sup>43</sup> A.T.: “Gostei porque tinha ali uma história. (...) e acabou por me seduzir mais porque queria saber o que vinha a seguir. É o objetivo aliado à história.” (Appendix A2, Participant 5)

make her give up on the experience. Instead, she wanted to get better at the game (Appendix A2, Participant 2). In spite of the fact that she did not manage to get very far in the game without losing, participant 7 still thought *Downwell* (2015) was fun, due to the faster pace of the game. Similarly, she also enjoyed *Thumper* (2016) because she “didn’t like slower paced games, and this one [*Thumper*] tested her reflexes”<sup>44</sup> (Appendix A2, Participant 7). Participant 3 reported similar opinions towards *Dark Souls 3*’s (2016) energetic gameplay (Appendix A2, Participant 3). But although participants generally preferred faster paces in games, there were situations where the fast-pacedness exceeded their capabilities. For instance, while playing *Thumper* (2016), participant 7 felt the game was getting too fast for her own reflexes.

Of all games this [*Thumper*] was the one I enjoyed the most. But when everything got way too fast it confused me. My eyesight cannot keep up anymore. There’s a lot going on. But it’s fun, one of the games I enjoyed the most.<sup>45</sup> (Appendix A2, Participant 7).

Even as games got too difficult or challenging, the inclusion of tutorials and forgiving gameplay dampened their impact on participants’ experiences. This was the case with *Democratic Socialism Simulator* (2020), in which participant 2 praised the inclusion of tutorials that explained the game’s mechanics very well (Appendix A2, Participant 2). On participant 1’s experience with *Call of Duty: Modern Warfare 2 Campaign Remastered* (2020) and participant 5’s interaction with *Uncharted 4: A Thief’s End* (2016), both stated that the forgiving gameplay in the two games contributed greatly to their enjoyment of them. Lastly, participants 1 and 7 also liked when games were not too tiring. Not having games demanding a lot from the player at all times allowed participants to take action and make decisions at their own paces.

#### 5.4.6 Readable/ decipherable visuals

Lastly, and although prevalent in a lower scale compared to other themes, participants were fond of readable and decipherable visuals. In other words, participants enjoyed when games presented a clear image where contours and images were easily perceptible. As an example, participant 7 expressed her distaste for low resolution bitmap visuals in *Passage* (2007), and further stated that better, easily readable visuals would have aided her experience greatly.

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<sup>44</sup> A.T.: “Se calhar porque eu não gosto de coisas muito paradas, e este aqui também põe um bocado à prova os reflexos.” (Appendix A2, Participant 7)

<sup>45</sup> A.T.: “De todos os jogos até foi o que eu gostei mais. Mas quando fica muito rápido começa a fazer confusão. A visão já não consegue acompanhar. Tem muita coisa a acontecer. Mas é engraçado, este até foi dos que gostei mais.” (Appendix A2, Participant 7)

And I think visuals are very important. I mean, people that really play spend a lot of hours in games and I think that if the images on the screen are bad, they'll tire your eyesight. And then you'll have to strain your eyes to make sense of what's there. I don't think that's good, because it comes to a point where people don't want to play anymore.<sup>46</sup> (Appendix A2, Participant 7).

Participants occasionally reported their enjoyment of games that featured movie-like sequences, where the visual aspects of the game were similar to how they are presented in movies. On *Battlefield 4* (2013), participant 2 described how she liked the fact that the game's narrative was presented in a continuous form, telling a story as it happens with movies (Appendix A2, Participant 2).

## 5.5 Conclusions

Overall, themes like repetitiveness and the disconnect between game affordances and player expectations and abilities were irrefutable among participants' least enjoyed aspects in games. Confusing game mechanics, high difficulty levels, and lack of time to learn the game properly were among participants' main obstacles in their gaming experiences. However, some other themes were more nuanced in their results, especially regarding pace, nonsensical plots, and game verbs. Both critical and non-critical games present barriers to participation of non-gamers in this culture. Likewise, both had pleasant and enjoyable aspects which our participants appreciated.

Even though there were plenty of game characteristics that our participants identified as barriers to their entrance in the world of video games, there were also many aspects they recognised to be potential drivers that compelled them to play or keep playing certain games. Among these characteristics were diversity of gameplay supported by a variety of in-game verbs and replayability, as well as thought-provoking narratives characterised by their similarities to real life or participants' current life situations and their ability to prompt critical reflection. Participants also pointed out that feeling some sort of challenge, as long as it was not frustrating, too difficult, or too demanding for long periods of time, was a major driver for their enjoyment. Not as common as other themes, visual capabilities were also noted by participants. Participants liked when visuals were readable and decipherable. These sets of characteristics proved useful for the development of our third stage, where we attempted to adapt games to non-gamers

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<sup>46</sup> A.T.: "E acho que a imagem conta muito. É assim, as pessoas que jogam mesmo perdem muitas horas nisto e acho que se a imagem do ecrã for má cansa-te a vista e tens que forçar a vista para perceber o que lá está. Acho que isso não é bom, porque chega a um ponto em que a gente já não quer jogar." (Appendix A2, Participant 7)

preferences and motivations. Having established what the main drivers in gaming for non-gamers are, we investigated ways to adapt that information to our methodology for the stage that followed.

**Table 5.4:** Summary of game obstacles and drivers for non-gamers.

<b>Obstacles</b>		<b>Drivers</b>	
<b>Theme</b>	<b>Summary</b>	<b>Theme</b>	<b>Summary</b>
Repetitiveness	Games that offer little variety in terms of gameplay and game verbs.	Diversified gameplay loop	Multiple ways to achieve an objective.
Mismatch between game affordances and player expectations and abilities	Frustration with complex controls, game mechanics, and not being allowed to act as one expects.	Empowering gameplay	Players are in control of the game's course.
Polarising game pacing	Games that were either too fast-paced or too monotonous.	Thought-provoking narrative	Narratives or plots with critical reflection points.
Spurious or nonsensical premise	Games with illogical or false depictions of reality.	Story immersion	Games with immersive, well-developed stories.
Cluttered or indiscernible visuals	Games with pixelated visuals or excessive visual clutter.	Challenging, but not frustrating	Testing players' capabilities, but not to the point of frustration.
		Readable/decipherable visuals	Visuals were easy to make sense of and did not require much effort to comprehend.

# **6. Stage 3: Adapting games to non-gamers**

## **6.1 Introduction**

The third stage of this study hinges on the results provided by its two preceding stages. We now know how conventional gameplay models are used in video games. We have also recognized the ways in which these conventions act as discouraging detainers for non-gamers looking to get into gaming. In spite of these advances, what we can do in heuristical terms to pull non-gamers into an engaging experience with games is still uncertain.

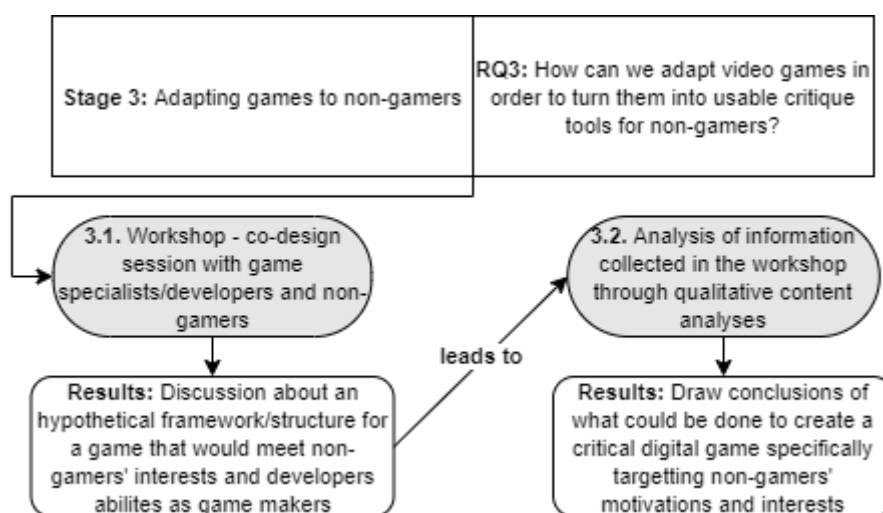
In light of this predicament, this stage attempted to generate dialogue among non-gamers and gaming specialists, to discuss ideas and propose solutions as to how we can adapt digital games to the likes of non-gamers. We opine that a more practical approach to the issue might return better results as opposed to a theoretical analysis of the subject. Working in direct contact with both parties (non-gamers and specialists) could return interesting and useful developments.

## **6.2 Methods and Analysis**

In order to investigate our third research question, we designed two workshop sessions in which non-gamers and video game design specialists worked together to conceive a concept for a critical game for non-gamers. Two sessions were conducted. Each session hosted a singular video game design specialist and two non-gamers (from the sample that participated in our gaming sessions and questionnaires). For our first session, we counted with participants 1 and 2. Succeedingly, our second session counted with participants 5 and 7. All non-gamer participants

were female<sup>47</sup>. Because of the current pandemic<sup>48</sup>, both workshops took place online via videoconference<sup>49</sup>. Each workshop session lasted anywhere from an hour to an hour and a half. The goal was for each sessions’ participants to create two distinct critical game concepts.

The purpose of this workshop was to enable non-gamers to develop a critical game according to their own preferences, motivations, and interests. To do so, we asked video game design specialists to partake in our co-design sessions, so that ideas and concepts provided by non-gamers could be better materialised into game matter by individuals who understand game development processes. Further, we wished to encourage an active conversation between both sides of the spectrum. The researcher acted as a moderator and intervened only when and if the conversation strayed from the main purpose of the workshop.



**Figure 6.1:** Methods for research question 3.

The conceptualisation process occurred in a model similar to that found in Game Design Canvases. Our game design canvas (GDC) took inspiration from Lam’s (2013) own GDC. Lam’s canvas was of particular interest for its simplicity and to-the-point approach in game conceptualisation.

<sup>47</sup> From our sample of 9 participants (7 female and 2 male) from our gaming sessions and questionnaires, only 4 female participants showed availability to take part in our workshops.  
<sup>48</sup> At the time of writing, the COVID-19 (or coronavirus) pandemic was taking place. As such, we tried to avoid direct, physical contact with participants, due to the virus’ contagiousness. Groupings of people were generally unadvised by health authorities. As such, we preferred workshops online.  
<sup>49</sup> The software used for both videoconferences was Zoom (<https://zoom.us/>).





**Figure 6.2:** Game Design Canvas - A tool for rapid game design prototyping (Lam, 2013).

Due to the fact that we were working with a demographic that had limited game design capabilities, we adapted Lam’s game design canvas in a way that excluded some technical aspects of game design in order to develop a basic game concept. Instead, we turned it into a simpler canvas, focusing all efforts on conceptual and thematic aspects alone. The version presented here was translated from the original, which can be accessed in Appendix B1.

<b>Game Title:</b>		
<b>Theme / Critique</b> <i>What is the game's theme? What does it critique?</i>	<b>Context / Setting:</b> <i>What is the game's premise?</i>	<b>Objective(s):</b> <i>What goal(s) do we need to achieve in the game?</i>
<b>Game Mechanics / Actions:</b> <i>What are the game's mechanics? What actions can we do to achieve our goals?</i>		<b>Rules:</b> <i>What are the game's rules?</i>

**Figure 6.3:** Game Design Canvas used in the workshop.

In addition to filling the blanks on the board, and to create more of a challenging and ludic activity, we developed a card minigame to go along with the critical game conceptualisation

process. Each card contains an aspect that non-gamers enjoyed about critical games during their previous gaming sessions. All 22 total cards are available in Appendix B2.

7	8	9
<b>Comparável a situações atuais da vida pessoal do jogador</b> (Drawing comparison to current life situations)	<b>Agência na narrativa</b> (Agency in the narrative)	<b>Desafiante, mas não em demasia</b> (Challenging, but not too challenging)

Figure 6.4: Sample of imposition cards.

I	II	III
<b>Deve suscitar reflexão crítica</b> (Must prompt critical reflection)	<b>Deve apresentar uma crítica a algo</b> (Must critique something)	<b>Deve ter jogabilidade com significado</b> (Must have meaningful gameplay)

Figure 6.5: Sample of obligatory cards.

The game's rules are as follows:

1. There are two types of cards: 19 *imposition* cards and 3 *obligatory* cards. *Imposition* cards contain some imposition that is made upon the game concept being created. These impositions are represented through critical game characteristics which must be included in the game concept. Each card contains a different imposition. Then, we have *obligatory* cards, each containing a foundational characteristic of the critical game structure. Opposite to *imposition* cards, they are immutable and do not change between game concepts. These cards were also made to ensure the game conceptualisation process stayed on target.
2. All 3 *obligatory* cards are automatically drawn in the beginning of each round, and must be thoroughly followed as they represent the core of each game concept. However, *imposition* cards are drawn randomly at the beginning of the round, and players can choose to draw as many as they want in an amount between 3 and 7 in total. The cards were randomly drawn through the use of an online random number generator<sup>50</sup>.
3. Participants start with a 10 minute base timer to complete the game design canvas. Every imposition card drawn grants players an additional 2 minutes. Although their time to complete the activity increases, so does the difficulty of the challenge as they have more cards to work with. Consequently, the time players have to complete their task can vary between 16 and 24 minutes, depending on the number of cards they work with.
4. Next, participants draw cards. Since the first 3 *imposition* cards are automatically drawn, participants then choose how many more they want to draw or if they want to draw at all. The cards attributed to each GDC can be viewed in detail in Appendix B3.
5. Before the round starts, participants have the chance to discard one of the drawn *imposition* cards. However, they must also draw a new one to replace it. The newly drawn card is also random and cannot be taken back after it is drawn. After the round starts, the playing set of cards is locked in, and players can no longer discard or draw any new cards.
6. *Imposition* cards cannot repeat between game conceptualisations of the same group. If a card was drawn for the first game concept, it cannot be drawn again for the second one.

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<sup>50</sup> The online number generator utilised can be accessed at <https://www.random.org/integers/>. The website allows users to randomise integers on any number interval they choose. Accessed in May 2021.

In the scenario that the same card is drawn, another one is drawn in its place. This ensures variety between game concepts.

7. The game ends when the timer runs out, or if participants manage to complete the GDC before they run out of time. After the game ends, participants can no longer alter any elements written down. They can however correct any spelling or grammatical mistakes if such happened.

Having completed two game concepts, the session comes to an end. Results will be written down by the game design specialist in the session. All game design canvases and the respective active cards can be seen in detail in Appendix B3.

To analyse the results, we will proceed with a qualitative content analysis of the game design canvases. Four content tables were developed, one for each game design canvas. These tables include meaning units that correspond to the blanks filled by non-gamers and game design specialists during the workshops. In turn, each meaningful unit of text was analysed according to a set of previously established categories:

1. Sociocultural critique – understanding the nature of the game’s critique, its objective and how it is implemented into the game concept. This regards any fragment of text that may provide a clearer view of the game’s critical message.
2. Gameplay mechanics – understanding if the mechanics are simple or complex, if they have long learning curves or not, and if they are challenging or forgiving. This regards any fragment of text that indicates how game mechanics might be adapted to the game’s concept and critique.
3. Age group – understanding how a specific age group might affect certain aspects inside the proposed game concepts. This regards any fragment of text that may be related to participants’ own age group<sup>51</sup>. Considering that our first sample of participants was constituted by individuals in their 20s, and that our second sample featured individuals in their 50s, age groups and their differing propositions for game concepts earned their own

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<sup>51</sup> This category was established posterior to the analysis of all GDCs. Although not an initially proposed category, upon further investigation we noticed some correlations between age groups and game themes.

category. As such, we investigated how each group’s age bracket was reflected in their game conceptualisations.

**Table 6.1:** Extract from a content analysis table (Appendix C, GDC 3).

Meaningful unit of text	Condensed meaning unit	Code	Sub-category	Category
“Family values, appreciation of the elderly. Sensitising young individuals about the aging process inside the family <sup>52</sup> .”	Alert younger individuals about family values and appreciation of the elderly.	Critiquing a current life routine	Drawing comparison with current routine	Sociocultural critique / Age group
“Fulfilling daily activities of an old person. With challenges connected to each setting and a list of tasks <sup>53</sup> .”	Complete several elderly activities throughout the day.	Gameplay variety	Variety	Gameplay mechanics
	Challenges that the elderly go through in their routine.	Meaningful gameplay	Similarities to real life	Sociocultural critique

Lastly, we analysed the prevalence of each code, sub-category and category and further establish correlations and conclusions according to our own interpretations of their meaning. All content analysis tables can be viewed in detail in Appendix C.

## 6.3 Results

### 6.3.1 Concept 1: Palestine

The first critical game concept (Appendix B3, GDC 1) discussed was about the on-going armed conflict between Israel and Palestine. As such, the game was promptly named *Palestine*<sup>54</sup>,

<sup>52</sup> A.T.: “Valores da família, valorização dos mais velhos. Sensibilizar os jovens quanto ao envelhecimento dentro da família.” (Appendix C, GDC 3).

<sup>53</sup> A.T.: “Cumprir atividades de um idoso num dia inteiro. Com desafios ligados a cada ambiente e a uma lista de tarefas.” (Appendix C, GDC 3).

<sup>54</sup> A.T.: “Palestina”. (Appendix B3, GDC 1)

preferring to take a more direct and serious approach with the game's critical message. In this game, players would have to control Israel's military and propaganda sector. Their objective would be to completely occupy Palestine without allowing public opinion to drop too drastically. To do so, the game would have two distinct, continuously alternating phases.

The military phase would have players taking strategic decisions over their own army in order to find the best way to conquer more Palestinian territory. However, every decision would have an impact on public opinion, to create a sense of agency in the narrative. For example, if the player killed civilians during this phase, public opinion would decrease. Then, the propaganda phase would ask players to try and manipulate conflict-related propaganda in a way that would favour Israel's public opinion. This would be players' best shot at regaining public opinion lost in the previous phase. How well the player managed to complete this task would decide the following military objectives. To win the game, players would need to have total control of the territory. If public opinion dipped too far below the imposed limits, the player would lose.

<b>Game Title:</b> Palestine		
<p><b>Theme / Critique</b> <i>What is the game's theme? What does it critique?</i></p> <p>Asymmetrical conflict between Israel-Palestine.</p>	<p><b>Context / Setting:</b> <i>What is the game's premise?</i></p> <p>The player controls the State of Israel in the conflict against Palestine, controlling military and propaganda aspects.</p>	<p><b>Objective(s):</b> <i>What goal(s) do we need to achieve in the game?</i></p> <p>Completely occupy Palestine, without allowing the Public Opinion level to drop below a certain value.</p>
<p><b>Game Mechanics / Actions:</b> <i>What are the game's mechanics? What actions can we do to achieve our goals?</i></p> <p>The game has two stages that alternate.</p> <p>Military Phase: The player makes strategic decisions to increase the percentage of control over palestinian territory. These choices would have repercussions in terms of Public Opinion.</p> <p>Propaganda Phase: The player controls propaganda regarding the conflict, trying to manipulate Public Opinion to their favour, so that they can continue with their objective of having military control.</p>		<p><b>Rules:</b> <i>What are the game's rules?</i></p> <p>The player loses Public Opinion when they kill civilians in the Military Phase.</p> <p>The player gets Public Opinion back by making good choices during the Propaganda Phase.</p> <p>If Public Opinion drops below a certain level, the player loses.</p> <p>If the player manages to control the territory at 100%, they win.</p>

**Figure 6.6:** Game Design Canvas 1 (participants 1 & 2)<sup>55</sup>.

<sup>55</sup> GDC 1 was translated from Portuguese. The original version can be viewed in Appendix B3, GDC 1.



### **6.3.2 Concept 2: 2020 Vision**

The second concept (Appendix B3, GDC 2) is a critique of life in quarantine and all its negative repercussions. The game was titled *2020 Vision*, working as wordplay between the expression “20/20 vision”, meaning someone who has perfect eyesight, and the fact that no one could have guessed that 2020 would be a year marked by an unprecedented pandemic. The game’s ultimate objective would be quite simple: players would need to make it to the end of quarantine. However, players would need to work through a series of activities associated with life in a lockdown state. Each activity chosen would have a different outcome on aspects of the in-game character’s life.

Activities would be represented through several minigames. Each minigame would affect one or more of the following categories: Physical health; Mental health; Creativity; Self-esteem; Social needs; Performance at work. For example, if a player chose to do extra hours at work, they would get a higher “performance at work” score, at the loss of “mental health” score. If any given category reached zero score, the game would be over. The game would also have different endings according to the level achieved in each category.

<b>Game Title:</b> 2020 Vision		
<p><b>Theme / Critique</b> <i>What is the game's theme? What does it critique?</i></p> <p>Life in quarantine. Repercussions that quarantine has in an individual's life.</p>	<p><b>Context / Setting:</b> <i>What is the game's premise?</i></p> <p>The player chooses among different activities to develop through the course of quarantine. Each choice has repercussions in different aspects of the character's life.</p>	<p><b>Objective(s):</b> <i>What goal(s) do we need to achieve in the game?</i></p> <p>Make it to the end of quarantine.</p>
<p><b>Game Mechanics / Actions:</b> <i>What are the game's mechanics? What actions can we do to achieve our goals?</i></p> <p>Variety of minigames dependant on the activity being done. Each of these activities would affect the level of one or more of the following categories:</p> <p>Physical Health, Creativity, Self-esteem, Social Needs, Performance at Work</p> <p>Example: Working extra hours. Minigame: Signing Documents.</p> <p>++ Performance at Work</p> <p>-- Mental Health</p>		<p><b>Rules:</b> <i>What are the game's rules?</i></p> <p>In case the player allows the level of one of the categories to reach 0, the game ends.</p> <p>At the end of quarantine, depending on the level of each category, the player would get a different ending.</p>

**Figure 6.7:** Game Design Canvas 2 (participants 1 & 2)<sup>56</sup>.

<sup>56</sup> GDC 2 was translated from Portuguese. The original version can be viewed in Appendix B3, GDC 2.

### 6.3.3 Concept 3: Nobody wants to get old!

The third critical game (Appendix B3, GDC 3) conceptualisation roughly translates to *Nobody wants to get old!*<sup>57</sup>. The game reflects on family values, and tries to sensitise younger generations about the hardship of the aging process and oldness. To achieve that, players would be prompted to play as an elder character, with the possibility to customize said character for greater immersion. Players would have a to-do list of activities to complete over the course of one full day. All challenges must be concluded to win the game, and players can only move from one challenge to the next after completing their current one.

Each challenge would have direct correlation to the environment the player was in. For instance, while in their own residence, players would need to make breakfast all by themselves. However, players would also feel the drawbacks that come with old age. As such, if a player tried to read what was written on each package to identify what ingredient they were working with, their vision would become blurry to signify poor eyesight that often comes with oldness. Another example would be set in a subway area. Players would be placed in a jam-packed subway. Their objective would be to move through the crowds in order to leave the subway, or read what station they were currently at. However, difficulty in movement controls would set in to match the difficulty an elder would have in real life.

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<sup>57</sup> A.T.: “Ninguém quer envelhecer!” (Appendix B3, GDC 3)

<p><b>Game Title:</b> Nobody wants to get old!</p>		
<p><b>Theme / Critique</b> <i>What is the game's theme? What does it critique?</i></p> <p>Family values, appreciation of the elderly. Sensitise younger generations about aging inside the family.</p>	<p><b>Context / Setting:</b> <i>What is the game's premise?</i></p> <p>The game can take place in old people's own residences. In the garden, vegetable garden, medical consultations, supermarket, travelling (public transport)...</p>	<p><b>Objective(s):</b> <i>What goal(s) do we need to achieve in the game?</i></p> <p>Completing activities of and elder person over the course of a full day. With challenges connected to each environment and a task list.</p> <p>Examples: Garden - go up a ramp; Subway - jam packed, affliction, hard to move / difficulty making out the destinations.</p>
<p><b>Game Mechanics / Actions:</b> <i>What are the game's mechanics? What actions can we do to achieve our goals?</i></p> <p>Wake up - walk with avatar, having difficulty (delay the movement, feedback), bladder timer (pee) when they go to the bathroom.</p> <p>Breakfast - difficulty reading the packages (vision blur), boiling the milk and difficulty controlling everything at once.</p> <p>They can ask other younger NPCs for help, but it is uncertain if they will answer their call for help.</p>		<p><b>Rules:</b> <i>What are the game's rules?</i></p> <p>Customise the avatar (name and gender), avatar introduces itself and reveals their age.</p> <p>Must complete all tasks successfully.</p> <p>In case the player can't complete a task, they can't move on to the next one.</p>

**Figure 6.8:** Game Design Canvas 3 (participants 5 & 7)<sup>58</sup>.

<sup>58</sup> GDC 3 was translated from Portuguese. The original version can be viewed in Appendix B3, GDC 3.

#### 6.3.4 Concept 4: My perfect vacation!

Last but not least is a more uncommon approach to a critical game. The concept behind *My perfect vacation!*<sup>59</sup> (Appendix B3, GDC 4) is that of a holiday planning simulator. The name of the game is satirical, as a means of implying that vacation hardly ever goes as planned. The game's intent would be to reflect on how difficult it can be to plan a vacation nowadays, especially under pandemic circumstances. Players would need to plan and simulate their own vacation, taking into account factors like the number of people going on vacation, spending money, country and/or places to visit, points of interest, trajectory, and so on. Their objective would be to plan their trip as best as they could, in order to be able to successfully complete their vacation.

However, the game would have several challenges. For example, players must study the place they choose to go to, in order to understand what dangers may lie there, what precautions they must take, and if they must take any vaccine to protect themselves. Additionally, failing to comply with their own plan could result in penalties such as time constrictions or not having enough money to complete the rest of the vacation. On the other hand, if players successfully manage to follow their own plan accordingly, they get bonuses and rewards.

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<sup>59</sup> A.T.: "As minhas férias perfeitas!" (Appendix B3, GDC 4)

<b>Game Title:</b> My perfect vacation!		
<p><b>Theme / Critique</b> <i>What is the game's theme? What does it critique?</i></p> <p>Planning a vacation. Difficulty in buying e searching for flights and hotels. Security issues with planning on the internet. Baggage getting lost. Trip chronogram.</p>	<p><b>Context / Setting:</b> <i>What is the game's premise?</i></p> <p>Simulate the trip's plan (select the quantity of persons, money available, countries and locations to visit), checklist of a travel agency. Trip in a digital paper.</p>	<p><b>Objective(s):</b> <i>What goal(s) do we need to achieve in the game?</i></p> <p>Conclude the trip successfully.</p> <p>According to the country, detail every location to visit. Learn of the dangers and precautions to have.</p>
<p><b>Game Mechanics / Actions:</b> <i>What are the game's mechanics? What actions can we do to achieve our goals?</i></p> <p>Plan - checklist of a dream vacation (agency platform). Have the value in mind. Place it at the end of the list.</p> <p>Simulated time (like in <i>The Sims</i>), do all tasks, can make decisions and change them. At the end of the day the bill is presented.</p> <p>Feeding and hygiene challenges, sanitary problems. Medical consultation for the voyager.</p>	<p><b>Rules:</b> <i>What are the game's rules?</i></p> <p>Create a plan and experiment with what was planned. Can deviate from the plan, with other propositions.</p> <p>Penalties. Example: go to the museum but it is closed because too much time was spent in other activities; extra costs.</p> <p>Bonuses - free tours, accumulate travelling miles to buy products...</p>	

**Figure 6.9:** Game Design Canvas 4 (participants 5 & 7)<sup>60</sup>.

<sup>60</sup> GDC 4 was translated from Portuguese. The original version can be viewed in Appendix B3, GDC 4.

### 6.3.5 Conclusions

Upon critical analysis, we noticed two central themes resurging on the conceptualisations: First, on both *Palestine*<sup>61</sup> and *2020 Vision*, themes and critiques emerged from topics present in the news at the current time. The Israel-Palestine conflict and life in quarantine were both situations that affected the current state of their personal and social lives. It too had an impact in the sociocultural environment they were inserted in. Both non-gamer participants manifested interest in a critique of contemporary, socially impactful themes. Furthermore, their inspiration for many of the game's features took root in previous critical games / newsgames they played or were acquainted with, such as *The Republic Times* (2012) or *September 12th* (2003), or in casual games where the player must complete a series of short, simple tasks, such as *The Sims* (2000).

Second, *Nobody wants to get old!*<sup>62</sup> and *My perfect vacation!*<sup>63</sup> revolve around themes that might not be of great interest to younger generations. In fact, the first game out of the two mentioned is a critique on how younger generations can often ignore the needs of older people. It aims to sensitise young individuals about elderly demographics and their everyday difficulties. Although the second game takes a more experimental approach, it is still a noteworthy critique nonetheless. It applies its critique in a more light-hearted and somewhat humorous way. Ultimately, vacation is supposed to reward individuals with a moment of relaxation, but the game subverts it and does the opposite. It takes players through the extensive and stressful process of preparing a vacation abroad.

Both game concept samples presented ideas for games based on current life situations, which seems to be a major point of interest for non-gamers. Our younger non-gamer participants, both at the age of 25, developed concepts around political disputes and the social and personal consequences of life in quarantine because, as happens with many people their age, these are topics they care about or can relate to. Younger generations tend to be more updated on current social and cultural subjects (Parker et al., 2019). Likewise, our older participants, both in their 50s, created game concepts related to their contemporary routine. During the workshop session, both of them mentioned that they were currently taking care of their parents, now at a very old age. Both of the concepts they created include themes that usually have more traction among older generations than younger ones. Bearing all of this in mind, we opine that age, just as is the case with gamer demographics, is a strong dictator of how non-gamers make use of critical games as sociocultural critiquing tools.

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<sup>61</sup> A.T.: "Palestina". (Appendix B3, GDC 1)

<sup>62</sup> A.T.: "Ninguém quer envelhecer!" (Appendix B3, GDC 3)

<sup>63</sup> A.T.: "As minhas férias perfeitas!" (Appendix B3, GDC 4)

All conceptualisations made use of game mechanics that were easy to grasp and did not require great amounts of skill to interiorize. Gameplay variety was widely favoured, either through the player being given the freedom to choose the course of action to take in the game, by providing different outcomes depending on players decisions, or by allowing players to complete a set of diverse activities in any given order. Gameplay mechanics were often based on meaningful gameplay. Participants came up with situations where players had to make moral decisions, or where any given action taken would signify a follow-up repercussion in the game. In 3 out of the 4 game concepts, the gameplay loop revolved around completing tasks that resembled aspects of participants' quotidian. Similarities to participants' lives were found in a majority of the games, either through game verbs or social critique.

Adapting critical games to non-gamers interests, preferences, and motivations is a very subjective process however, one dependent on a variety of personal and demographic characteristics. Our workshops have shed some light on how this procedure may provide a more supportive and blooming relationship between critical games and non-gamers. Non-gamers have an untapped reserve of brand-new concepts waiting to be explored, but adapting critical games to their own conceptual visions requires game designers to acknowledge non-gamers' perceptions on digital games.

In sum, we concluded the following from our workshops' results:

1. Non-gamers enjoy critical games that are related to themes present in the current news cycle, their personal and social quotidian, or that they can emotionally connect to.
2. A non-gamer's age group can be a strong dictator of their preferred game themes. The stage of life of a non-gamer can be correlated to the themes of critique they care most about.
3. Non-gamers prefer games that can assimilate to real life matters, either through the actions they can do in-game, or through the critique the game portrays.
4. Gameplay loops in which players must complete a variety of short and simple tasks were more in line with what non-gamers were looking for in a game.
5. Non-gamers were driven by game mechanics that they could interiorise quickly and that did not impose high skill levels to get into.



6. Non-gamers enjoyed being able to decide the course of action in a game. Having the power and freedom to choose how things unfolded in games was a motivating factor in their experiences.

# 7. Stage 4: Discussion and Conclusions

## 7.1 Findings

This section recapitulates on our proposed hypotheses for this study, and analyses their validity in light of the results we obtained. It is divided in 3 subsections, each representing a research question and its respective hypotheses. For each subsection, we presented our findings, and discussed their meaning based results previously found in literature. Additionally, subsections have their own tables summarising our hypotheses and results.

### 7.1.1 First question

The purpose of this research was, firstly, to understand what idiosyncrasies were predominantly found in non-critical game models, and, further, how these very same idiosyncrasies were approached through the critical game. To investigate the topic, corresponding to our first research question – *What idiosyncrasies are presently found in traditional video games? In which particularities are critical games able to tackle these idiosyncrasies?* –, we created 5 hypotheses that were to be tested through literature review.

Our results led us to conclude that there were 5 commonplace characteristics in non-critical game design. Among these characteristics was 1) *inflexible or invariable game design*, which testifies to a prevalence of games in the industry that require players to invest more time and effort than some may be able to afford. Although some players, namely those that are gamers, can adapt to most games fairly quickly, non-gamers need to put in more effort to understand how game

mechanisms function. Non-critical games are usually made with the assumption that only gamers will play them, therefore confirming hypothesis 1.

Another characteristic was 2) *repetitiveness and unoriginal game verbs*. Non-critical game design tends to recycle and reiterate verbs previously used in other games. As a result, game verbs are either changed in slight and almost unnoticeable ways that do not offer much in terms of alternative means of play, or simply piled on top of each other in hopes of creating a game where there is seemingly more to do. This leads to 3) *player actions with predetermined outcomes or consequences*. In conjunction, these two characteristics (2 and 3) go in line with what hypotheses 2 and 4 propose: because these games are lacking in the creative and expressive department, players are obliged to act in accordance with what the game expects of them.

In addition, we also found that 4) *most non-critical games did not offer experiences where meaningful repercussions were applicable to the player's decisions*. Furthermore, 5) *even when these games did offer meaningful gameplay that offered an experience that went beyond the game itself, they did so through contrived and overcomplicated game mechanics*. This was partly hypothesised in H3 and H4. Although we found non-critical games that did offer meaningful experiences to players, they were based on conventional, complex gameplay models. If on the one hand these games offered a powerful critique or commentary on any given topic, they also made use of all of the above mentioned characteristics to carry those messages forth.

Lastly, our results showed that procedural rhetoric, which is commonly found in critical game design, could be an effective way of subverting all these conventional systems, instead offering fresh experiences that disregard much of what constitutes conventions in video games. At last, we also found that procedural rhetoric used in critical games could prove useful to subvert these mainstay characteristics. Through their simplified game mechanics and focus on quality of the game verbs rather than the quantity in which they prevail, critical games are not only apt to apply critique on a social and cultural level, but are also able to criticise the medium's own idiosyncratic characteristics. Critical games can tackle convention and offer unprecedented schemes for play. As such, hypothesis H5 was also verified.

**Table 7.1:** Summary of hypotheses and results for the first research question.

Hypotheses	Results
<p><b>H1:</b> Traditional video games assume that the player, regardless of being a gamer or non-gamer, will understand and adapt to the mechanical scheme of the game. Therefore, it presumes that gamers and non-gamers possess the same adaptive skills towards the game.</p>	<p><b>Confirmed</b> by literature and comparative analysis. Results showed that non-critical games are usually made with the assumption that only gamers will play them.</p>
<p><b>H2:</b> Idiosyncrasies of traditional video games stem largely from their repetitive and immutable game mechanics and from their ineptitude to allow the player to create their own critical narrative through gameplay.</p>	<p><b>Confirmed</b> by literature and comparative analysis. Results showed that non-critical games are lacking in the creative and expressive department, offering repetitive game verbs. This leads players to act based on previous game experiences, rather than playing critically on their own terms.</p>
<p><b>H3:</b> Concepts such as winning or losing, destroying opponents or enemies, and acting without repercussion are too prevalent in video games, however critical games are able to question these characteristics offering a diversity of unprecedented concepts to video games.</p>	<p><b>Confirmed</b> by literature and comparative analysis. Results showed that even when non-critical games offer meaningful experiences, they were based on conventional or complex game systems and mechanics.</p>
<p><b>H4:</b> Plenty of video games often ask players to perform gratuitous actions in order to achieve unfounded objectives that are not to be questioned. As such, traditional video games commonly propose linear and unquestionable paths to their objectives. Oftentimes, these paths require players to perform skewed and nonsensical actions.</p>	<p><b>Confirmed</b> by literature and comparative analysis. Results showed that reiterating game verbs and game design leads players to act in accordance with what the game expects of them.</p>
<p><b>H5:</b> Critical games are able to tackle the idiosyncratic behaviours of traditional games by approaching the medium through sociocultural critique and by creating new ways of gameplay unbinded from those already known.</p>	<p><b>Confirmed</b> by literature and comparative analysis. Results showed that critical games are not only able to criticise sociocultural issues, but also the medium's own conventions by creating new and unfamiliar types of play.</p>

### 7.1.2 Second question

Afterwards, the focus of our research shifted toward understanding how the identified game idiosyncrasies explored through our hypotheses and supported by literature affected non-gamer audiences in their attempts to adhere to gaming. The four hypotheses we developed were aimed

at testing the results to our second research question – *In which ways do commonly used video game mechanics/ mechanisms affect the entrance of non-gamers (individuals lacking familiarity with video game idiosyncrasies) in the medium?*

Our results showed that repetitiveness in the game loop or in the actions one was able to perform in the game was an incisive factor when it came to demotivating non-gamers from playing games. Games where the available verbs reiterated over and over were of little interest to non-gamers. On the contrary, when games offered the possibility for players to express themselves in the game through a variety of in-game actions, non-gamers were more motivated to play. Thus, H8 was in accordance with the obtained results.

However, H7 was only partly correct. While their unfamiliarity with the medium led to a mismatch between what players expected to be possible and what the games actually allowed them to do, this did not necessarily correlate to problem-solving scenarios exclusively, but to all the game offered as a whole package. Other times, because mechanics and the gameplay system were poorly explained or evidenced, non-gamers were left with the impression that the game's verbs were few and repetitive, when in actuality they just did not know of their existence. Many non-gamers reported on the fact that the controls and gameplay mechanics in certain games were too confusing, adding that the inclusion of tutorials or information that explained how the game worked properly would make their experience less frustrating. A wide array of non-critical games still expect all players to have the same level of knowledge over video games, which poses great adversity for individuals with lack of understanding of the medium's inner workings. This conclusion validates our stance on hypothesis H6.

Yet, H9 turned out to be inconclusive in our study. Despite having reached the conclusion that non-gamers do seem to enjoy when games include some sort of sociocultural critique in their plot, there were no indicators that they did not enjoy games that were not primarily offering critique. In fact, many non-gamers seemed to enjoy aspects of both the FPS genre and characteristics of critical games as well. Even when games posed a great challenge, plenty of non-gamers were unmoved by the difficulty as long as there was something that motivated them to do so, or if they simply were having fun.

**Table 7.2:** Summary of hypotheses and results for the second research question.

Hypotheses	Results
<p><b>H6:</b> Various video games take on adverse stances toward non-gamers by making use of game mechanics systems that require the player to have previous experience with and understandings of the game or the kind of game in question.</p>	<p><b>Confirmed</b> by questionnaires and thematic analysis. Many non-critical games expect players to have the same level of knowledge over video games, which poses adversity for individuals who are not acquainted with video game mechanics and conventions.</p>
<p><b>H7:</b> Due to their unfamiliarity with video games, we hypothesize that non-gamers feel restricted by the lack of freedom in expressive and creative terms that the game allows for problem-solving scenarios.</p>	<p><b>Partly confirmed</b> by questionnaires and thematic analysis. Although their unfamiliarity with the medium led to a mismatch between non-gamers' expectations and game affordances, this did not regard problem-solving scenarios exclusively.</p>
<p><b>H8:</b> Many of the game verbs used in video games are derivative of repetitive and uninteresting actions, rather than creating an appealing experience where creative gameplay and critical play are the key-focus.</p>	<p><b>Confirmed</b> by questionnaires and thematic analysis. Games where the available game verbs were repetitive and derivative were of little interest to non-gamers, but when games offered the possibility for self-expression through a variety of in-game actions, non-gamers felt more motivated.</p>
<p><b>H9:</b> Many non-gamers search for an experience with a focus on the sociocultural spectrum and on the implications that arise from actions taken in-game. Although some commercial games offer this type of experience, it is oftentimes intertwined with complex game mechanics that drive non-gamers away.</p>	<p><b>Undetermined.</b> Although we concluded that non-gamers seem to enjoy games with sociocultural critique themes in their plot, there were no indicators that they did not enjoy games that were not primarily offering critique.</p>

### 7.1.3 Third question

At last, our research searched for answers to our third research question – *How can we adapt video games in order to turn them into usable critique tools for non-gamers?* We tried to look for ways to adapt driving factors for non-gamers' enjoyment into the critical game module, stripping out the characteristics that acted as obstacles to their entry in the medium. We developed four hypotheses that represented what we expected to obtain from our results.

The themes prevalent in our GDCs showed that non-gamers enjoy themes which relate to real life matters or that they can correlate their own life to. We also noticed that their concepts for games were quite inventive. Specifically, concepts presented in GDCs 3 and 4, which were

created by participants 5 and 7, were very distinct from those prevalent in non-critical games. GDC 3 was about a game to raise awareness for old age inside a familiar environment, and GDC 4 was essentially a vacation planning simulator. Both concepts fit well into the critical game genre, but are indeed very specific and have not been priorly explored to great extent. GDC 1 and 2, elaborated by participants 1 and 2, also fit the critical game genre perfectly, but their concepts did not stray from those we can generally find in critical games. As such, Hypothesis 10 can be said to be correct, inasmuch as there are plenty of ideas and concepts that games are yet to explore and that non-gamers would find interesting and motivating.

Furthermore, we also managed to adapt the game concept according to what our non-gamer sample mentioned to enjoy in games, which H10 also aimed to explore. Likewise, H11 was also confirmed by our workshop results and by previous results from research question 2. We had already established that non-gamers enjoyed exercising freedom in the way they could act in the game, and that restrictive or repetitive behaviours that did not allow for creative gameplay to occur did not fit well into their preferences and motivations scheme. This was also testified by the game concepts that were developed. In all of them, we noticed great variety in the gameplay scenarios and game verbs used. In *Palestine*<sup>64</sup> and *2020 Vision* specifically, there was special attention to player freedom actions-wise, and to how each action could impact the course of the game. There were various ways to go about these games, and although the objectives were very simple and to the point, they provided players multiple approaches to go about them, depending on what the player intended.

However, hypothesis H12 was refuted by our results from our gaming sessions and questionnaires, as well as the workshops'. We opined that non-gamers would be more drawn by themes that stayed out of violence, war, competitiveness, or any other themes commonly found in many non-critical games. Upon analysis, our questionnaires' results not only showed us that many non-gamers do not mind these themes in video games, but rather that some of them actually find them to be enjoyable. One participant in particular even mentioned that there was something about themes of violence that attracted human beings to it. One of the concepts in the workshops, *Palestine*<sup>65</sup>, made use of a somewhat violent premise, showing that participants 1 and 2 had no issue with including sensitive themes in their concept. So while themes straying from those predominant in non-critical games did not necessarily have a higher rate of acceptance among non-gamers, they were still enjoyed. Much like what happens with gamers, personality traits seem to have their own weight over what themes non-gamers are keener on. Even then, perhaps age

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<sup>64</sup> A.T.: "Palestina". (Appendix B3, GDC 1)

<sup>65</sup> A.T.: "Palestina". (Appendix B3, GDC 1)

groups could represent a key factor for the understanding of why some non-gamers enjoy violence and war, and others do not. Looking at our gaming session participants, we can observe that our participants ranging from ages 18 to 26 mentioned enjoying these themes in one way or another. On the other hand, participants over 50 all reported not enjoying violent video games. Participant 7 even brought up how she thoroughly disliked violence in video games, although the selection of games she played was not inclusive of any games of the type. Even then, we acknowledge that our participant sample is not at a scale where we can assert how important a factor age can be in this regard.

Lastly, our workshop results were in accordance with H13. All concepts presented in the GDCs featured simple and explicit mechanics that provided variety in the gameplay loop without confusing the player with contrived systems. This was also in line with our results from our questionnaires, as participants mentioned their disregard for complicated mechanics that required previous experience or substantial amounts of time with the game to understand.

Even with our reduced sample of non-gamers, we observed that neither critical games, nor non-critical games, seem to have a perfect formula that fits in with non-gamers' interests in video games. Instead, it appears that both genres have characteristics that can be appealing to non-gamers. Yet, critical games were a viable option for the adaptation of games to non-gamers. By tweaking the critical game formula, games can be created to appeal to the non-gamer community. For that to be possible however, future game designers should acknowledge non-gamers necessities, and work hand-in-hand with non-gamer personalities.



**Table 7.3:** Summary of hypotheses and results for the third research question.

Hypotheses	Results
<p><b>H10:</b> Gamers' preferences, interests and motivations have been explored to rather considerable depth. However, that which non-gamers would like to encounter in video games has not been properly explored. As such, we believe that once non-gamers' interests and preferences are accounted for, we will be able to adapt games to their liking.</p>	<p><b>Confirmed</b> by workshops. Results showed that critical game concepts created by non-gamers were specific and had not been priorly explored to great extent. As such, there are still plenty of ideas and concepts that games could yet explore and that non-gamers would find interesting and motivating.</p>
<p><b>H11:</b> Certain video game features and characteristics have a greater positive effect in non-gamers' playing sessions. In detail, we believe that non-gamers will take more interest in games that heightens their ability to express themselves freely inside the game space. Likewise, games where there is less restriction regarding ways of completing objectives will prove more successful.</p>	<p><b>Confirmed</b> by workshops and gaming sessions. Previous results had already established that non-gamers enjoyed exercising freedom in the way they could act in the game, and that restrictive or repetitive behaviours that did not allow for creative gameplay to occur did not fit well into their preferences and motivations scheme. This was also testified by their created game concepts, in which we noticed great variety in the gameplay scenarios and game verbs used, as well as freedom to choose their course of action.</p>
<p><b>H12:</b> In-game themes that stray from those predominantly observed in traditional games (namely violence, war, and excessive competitiveness) will have greater success with non-gamers.</p>	<p><b>Refuted</b> by workshops and questionnaires. Although we opined that non-gamers would be more drawn by themes that stayed out of violence, war, competitiveness, or any other themes commonly found in many non-critical games, our questionnaires not only showed us that many non-gamers do not mind these themes, but rather that some actually enjoy them. One game concept from a workshop also featured "war" as a main theme.</p>
<p><b>H13:</b> Simpler and explicit mechanics will result in a better gaming experience for non-gamers. On the other hand, games with frustrating and contrived mechanics requiring some previous experience with video games will not be as appealing to non-gamers.</p>	<p><b>Confirmed</b> by workshops, questionnaires and thematic analyses. All concepts presented in the GDCs featured simple and explicit mechanics that provided variety in the gameplay loop without confusing the player with contrived systems. This was also in line with the characteristics participants said to enjoy during their gaming sessions.</p>

## 7.2 Limitations

The limitations of this study can be traced back to a series of factors, some of which were beyond our control. First, the small number of empirical studies on non-gamers available at the time of writing represented a vast obstacle to the development of section 1.2. Although this study aimed to shed light on what we can do to make games playable for non-gamers, the dearth of empirical research on the non-gamer demographic affected the precision of the collected data on the subject, especially as we attempted to comprehend non-gamers' preferences and motivations towards video games.

Another limitation emerged during our gaming sessions. The collection of games selected here was limited by three main aspects:

1. The games selected had to be in possession of the researcher, as well as the respective gaming platforms in which those games were playable. This meant that games exclusively playable on platforms other than the Playstation 4, Windows PC, and iOS smartphones were excluded as they could not be accessed otherwise. In turn, this led to many games only playable on other platforms not being used. Variety in the games chosen for the gaming sessions was thus affected.
2. The selected games could not have long title sequences or introductory cutscenes. Because every game would only be played for a maximum of a quarter of an hour, we could not afford to include games with extensive non-playable introductory scenes. As such, games particularly focused on story-driven, movie-like experiences could not make it into our sample. As our results showed however, non-gamers were keen on story-driven games, even though our sample was somewhat limited.
3. Many critical games were created through Adobe Flash. However, as of December 2020, Adobe Flash is no longer available, meaning that a substantial number of critical games were no longer accessible for the time being. As a consequence, the list of playable critical games was relatively reduced.

We must also address the difficulties faced in finding suitable participants for our gaming sessions and questionnaires, especially regarding the male sample. Given that all participants had to be in line with our selective criteria, and noting the necessity of this study to be conducted presentially, we found it challenging not only to find individuals that met all of our criteria, but further found that balancing the male and female number of participants was not feasible. This led to the female sample of participants heavily outweighing the male sample. This discrepancy

impacted the heterogeneity of the study. Still, we believe our sample was enough to provide interesting and contrasting results.

We associate our difficulty in finding suitable participants with two possible causes:

1. The need for the study to be strictly presential greatly limited the scale on which we could find participants. Were the study conducted online, our adversities would likely be considerably reduced.
2. With the ongoing COVID-19 pandemic, a steady stream of newcomers have made their way into the world of gaming. With the sequential lockdowns that took place for several weeks, many non-gamer individuals saw their excessive time stuck at home as a newfound gateway to gaming. This also correlates with the fact that, at the time of writing, plenty of hardware components for gaming computers and newly released consoles such as the Playstation 5 and Xbox Series X have been out of or very low on stock for the past few months. Perhaps because many non-gamers are now turning their attention to video games, demand for gaming paraphernalia is now higher than it has ever been (Clement, 2021; Mochizuki, 2021; Waterson, 2021).

Our workshops were also affected by the availability of the participants. Given that only 4 out of the 9 possible participants were able to attend, our workshops had to be limited to 2 participants per session. Although a larger sample would have provided a more diverse arrangement of results, gathering more participants was not attainable.

### **7.3 Future Work**

The limitations listed in section 7.2 can also serve as indicators of what might be done regarding future work. As mentioned, only a small number of participants were included in this study. With a bigger sample, future results might not only turn out to be more varied and accurate, but will too provide a stronger database. Likewise, future studies might want to look into having a more balanced sample of participants, in order to ensure that female and male non-gamers' opinions on video games are measured in equal amounts. Additionally, a wider and more diverse cast of video games could be a key factor for gaming sessions with more dynamic results.

Further studies may also try to more accurately pinpoint non-gamers' interests and preferences in video games by applying a more detailed filter that categorizes non-gamers by age

and gender, as these are indicated to be the biggest differentiating factors among gamers' choices in what games they play. In future work, it would also be interesting to perform workshops with non-gamer and gamer focus groups, so as to analyse any similarities or disparities in their game conceptualisation process. Investigating said processes in both cultures could lead to noteworthy results.

Our study excluded social games and the multiplayer vertent of video games. This is a component worth exploring in the future, as social gameplay can likely be a major point of interest to certain non-gamers. If multiplayer is already a selling point for a majority of gamers of all backgrounds nowadays, it may not be too far-fetched to analyse the effect of this social module on the non-gamer demographic as well.

However, we believe that future work could and should go beyond this study's limitations. Although we explored how non-gamers can be players, there is still much to be done in this regard. For instance, future work could try to understand how we can identify different types of non-gamer. This study has shown that non-gamers have diverse tastes and motivations in video games, but we have not yet understood if, just like gamers, non-gamers can be adjusted to or inserted in different archetypes that characterise their preferences or motivations.

Future studies could also expand their scope to other game types besides just games played on controller or keyboard and mouse. As was briefly explored through section 1.3, motion sensor controls have the potential to be successful among non-gamer audiences as they seem to adapt to them more easily. It would be interesting to see the relationship between motion-based games and non-gamers explored to further depth. This type of game opens up many possibilities of play that were not delved into in this study.

Lastly, our workshops could be expanded in several ways that could provide worthwhile results. Naturally, more participants and more sessions would have given this study more varied and contrasting results. Future work could also look into more ways in which we can integrate non-gamers in the game development process. Our procedure focused on simple game conceptualisations, and although it required some effort from our non-gamer participants to complete the activity, it would be useful to investigate and identify other strategies even more inclusive of non-gamers, so that the results may reflect even more upon their gaming interests.

Additionally, future studies could take after our proposed workshop model and adapt and apply it not just to non-gamers, but to gamers as well. Conducting co-design workshops with gamer and non-gamer focus groups' separately is bound to provide contrasts and links among both groups. Analysing how both gamer and non-gamer individuals create concepts for games

should provide valuable insight over their individual perceptions of what games could or should assimilate to.

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# Appendices

## Appendix A1: Questionnaires: Portuguese version

**Questão 1:** O que achou de cada um dos jogos?

**Questão 2:** Do que gostou mais em cada um dos jogos?

**Questão 3:** O que achou menos interessante ou desagradável em cada um dos jogos?

**Questão 4:** Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.

**Questão 5:** Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?

**Questão 6:** Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?

## Appendix A2: Questionnaires: Transcriptions and additional notes

### Participant 1

#### General Info:

**Age:** 25

**Gender:** Female

**Occupation:** Photographer

**Technological background:** Proficient with smartphones and computers. Frequently uses image editing software. Good digital literacy.

**Experience with games:** Has little experience with games. Has not played video games since the age of 16, and even then she only played a few select games such as *Grand Theft Auto: San Andreas*. Understands basic game controls.

#### Questionnaire:

##### Questão 1: O que achou de cada um dos jogos?

Participante 1: *O Modern Warfare [2 Campaign Remastered]* eu achei divertido e apesar de ficar stressada, não ficava stressada como no *Celeste*. Era um stress do género “tenho de ir rápido” mas se não conseguir não importa.

Investigador: E o segundo... que foi o *Dogness*?

Participante: Achei piada por causa do conceito. Não fiquei frustrada porque comecei a perceber qual era o ponto do jogo. Foi mais até educativo do que propriamente divertido. Fiquei mais maravilhada com ele por um lado mais conceptual. E... qual era o outro?

Investigador: O terceiro jogo era o *Celeste*.

Participante 1: O *Celeste* eu comecei por gostar dele mas depois fiquei frustrada com os comandos e porque era um jogo muito repetitivo a nível dos comandos e estás muito "aware" do que tens de fazer. É sempre saltar, subir, andar para a frente e acabei por ficar frustrada por estar sempre a repetir a mesma ação.

Investigador: E o [*The*] *Republia Times*?

Participante 1: Foi o meu favorito, até agora. Porque era mesmo desafiante e tens um objetivo a concluir mas é um objetivo mesmo rápido e então não ficas muito cansada.

### **Questão 2: Do que gostou mais em cada um dos jogos?**

Investigador: Tecnicamente já acabaste por responder a esta questão. Alguma coisa que queiras acrescentar?

Participante 1: Eu gostei do *Modern Warfare [2 Campaign Remastered]* mas não consegui levar o jogo a sério.

Investigador: Não conseguiste levar o jogo a sério?

Participante 1: Não.

Investigador : Mas porquê?

Participante 1: Porque é parvo estarmos assim a jogar na guerra e não é assim que a guerra é. Era bom para aliviar stress... Não sei, não consegui levar a sério e os outros acho que levei mais a sério.

### **Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Investigador: Com o *Modern Warfare [2 Campaign Remastered]* já acabaste por referir que não conseguiste levar a sério. E nos outros jogos?

Participante 1: Nos outros dois que gostei [*Dogness; The Republia Times*] acho que não tenho mesmo nada a apontar. Achei piada a tudo mesmo.

Investigador: No *Dogness* e no...

Participante 1: E no *The Republia Times*. Sim, nesses aí gostei de tudo sinceramente porque percebo que tem também a ver com o conceito e tudo mais e por isso gostei deles. Agora, no

*Celeste* eu comecei por gostar, parecia até ser um jogo com uma narrativa que podia ser interessante só que lá está, os comandos deixaram-me completamente bloqueada. Então tipo não consegui gostar disso, não consegui tipo lidar com o jogo por ser tão repetitivo e tão mecânico nesse aspeto.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 1: No *Call of Duty Modern Warfare 2 [Campaign Remastered]* a cena é, a pressão de teres tempo e de teres toda a gente "go go go" e tu ainda te estás a adaptar aos comandos. Mas até aí até me dava vontade de rir porque estava a ser mesmo engraçado andar ali a correr às voltas. Mas no *Celeste*, não estava a ter sequer piada porque o boneco só caía. Eu acho que isso é mais frustrante, porque parece que não tens tanto controlo. Enquanto no MW2 ainda me podia safar e esconder em algum lado e ganhar tempo, ali não consigo fazer nada porque se não acertar não tenho tempo de me recompor. E então como não tenho tempo de aprender e de reavaliar a situação, não gostei muito do jogo. Deixou-me logo frustrada.

Investigador: E nos outros jogos?

Participante 1: Não tenho nada a apontar.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 1: Sim, jogava o *The Republica Times*. Jogava esse.

Investigador: Consegues explicar porque é que gostarias de voltar a jogar esse? Ou algum desse género?

Participante: Sim, porque primeiro ainda não consegui concluir o objetivo nesse jogo. Por isso jogava pelo menos até cumprir o objetivo. E o outro [*Dogness*] por exemplo não tem um ponto. O ponto do jogo é tu perceberes que não há uma raça perfeita, ou seja a partir do momento que compreendes isto já completaste o jogo. Enquanto que no [*The Republica Times*] não, tu tens mesmo de tentar fazer o melhor trabalho com as notícias que tens e acho que até é bastante real porque se trabalhares tipo para um país que está sob ditadura ou em guerra é exatamente isto que



tens de fazer com as notícias. E não é fácil porque efetivamente tens notícias miseráveis como eu tinha ali. Então acho que por ser tão parecido com aquilo que seria a realidade, eu acabei por gostar mais do jogo e achei desafiante.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 1: No [*The*] *Republia* [*Times*], eu acho que era as notícias irem mudando de alguma forma, e depois todo o build-up da história e de dizerem que a minha família estava em perigo e agora estava a salvo. Isso fazia-me querer jogar não só por ti e pela tua família mas por conseguires efetivamente lançar um jornal que conseguia manipular as pessoas...

Investigador: Então sentias quase um sentimento de "agency" enquanto...

Participante 1: ...Sim! No fundo eu senti que estava mesmo num jornal e por isso queria fazer o meu melhor trabalho e conseguir mesmo concluir o meu objetivo. Conseguia mostrar o meu "skill", que percebia como o jornal funciona e como as coisas funcionam. Acaba por ir buscar noções tuas que tu tens sobre como o mundo funciona. E acho que por o jogo se basear exatamente nisso tornou-se interessante. Porque no fundo pôs ao teste as minhas capacidades também. Achei piada a isso.

**Additional Notes:**

- Was initially nervous with controller vibration.
- Had difficulty understanding when the game switched between cutscenes and actual gameplay.
- Forgets controls that were just learned.
- “É por isto que não jogo, isto não é nada relaxante!” - Comment while playing *Celeste*.
- Got easily frustrated.
- Skipped *Celeste* at the 10 minute mark.
- Initially enjoyed *Celeste* (“Este jogo é bonito”) but quickly became frustrated when she couldn't beat a section of the game (“Odeio este jogo! Está a deixar-me irritada”).
- Thoroughly enjoyed *The Republia Times*.
- Enjoyed the critique in *Dogness* but was not too keen on the gameplay loop.

- Struggling to orient herself in *Modern Warfare 2 Campaign Remastered*. Did not know where to go.
- Difficulty coordinating movement in *Celeste*.
- She said she was frustrated in *Celeste* because controls were poorly explained.
- Felt that *Modern Warfare 2 Campaign Remastered* was too cluttered visually. A lot was going on and it was hard to focus on the task at hand.

## Participant 2

### General Info:

**Age:** 25

**Gender:** Female

**Occupation:** Social Media Manager

**Technological background:** Proficient with smartphones and computers. Frequently uses image and video editing software. Good digital literacy.

**Experience with games:** Plays *Animal Crossing* on Nintendo Switch once or twice a week. Used to play video games as a kid but rarely plays anymore. Does not play any other games currently.

### Questionnaire:

#### Questão 1: O que achou de cada um dos jogos?

Participante 2: O *Resogun* achei fixe mas achei um bocadinho repetitivo. São jogos de arcada por isso acaba por ser sempre o mesmo objetivo mas acho que depois no final mesmo tendo experimentado o outro nível com mais inimigos, é sempre à volta do mesmo recinto e então achei que ao fim de um tempo me ia cansar mesmo que houvessem mais coisas. Não estava propriamente a ficar mais interessante. Ficava só mais impossível de me orientar no meio da confusão. O segundo jogo [*The Things We Lost In The Flood*], achei que ia ser promissor mas depois fiquei um pouco desapontada porque lá está, acho que a premissa era mesmo muito boa e a ideia era muito fixe só que depois as mensagens nas garrafas não dizem nada coerente. Ou seja, acho que acabou por subverter um bocado a ideia do jogo. Mesmo o movimento no jogo é muito lento e então começa a desmotivar um bocado, apesar de achar que é propositado. O *Battlefield 4* foi o mais emocionante de todos. Comecei logo a ficar super ansiosa. Mentalmente é muito mais caótico lidar com aquele jogo. No início não percebi bem quem tinha de matar ou para onde ir mas mais para a frente, os inimigos estavam muito mais perto de mim e comecei a trocar os botões e lançava granadas em vez de disparar e não me conseguia esconder. Mas parece-me um bom jogo, parece muito bem trabalhado e é quase como um filme. Eu é que fico frustrada comigo mesma por não conseguir fazer aquilo que tenho em mente porque as minhas mãos parecem não chegar aos botões. No último [*Democratic Socialism Simulator*], acho que está muito bem pensado. O conceito está muito bom e acho que a "delivery" está muito fixe a nível de gráficos. Os textos estão muito "witty", bem escritos e tudo bem organizado. É complexo mas visualmente tem os indicadores bem estruturados. Muito bem conseguido.

### **Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 2: No *Battlefield 4* eu gostei muito do facto de darem importância à narrativa porque se acompanhares o que eles estão a dizer, há sempre uma evolução contínua como se estivesses a ver um filme. Mesmo logo na introdução, começa com aquela música e depois ainda não sabes bem o que se passa, mas depois desenvolve e dá-te aquela opção para disparares. No *Democratic Socialism Simulator*, foi mesmo a perspetiva. Tipo, como é que é possível simplificar uma coisa tão complexa como ser presidente dos Estados Unidos e tornar isso numa coisa de pergunta “sim ou não”, “concorda ou não concorda?”. E gostei de ver como isso afeta outros campos.

### **Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 2: Lá está, não acho que seja desinteressante. Acho que nos dois primeiros [*Resogun*; *The Things We Lost In The Flood*] o que senti foi não tanto monotonia, mas que foi repetitivo. Por exemplo, no segundo quando morres tens de voltar ao início e repetir os passos. Claro que eles mudam o cenário, mas não há uma mudança de dinâmica. Tu não podes saltar do teu barco e ir para o outro. Não é que seja desagradável mas não me apeteceria jogar depois de ir embora. No *Battlefield 4* senti-me frustrada comigo porque o jogo era desafiante. E no último [*Democratic Socialism Simulator*], haviam tantas hipóteses que me apetece ir para casa e continuar a jogar até ver o que vai acontecer com as eleições.

### **Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 2: Eu acho que quase em todos houve dificuldades porque eu não conhecia nenhum dos jogos e não tenho experiência, então havia sempre coisas novas. Em quase todos, o que eu posso dizer, à exceção do último [*Democratic Socialism Simulator*], são mesmo os comandos. Nos três primeiros [*Resogun*; *The Things We Lost In The Flood*; *Battlefield 4*] tive dificuldade em perceber o que fazia cada botão. Se podia andar só numa direção ou não, e depois afinal podia andar numa direção e disparar para outra. Por isso acho que a minha maior dificuldade e frustração é conseguir perceber o que cada botão faz e acioná-los no momento certo em vez de começar a fazer as coisas à sorte por estar stressada. O último jogo não senti isso porque tinha mecânicas muito bem definidas e tinha um tutorial que explicava tudo muito bem.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 2: Como tinha dito, aqueles que me dão vontade são o último [*Democratic Socialism Simulator*] e o *Battlefield 4*, porque apesar da dificuldade e da frustração tenho vontade de evoluir mais.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 2: Eu acho que no primeiro [*Resogun*], quando comecei a perceber que podia andar em várias direções deu-me mais vontade para jogar porque percebi que tinha mais possibilidades. No segundo [*The Things We Lost In The Flood*], com as frustrações e sendo sempre mais do mesmo, não me senti motivada para mais. No *Battlefield 4* senti o mesmo que no primeiro jogo. À medida que avançava no jogo, ia percebendo o que fazia mal e depois não fazia o mesmo erro a seguir. Isso dava-me motivação para continuar. No quarto [*Democratic Socialism Simulator*], acho que só o conceito em si deu-me curiosidade para saber como é que ia ser. Só por si, antes de jogar já me tinha convencido e motivado a jogar.

**Additional Notes:**

- In *Resogun*, she only aimed and fired at one side although you could fire in any direction while moving.
- As she played and learned how the game worked, she began to enjoy it more.
- Too many things happening at once and visual clutter in *Resogun* were a negative point. She thought the controls were weird because you had to shoot on the joystick and usually you press a button to shoot.
- Confusing controls on *The Things We Lost In The Flood* and *Battlefield 4*.
- Severe difficulty in *Battlefield 4* when she tried to aim at enemies and when she tried to walk and look around at the same time.
- When moving in *Battlefield 4*, she mimicked some in-game movements in real life (like trying to dodge bullets or peeking around cover). When she got shot in-game, she also flinched in real life.

- Lack of spatial awareness in-game in more action-packed sequences in *Battlefield 4* (“Onde é que eu estou?”).
- Frustrated by her lack of experience. Did not find *Battlefield 4* difficult but was occasionally annoyed as she wasn’t able to correctly “position” herself in the game.

### **Participant 3**

#### **General Info:**

**Age:** 18

**Gender:** Female

**Occupation:** Student

**Technological background:** Frequently uses her laptop for schoolwork and leisure and also frequently uses her phone for several purposes. Average digital literacy.

**Experience with games:** Only plays *Animal Crossing* on Nintendo Switch from time to time (around a couple times per week). Does not play anything else, and hasn't played anything else since her childhood.

#### **Questionnaire:**

##### **Questão 1: O que achou de cada um dos jogos?**

Participante 3: Não gostei daquele da carne [*Super Meat Boy*]. Foi mediano, vá.

Investigador: Do segundo jogo, o *Unfair Mario*, o que achaste?

Participante 3: Péssimo, não gostei.

Investigador: Do que é que não gostaste?

Participante 3: De tudo. Não posso pousar em lado nenhum que é armadilha...

Investigador: Terceiro, *Dark Souls 3*...

Participante 3: Gostei!

Investigador: E do último [*Don't Kill the Cow*]?

Participante: É monótono... É-me indiferente. Não gostei nem desgostei, é neutro.

##### **Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 3: Gostei do barulho no *Dark Souls 3* quando matas o inimigo. É satisfatório. A música e os gráficos são engraçados.

Investigador: E no último [*Don't Kill the Cow*], gostaste de algo?

Participante 3: Não. A música só, isso gostei.

**Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 3: Não achei nenhum dos jogos desagradável. Tirando o [*Unfair*] *Mario*, nesse tudo foi desagradável. Aparecem armadilhas em todo o lado. Não posso passar nada à primeira, tenho sempre de estar a repetir tudo.

Investigador: E no *Dark Souls 3*?

Participante 3: Os controlos às vezes enganavam-me. Clicava no quadrado sem querer para atacar e não era aí o botão.

Investigador: E no último [*Don't Kill the Cow*]?

Participante 3: Não gostei das imagens. As imagens metem-me confusão e fazem doer os olhos.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 3: Sim, no primeiro [*Super Meat Boy*] e no [*Unfair*] *Mario*.

Investigador: Consegues explicar porquê?

Participante 3: No primeiro, foi não conseguir saltar de um lado para o outro e de não conseguir passar. No [*Unfair*] *Mario*, foi ter de estar sempre a repetir tudo por causa das armadilhas.

Investigador: Mais alguma frustração nos outros jogos?



Participante 3: Não.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante: O *Dark Souls 3*.

Investigador: Porquê?

Participante 3: Porque tem ação. É mais mexido e os outros são mais parados e monótonos.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 3: Ter que matar aquele bicho grande [stage boss].

Investigador: E isso motivou-te mesmo apesar da dificuldade?

Participante 3: Sim, motivou-me na mesma. E nos outros, não sei...

Investigador: Não sentiste que os outros te motivaram por serem difíceis?

Participante 3: Não, não tinha tanta motivação nesses porque me irritavam. E neste [*Dark Souls 3*] apesar de estar sempre a perder não me desmotivou.

**Additional Notes:**

- Frustrated with *Super Meat Boy*.
- Completed the 15 minutes with the game but there was clear frustration with the game's difficulty. Could not beat certain parts without some help.
- *Unfair Mario* was irritating.
- In *Dark Souls 3*, tried to attack with square button many times, which is the usual button to attack in other action games.

- In *Dark Souls 3*, she said the combat was very satisfactory, although the boss was hard. Asked if there was a map she could check for directions because she was walking in circles.
- Difficulty controlling the camera while doing other actions.
- Some confusion with the control scheme.
- In *Don't Kill the Cow*, she thought the graphics were weird and ugly. However, she said the music was nice.

## Participant 4

### General Info:

**Age:** 25

**Gender:** Female

**Occupation:** Graphic Designer

**Technological background:** Good digital literacy. Knowledgeable with designing tools.

**Experience with games:** Used to play as a kid, but has not played any games since 2011.

### Questionnaire:

#### Questão 1: O que achou de cada um dos jogos?

Participante 4: O primeiro, o do *Street Fighter [V]* gostei imenso porque sempre gostei de jogos de luta. Achei muito fixe. Achei às vezes um bocado difícil de perceber e controlar mas também depois ia ficando cada vez mais difícil jogar. Depois, do segundo [*Every Day The Same Dream*], também gostei. Deu-me muito que pensar. Era fácil de jogar mas era difícil ao mesmo tempo, não sei se percebes o que quero dizer com isso...

Investigador: Sim, sim, eu entendo.

Participante 4: Ok, depois o terceiro [*Resident Evil*]... eu adoro jogos de terror por isso gostei imenso, mas achei super difícil mesmo no modo fácil. Por exemplo, achei estúpido não te poderes safar dos inimigos quando eles te estavam a agarrar. Este aqui [*Phone Story*] pronto, tenho pena de não ter jogado no telemóvel mas mesmo assim achei muito fixe também. Fez-me pensar muito. Eu estava a jogar mas não queria fazer aquilo porque me estava a sentir culpada basicamente.

#### Questão 2: Do que gostou mais em cada um dos jogos?

Participante 4: Acho que nem sequer vou falar do *Resident Evil* aqui... Os que eu mais gostei até foram esses dois mais de crítica [*Every Day The Same Dream; Phone Story*]. No *Resident Evil* não tive tempo para aprofundar muito, mas o *Street Fighter [V]* é aquilo, é porrada. É o que é. Mas os outros dois, o que gostei mais foi mesmo a parte emocional. Foi toda a experiência do jogo e não se era fácil ou difícil. Era fazer-me questionar as coisas. Perceber e rever-me naquilo.

**Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 4: Acho que já respondi um bocadinho a isso mas vou repetir. No *Resident Evil* achei muito estúpido não poder fugir dos zombies quando eles te estavam a matar. E depois imagina, no último não me estava a dar jeito jogar no rato mas também ele foi feito para jogar no telemóvel por isso não conta. Foi desenvolvido para telemóvel e no computador afetou um bocado.

Investigador: E no *Street Fighter V* também já referiste o problema dos controlos...

Participante 4: Sim, os controlos às vezes eram frustrantes. Eu acabava por carregar em tudo à sorte.

Investigador: E no *Resident Evil*, achaste que tiveste problemas nos comandos do jogo? Achaste confuso?

Participante 4: Depois de eu perceber a cena do "aim" e de disparar, até nem achei por aí além confuso. Agora, aquelas câmaras é que eu não estou habituada.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 4: Sim, no *Street Fighter [V]*. E depois naquele segundo dos sonhos [*Every Day The Same Dream*], até me dar o clique... Mas isso era uma frustração porque o objetivo do jogo era mesmo perceberes aquilo. E no *Resident Evil*, é mesmo a coisa de não poderes fugir... Ah, e dos diálogos, que são estúpidos [risos].

Investigador: Então aquilo que achaste desagradável ou que não gostaste foi também aquilo que te frustrou?

Participante 4: Exatamente, é isso.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 4: Embora fique super frustrada e chateada com o *Street Fighter V*, eu jogava facilmente outra vez. Depois, estes dois jogos críticos [*Every Day The Same Dream*; *Phone Story*], acho que não voltaria a jogar porque o jogo é só aquilo...

Investigador: Mas do género, voltarias a jogar?

Participante 4: Do género sim, sem dúvida que voltava a jogar. Todos os que joguei voltava a jogar do género.

Investigador: E o *Street Fighter V*, porque é que voltavas a jogar?

Participante 4: Não sei se é a resposta que procuras para o teu estudo, mas acho que é mesmo por gosto pessoal. Aquela adrenalina de estares ali a carregar nos botões todos e na porrada... Nós, seres humanos, temos qualquer coisa que nos puxa para a violência. O *Street Fighter V* e o *Resident Evil* são jogos mais violentos se pensarmos nisso. Os outros não.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 4: Eu acho que no *Street Fighter [V]* não é motivação para jogar, porque o jogo é porrada e não passa daquilo. Mas o *Resident Evil* eu tinha motivação para continuar a jogar para desvendar e terminar o jogo, porque é um jogo mais de história. Não é só estares ali a jogar.

Investigador: Ou seja, gostarias de saber como é que acaba...

Participante 4: Exatamente. Quero saber... Perdi mas voltava a jogar. Enquanto que no *Street Fighter [V]* aborrecia-me passado um tempo. Jogava mais uma vez e já estava tipo "já chega".

**Additional Notes:**

- Enjoyed *Every Day The Same Dream* quite a bit throughout. Was excited to discover new possibilities in the story.
- However, she was slightly annoyed when she tried something different that led nowhere.

- Comment on *Every Day The Same Dream*: “Sinto-me estúpida por não perceber o que tenho de fazer”.

## Participant 5

### General Info:

**Age:** 55

**Gender:** Female

**Occupation:** Nurse

**Technological background:** Contact with technology limited to phone and computer for basic interactions such as checking emails, watching videos online or making phone calls. Subpar digital media literacy.

**Experience with games:** Has never played a video game before. On rare occasions, she has seen other people play them.

### Questionnaire:

#### Questão 1: O que achou de cada um dos jogos?

Participante 5: Achei que o *Uncharted 4* é aquilo que eu considero um jogo. É o que se aproxima mais da minha visão de um jogo. Quer dizer, foi o que eu gostei de jogar mais. Gostei porque tinha ali uma história. E acabou por me seduzir mais porque queria saber o que vinha a seguir. É o objetivo aliado à história. Quer dizer, tinha de conseguir passar as etapas mas ia sempre acontecendo alguma coisa nova e diferente. Não era só matar monstros ou apanhar armas e matar inimigos.

Investigador: E o que achaste do segundo jogo?

Participante 5: O *Wait...*

Investigador: Sim, o que achaste desse?

Participante 5: Senti que me enervou. Não estava a perceber o objetivo do jogo. Se me dizem que é um jogo, eu vou com a intenção de jogar. Sempre que ia tentar fazer alguma coisa ele para. Estava-me a enervar. Se me disserem que a intenção é relaxar eu olho para aquilo e relaxo. Mas se é um jogo, eu tenho de jogá-lo, mas se começo a jogar e ele para... Ele enerva-me. Como jogo não gostei, achei enervante. Provocou-me stress... Queria andar rápido, queria ver o que é que acontecia e apagava a imagem. Não me estava a deixar fazer o que eu queria.

Investigador: E o terceiro jogo [*DOOM 64*]?

Participante 5: Muito monótono, não gostei. Sempre as mesmas paredes, sempre as mesmas imagens. Fiquei com náuseas para além disso. Obrigava-me a mudar de direção muitas vezes. Sempre as mesmas cores, as mesmas estruturas, os mesmos tons... Não gostei. Sempre a mesma coisa.

Investigador: E no último jogo [*The Graveyard*]?

Participante 5: Este, contrariamente, não parece um jogo mas parece ter um objetivo que encontrei... Se calhar é refletir. No segundo jogo [*Wait*] não relaxei, provoca-me stress porque me parava quando queria andar. Se era esse o objetivo, não o atingiu. Enquanto que este aqui, se o objetivo era reflexão, este sim, conseguiu atingir esse objetivo. Fez-me pensar um bocadinho, apesar de triste. Fez-me pensar que a vida passa, podemos ficar sozinhos, isto é algo rápido... Apesar de achar triste, tem ali qualquer coisa que me fez refletir.

Investigador: Esse jogo [*The Graveyard*] foi descrito pelos criadores como um não-jogo, que vai de encontro àquilo que referes...

Participante 5: Pois. Mas apesar disso tem um objetivo até. Que é refletir. Não vou ganhar nada, nem pontos, mas reflito e tenho um final.

Investigador: E não achas que o *Wait* tenha tido esse efeito também?

Participante 5: Ele fez-me pensar e ter calma, porque ao andarmos muito rápido não vemos nada. Mas enquanto o outro me fez refletir e foi agradável, o *Wait* fez-me refletir mas provocou-me stress. E este [*The Graveyard*] até era melancólico mas fez-me refletir, de uma forma suave e até agradável. O outro não.

## **Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 5: No *Uncharted 4* gostei de ter estória. Não consegui perceber a estória toda mas tinha ali alguma estória interessante.



Investigador: E em termos de controlos, o que achaste?

Participante 5: Gostei... Gostei.

Investigador: E no *The Graveyard*, do que gostaste?

Participante: Gostei porque apesar de ser lento eu tinha controlo. No outro [*Wait*] não podia controlar, mas neste eu é que decidia se andava ou não. Acho que também me deu calma.

**Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 5: O que eu acho desagradável são as paisagens [*DOOM 64*] e assim. Não gostei daquele que me fez enjoar. Sempre as mesmas texturas nas paredes, sempre as mesmas personagens e monstros. Falta diversidade. No *Uncharted 4* já havia mais diversidade, não era sempre o mesmo. No *Uncharted 4* nem me apercebi de algo que não gostasse. E no outro [*Wait*], já referi o que não gostei também: era interromper, não me deixar andar quando eu queria andar.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 5: Daquele que não gostei e que me deu enjoos [*DOOM 64*].

Investigador: Porque é que te frustrou?

Participante 5: Porque não me conseguia movimentar rapidamente. Enquanto que no *Uncharted 4* eu conseguia... Dava-me tempo para eu refletir e subir as paredes e tudo mais, o outro não.

Investigador: Em certas partes no *Uncharted 4* parecias ter dificuldades com os controlos...

Participante 5: Sim, mas isso é da minha memória [fraca]. Mas é verdade também. Mas por outro lado, deu-me gozo ver que estava a fazer asneira. Tu viste-me a dar gargalhadas quando me enganava. Ao mesmo tempo, provoca alguma frustração, mas também é engraçado porque me engano. Apesar de tudo não me causou stress, até me fez rir. Se calhar num jogo de competição com outros ficaria frustrada, mas aqui como estou sozinha não me causou problemas.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 5: Se calhar até gostaria de ver mais dos jogos como o último [*The Graveyard*]. E do *Uncharted* [4]...

Investigador: Gostavas de ver mais como o *Uncharted 4*?

Participante 5: Sim, do *Uncharted 4* sim.

Investigador: Porquê?

Participante: Pela história.

Investigador: E do último [*The Graveyard*], porquê?

Participante 5: Por me dar um momento de reflexão associada à tranquilidade do jogo. Quer dizer, faz-me refletir apesar da lentidão. Faz-me refletir de uma forma agradável.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 5: Motivação tive no último [*The Graveyard*], mas como acabou rápido não deu para jogar mais. Mas se nesse pacote de jogo tivesse mais fragmentos idênticos, ou pontos de reflexão, eu iria continuar. Não com aquela história porque já tinha acabado, mas tinha motivação para ver mais histórias do género. O *Uncharted 4* também continuava a jogar pela história, mas talvez mais o último até. Identifica-se mais com a minha idade e circunstâncias de vida.

Investigador: Talvez pela facilidade de jogar também?

Participante 5: Sim, talvez. Por ser mais simples. Ou pelo tipo de jogo em si. Acho que os jogos deviam aliar mais a reflexão ao jogo [gameplay].

**Additional Notes:**

- Severe difficulty with controls in *Uncharted 4*. Struggles to perform two actions at a time.
- Forgot controls easily.
- In *Uncharted 4*, she tried an alternate route but the game did not allow it. Struggled to find the objective or the correct path.
- Suffered from motion sickness in *DOOM 64*.
- In *DOOM 64*, there were severe difficulties in walking and aiming at the same time. Usually only performed one action or the other separately.
- Was not enjoying *Wait* because it was too slow and there was little gameplay happening (“Então eu é que estou à espera do jogo!”).
- Was startled by enemies in *DOOM 64*. Thought the game was too hard and complicated.
- Had to stop playing *DOOM 64* midway due to motion sickness.

## **Participant 6**

### **General Info:**

**Age:** 26

**Gender:** Male

**Occupation:** Designer

**Technological Background:** Good digital literacy. Knowledgeable with design tools.

**Experience with games:** Has not played games in 6 months. Started playing during the pandemic on social contexts (with friends). Understands how games are played, but is not experienced in them.

### **Questionnaire:**

#### **Questão 1: O que achou de cada um dos jogos?**

Participante 6: Foram todos de exploração, por isso é sempre bom para mim que gosto de explorar, divertir-me, e perceber as coisas pouco a pouco, peça a peça...

Investigador: Tirando aquele que demorou um minuto [*You Have to Burn the Rope*]...

Participante 6: Sim.

#### **Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 6: O sentido de incerteza... Em todos eles houve aquela incerteza sobre o que é que ia acontecer... Se havia um inimigo, se não havia, o que é que poderia acontecer. Em todos eles eu não sabia a estória, tirando o *Don't Starve* com o qual já estava mais familiarizado. Mas em todos eles havia aquela incerteza.

#### **Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 6: Os loadings... Demoram demasiado tempo e já existem opções para evitar loadings demorados apesar de eles serem todos antigos...

Investigador: Certo. O meu hardware também não permite mais do que isto, infelizmente...

Participante 6: Pois [risos].

Investigador: Fora isso, mais alguma coisa?

Participante 6: Acho que não jogaria novamente aquele que resolvi num instante [*You Have to Burn the Rope*]. Percebi a mensagem mas acho que era jogo de "uma vez e está feito".

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 6: No primeiro [*This War Of Mine*], era descer e subir escadas, sendo que tive dificuldade aí. No *Don't Starve*, era uma questão de não encontrar as coisas, mas aí não se pode fazer nada porque é "open world". É essa a dificuldade. Mas dificuldades técnicas só mesmo no primeiro jogo. Por causa da perspectiva.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 6: Sim, sim, sem dúvida.

Investigador: Quais é que jogavas?

Participante 6: O *Don't Starve*.

Investigador: Por causa da exploração?

Participante 6: Sim. E se calhar o primeiro também. Só ao fim de 8 a 10 minutos é que percebi a dinâmica das personagens e o que é que cada uma fazia.

Investigador: Precisavas de mais tempo no jogo?

Participante 6: Sim.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 6: Querer chegar mais longe, só.

Investigador: Só chegar mais longe?

Participante 6: Sim, só tentar perceber até onde haveria história, ou até onde aquilo já se tornava repetitivo. Porque havia muitos caminhos por onde me meter. Acho que é isso.

**Additional Notes:**

(no additional notes for this gaming session).

## Participant 7

### General Info:

**Age:** 52

**Gender:** Female

**Occupation:** Civil Servant (Technical Assistant)

**Technological background:** Uses a computer daily, but mostly for work. Uses a smartphone, but for simpler tasks.

**Experience with games:** Has never played a game before.

### Questionnaires:

#### Questão 1: O que achou de cada um dos jogos?

Participante 7: Para mim, o primeiro [*Downwell*] foi um bocadinho difícil para os olhos também... Faz-me confusão. Também se calhar é por ter alguns problemas de visão mas para mim é um bocadinho complicado. E é as mãos também... Começam a doer porque jogo um bocado e começam-me logo os dedos a doer. É um jogo que não conseguia jogar muito tempo. Era jogar um bocadinho, mas mais que isto se calhar não...

Investigador: Porque requer reflexos muito rápidos?

Participante 7: É, reflexos das mãos mesmo.

Investigador: Segundo jogo, *Baba Is You*.

Participante 7: É assim, achei um bocadinho monótono. Para mim, tive dificuldade em ler o que está lá escrito...

Investigador: Por ser pixelado?

Participante 7: É, e acho que as cores também não são as melhores. Pelo menos para mim, na minha opinião, causa-me alguma dificuldade... Faz um bocado de confusão estar a jogar aquilo.

Investigador: Certo, e o *Thumper*?

Participante 7: Este aqui é interessante e divertido, mas também quando começa a ficar muito rápido para mim, o meu problema maior é sempre a visão... Porque este jogo até é divertido, é interessante... De todos os jogos até foi o que eu gostei mais. Mas quando fica muito rápido começa a fazer confusão. A visão já não consegue acompanhar. Tem muita coisa a acontecer. Mas é engraçado, este até foi dos que gostei mais. Se calhar porque eu não gosto de coisas muito paradas, e este aqui também põe um bocado à prova os reflexos. Aqui tu tens que ter mesmo muitos reflexos. Estás a jogar mas ele é muito rápido e os teus reflexos tem de ser muito rápidos também. Se calhar até foi isso que fez com que gostasse mais deste jogo. Foi um teste para mim.

Investigador: É desafiante, mas também não tanto que perdesse a vontade de jogar?

Participante 7: É. Quando estamos a fazer alguma coisa, tem que gerar interesse. E se sentirmos que estamos a ser testados, temos aquela vontade de continuar. Se tivesse de escolher dos quatro, era este que escolhia continuar a jogar. Mesmo em termos de cores e apesar do ecrã ser muito cheio, este foi o que gostei mais.

Investigador: Certo, e no último jogo [*Passage*]?

Participante 7: É assim, ele está a contar uma história, não é?, está a ensinar alguma coisa, não é? E aqui eu acho que a moral da história é que a vida é muito curta. Ensina-nos alguma coisa... Mas é um bocadinho monótono e as cores não cativam. Tens de te esforçar muito para conseguir ver e perceber o que é que está a aparecer no ecrã. Em termos de contar uma história sim, está a ensinar alguma coisa e a passar alguma coisa de positivo para as pessoas, mas em termos de ecrã, de cores, acho que não.... Pelo menos eu tenho de forçar muito para conseguir ver. Não é muito nítido.

Investigador: Então é o mesmo problema que tiveste no segundo jogo [*Baba Is You*]?

Participante 7: É. Porque eu acho que até em termos de jogos é assim, acho muito melhor que aqueles jogos de tiros que é sempre violência, porque estes jogos ensinam sempre alguma coisa. O problema é que não cativam. Deviam cativar mais um bocadinho. Quando uma pessoa está a ver, a imagem que está a passar devia cativar um bocado.



Investigador: Então achas que a estória é boa mas também é preciso de ter visuais bons a acompanhar?

Participante 7: Sim, sim. Acho que sim. Acho que este jogo perde muito aí. Porque estes jogos até podem contar muitas estórias e é bom não é? Mas se calhar a gente ao olhar para ali [*Passage*] perde a vontade porque tens de olhar muito para conseguir perceber. Se não estiveres muito atento as coisas passam e nem consegues apanhá-las. Não sei se expliquei bem...

Investigador: Sim, sim, compreendo perfeitamente.

### **Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 7: O primeiro [*Downwell*] para mim, eu acho engraçado porque é divertido tu estares ali a saltar e a tentar destruir aqueles obstáculos que vão aparecendo. Em termos de ser divertido, é. O segundo [*Baba Is You*], foi o que eu te disse. Achei mais monótono. E também como não conseguia ler bem as frases, aquilo desmotiva. Se não consegues perceber bem as coisas perdes a vontade. O terceiro foi o...

Investigador: O *Thumper*...

Participante 7: Este foi o quarto, não foi?

Investigador: Não, o quarto foi o *Passage*.

Participante 7: Ah, pronto. O quarto eu já te disse, acho interessante porque conta a estória mas em termos visuais não se percebe nada, não é muito chamativa. O terceiro foi o que gostei mais por testar e desafiar a nossa capacidade de... não é de concentração mas de... reflexos! Mas eu também já sou velha, e mais para o fim é muito rápido para os meus olhos. Mas é assim, no quarto se a imagem fosse boa se calhar também o escolhia. Mas este [*Thumper*] em termos de cores e chamariz é muito melhor.

### **Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 7: Acho que até já respondi a isso nas questões anteriores.

Investigador: Sim, se não tiveres nada a acrescentar não é preciso repetir.

Participante: Não, acho que não. Nada a acrescentar.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 7: Não, não. Por causa de ser complicado não. Não me estava a frustrar. É assim, também é a primeira vez que estou a jogar e eu sei que depois se jogar mais, com a experiência consigo adaptar-me. Não vou dizer que fiquei frustrada com nenhum. É mesmo uma questão de gostar ou não gostar e do que achei de cada um, do que tinham de melhor e de pior. E acho que a imagem conta muito. É assim, as pessoas que jogam mesmo perdem muitas horas nisto e acho que se a imagem do ecrã for má cansa-te a vista e tens que forçar a vista para perceber o que lá está. Acho que isso não é bom, porque chega a um ponto em que a gente já não quer jogar. Os jogos normalmente são para te divertires um pouco, e em jogos assim acho que acabas por não te divertir porque ficas cansado. O segundo [*Baba Is You*] e o quarto [*Passage*] já me cansava com eles, o primeiro [*Downwell*] ainda vá que não vá. Nesse ainda se podia jogar um bocadito. O terceiro [*Thumper*] foi em todos os sentidos aquele que me cansou menos.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 7: É como disse, o terceiro [*Thumper*] porque está a testar os meus reflexos e isso é positivo. Acho que os jogos tem de ter algo de positivo para as pessoas.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 7: Se tivesse de escolher outro sem ser o terceiro [*Thumper*], era o da mensagem [*Passage*]. Mas não escolhia porque a imagem não cativa. A mensagem é boa, mas a imagem não cativa mesmo.

### **Additional Notes:**

- Comment in *Downwell*: “Ele anda mais rápido que eu...”.
- When she died multiple times, she commented “Outra vez”.
- She mentioned some pain in her hands after playing for 10 minutes in *Downwell*.
- Difficulty in understanding the game logic in *Baba Is You*.
- Difficulty in understanding things in pixelated games.
- In *Passage*, got tired from the visuals.
- Comment in *Passage*: “É tudo muito parecido e difícil de distinguir”.
- *Passage* was too monotonous.
- Could not understand what happened in *Passage* because of the colour palette and the pixelated style (for example, she missed that one of the characters had died along the way).

## Participant 8

### General Info:

**Age:** 24

**Gender:** Female

**Occupation:** Operator in training

**Technological background:** Uses a personal computer and smartphone with ease. Decent digital literacy.

**Experience with games:** Plays *The Sims*, but very rarely. Would rather watch videos of other people playing games than playing them herself. Little experience with games.

### Questionnaire:

#### Questão 1: O que achou de cada um dos jogos?

Participante 8: O primeiro [*Superhot*] é mais ou menos. O segundo [*Syobon Action*] foi muito irritante porque parece fácil e não é nada fácil. E depois o do carro [*ONRUSH*] é muito legal. E depois desse último [*The Best Amendment*] não entendi foi nada. Tipo, tinha que pegar nas estrelas mas tinha de matar o povo... Muito difícil para mim.

Investigador: Não percebeste qual era o sentido ou objetivo do jogo?

Participante 8: Sim.

#### Questão 2: Do que gostou mais em cada um dos jogos?

Participante 8: Nesse aí [*Superhot*] gostei de atirar a arma à pessoa. Achei incrível.

Investigador: E no segundo [*Syobon Action*]?

Participante 8: Desse aí eu não gostei.

Investigador: Pois, eu percebi. Mas ainda deu para te rires com o jogo!

Participante 8: Sim. Eu fiquei com menos 48 vidas! Aquilo não fazia sentido nenhum...

Investigador: Terceiro jogo, o de carros [*ONRUSH*]...

Participante 8: Ah, o do carro foi muito bom. Gostei.

Investigador: Do que é que gostaste?

Participante 8: De tudo! O do carro é muito bom...

Investigador: E o último [*The Best Amendment*], alguma coisa que gostaste?

Participante 8: Sinceramente achei desnecessário. Não percebo porque é que existe...

**Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 8: No jogo do Mario falsificado [*Syobon Action*], ele é muito ruim porque parece fácil e aí começa a jogar e morre, morre, morre, e nunca mais passa de nível...

Investigador: E no último [*The Best Amendment*]? Claramente não gostaste, mas do que é que não gostaste?

Participante 8: O jogo simplesmente não faz sentido nenhum. Pode fazer sentido para o povo lá de fora, mas para mim não faz sentido nenhum.

Investigador: Certo. E no primeiro [*Superhot*], o que é que não gostaste?

Participante 8: Achei muito difícil.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 8: O do Mario [*Syobon Action*], ele foi muito frustrante...

Investigador: Consegues desenvolver? Porque é que foi frustrante para ti?

Participante 8: Porque não conseguia passar de nível.

Investigador: Não conseguias passar por ser difícil?

Participante 8: Não, é por ser um jogo estúpido mesmo. Aparecem coisas do nada que você não espera. E depois algumas vezes aparecia e outras vezes não aparecia. Então assim eu achava que não ia aparecer e morria. Por isso não gostei...

Investigador: Fora isso, mais alguma coisa?

Participante 8: Não... Só no jogo do homem [*Superhot*] também, por ser difícil. Não conseguia matar ninguém, nem passar de nível.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 8: Sim, o do carro [*ONRUSH*].

Investigador: Consegues desenvolver porquê?

Participante 8: Porque naquele você pode fazer o que quiser. Você só sai correndo ali e aí apertando os botões e estou sempre ganhando.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 8: Vou falar uma coisa. Eu gostei muito do do carro [*ONRUSH*] mas se jogasse esse mais uma semana seguida, depois eu deixava de jogar durante muito tempo. Só depois, para aí passado um ano, quando me lembrasse do jogo é que voltaria a jogar. Aí, eu jogava mais uma semana e depois pararia de novo...

Investigador: Porque é que farias essas pausas longas?

Participante 8: Porque eu enjoou muito dos jogos. Tipo, eu comprei o *Animal Crossing* na Nintendo Switch e acabei por só jogar aquilo cinco vezes porque me fartei.

**Additional Notes:**

- Thought *Syobon Action* was very stressful.
- Laughed at her own mistakes in *Superhot*.
- Laughed at some of the traps in *Syobon Action*.
- Enjoyed playing *ONRUSH*.
- On *The Best Amendment*, commented: “Não consigo andar muito rápido”.
- Skipped *The Best Amendment* at 6 minutes.

## Participant 9

### General Info:

**Age:** 57

**Gender:** Male

**Occupation:** Automotive Mechanic

**Technological background:** Makes some use of the computer at work for simple tasks. Knows how to use a smartphone for basic interactions but is not sure of all the actions it can perform.

**Experience with games:** Has never played a video game before.

### Questionnaire:

#### Questão 1: O que achou de cada um dos jogos?

Participante 9: Aquele do boneco [*The Binding of Isaac: Rebirth*] eu achei engraçado.

Investigador: Achaste engraçado?

Participante 9: Achei, achei engraçado... É engraçado, é divertido.

Investigador: Segundo jogo [*Faith Fighter*]?

Participante 9: O segundo é aquele da pancada dos deuses? É um bocado bruto [risos]. Pronto, é um jogo mas não gostei muito dos deuses à pancada.

Investigador: E do terceiro jogo [*DiRT 4*], o que achaste?

Participante 9: O dos carros eu gosto. Eu trabalho com carros, claro que gosto de carros. Mas não tenho muita paciência para estar ali a olhar para aquilo... Cansa-me, cansa-me e enerva-me... Não tenho paciência.

Investigador: E este último jogo [*Escape*]? Aquele mais curto.

Participante 9: Não sei... Foi engraçado. Ainda me deu um bocado para pensar... Mas foi engraçado.



**Questão 2: Do que gostou mais em cada um dos jogos?**

Participante 9: O jogo do boneco [*The Binding of Isaac: Rebirth*] achei divertido, sei lá porquê... Era o boneco a levar porrada e a fazer aqueles gemidos engraçados...

Investigador: Achaste o som engraçado?

Participante 9: Sim.

Investigador: E o jogo em si? As mecânicas do jogo e a forma como o jogo é jogado. O que achaste disso?

Participante 9: Gostei, gostei... Mas do segundo [*Faith Fighter*] não gostei.

Investigador: E no terceiro [*DiRT 4*], alguma coisa que gostasses?

Participante 9: O Subaru! [risos]... Ronca bem!

Investigador: Gostaste do som dos carros?

Participante 9: Sim, gostei bem.

Investigador: E no último [*Escape*], gostaste de alguma coisa?

Participante 9: O do puzzle? É assim, é interessante descobrir a forma como se sai dali do poço. Mas pronto, eu também já vou mexendo no computador e vi logo que o "escape" tinha de ser logo uma tecla.

**Questão 3: O que achou menos interessante ou desagradável em cada um dos jogos?**

Participante 9: No do boneco [*The Binding of Isaac: Rebirth*] gostei de tudo.

Investigador: E no dos deuses [*Faith Fighter*], porque é que não gostaste?

Participante 9: Não sei, não gosto de pancada. Não gosto de jogos violentos.

Investigador: E no dos carros [*DiRT 4*], alguma coisa que não gostasses?

Participante 9: Não gostei da forma de conduzir, é difícil... A forma de conduzir é mesmo difícil. Para quem está habituado a conduzir num volante, conduzir num botão [joystick] não é muito prático. É preciso de ter muitas horas de prática e eu não tenho.

**Questão 4: Sentiu dificuldades ou frustrações em algum dos jogos que jogou? Se sim, desenvolva sobre as mesmas.**

Participante 9: No primeiro [*The Binding of Isaac: Rebirth*], não. Nesse não tive assim grande dificuldade. No segundo [*Faith Fighter*] também não tive assim grande dificuldade... Controla-se bem o jogo... Mas no terceiro [*DiRT 4*] é que achei difícil controlar. Muito difícil. Os controlos do jogo são muito difíceis.

Investigador: No último [*Escape*], nada a apontar?

Participante 9: Não.

**Questão 5: Se tivesse a oportunidade, gostaria de jogar mais de algum dos jogos que jogou aqui (ou jogos do mesmo tipo)? Se sim, porquê?**

Participante 9: Não fiquei fã.

Investigador: Consegues explicar porquê?

Participante 9: É assim, são coisas que nunca me despertaram interesse. Também não fui habituado a jogar e por isso foram coisas que nunca despertaram interesse... Nem despertam. Não consigo ter paciência para estas coisas.

**Questão 6: Em que jogo ou instâncias nesse jogo se sentiu mais motivado(a) para continuar a jogar?**

Participante 9: É como disse, não senti motivação para voltar a jogar nada mesmo.

**Additional Notes:**

- Difficulty with controls in *The Binding of Isaac: Rebirth*. Could not move and shoot at the same time. Took some time to understand that you could shoot in any direction.
- Difficulty in picking up objects from the ground and in understanding what items could be destroyed or picked up in *The Binding of Isaac: Rebirth*.
- Laughed when he killed the enemies.
- Comment at the end of the experience: “Não tenho paciência para jogar”.
- In *DiRT 4*, commented “Isto é difícil”.
- Started laughing when he made mistakes (for example when the car overturned or went off track in *DiRT 4*).
- Severe difficulty in steering the car in *DiRT 4*.

## Appendix B1: Design Canvas for the workshop (Portuguese version)

<b>Título do Jogo:</b>		
<b>Tema / Crítica:</b> <i>Qual o tema do jogo? O que é que pretende criticar?</i>	<b>Contexto / Cenário:</b> <i>Qual é a premissa do jogo?</i>	<b>Objetivo(s):</b> <i>Quais os objetivos a atingir no jogo?</i>
<b>Mecânicas de jogo / Ações:</b> <i>Quais são as mecânicas do jogo? Que ações é que podemos realizar para chegar ao objetivo?</i>		<b>Regras:</b> <i>Quais são as regras do jogo?</i>

Figure B.1: Portuguese version of the GDC used in the workshops.

## Appendix B2: Card set for the workshop activity

<p style="text-align: center;">1</p> <p style="text-align: center;"><b>Não pode ser fatigante</b></p> <p style="text-align: center;">(Must not be tiresome)</p>	<p style="text-align: center;">2</p> <p style="text-align: center;"><b>Variedade de possibilidades para o jogador</b></p> <p style="text-align: center;">(Freedom of possibilities for the player)</p>	<p style="text-align: center;">3</p> <p style="text-align: center;"><b>O jogador pode explorar o jogo ao seu próprio ritmo</b></p> <p style="text-align: center;">(Exploring at one's own pace)</p>
<p style="text-align: center;">4</p> <p style="text-align: center;"><b>Deve ter longevidade / Não ter duração muito curta</b></p> <p style="text-align: center;">(Must not be too short / have some longevity)</p>	<p style="text-align: center;">5</p> <p style="text-align: center;"><b>Com foco na história ou narrativa</b></p> <p style="text-align: center;">(Narrative or story-driven games)</p>	<p style="text-align: center;">6</p> <p style="text-align: center;"><b>Com semelhanças a situações reais</b></p> <p style="text-align: center;">(Similarities to real life matters / issues)</p>
<p style="text-align: center;">7</p> <p style="text-align: center;"><b>Comparável a situações atuais da vida pessoal do jogador</b></p> <p style="text-align: center;">(Drawing comparison to current life situations)</p>	<p style="text-align: center;">8</p> <p style="text-align: center;"><b>Agência na narrativa</b></p> <p style="text-align: center;">(Agency in the narrative)</p>	<p style="text-align: center;">9</p> <p style="text-align: center;"><b>Desafiante, mas não em demasia</b></p> <p style="text-align: center;">(Challenging, but not too challenging)</p>

<p style="text-align: center;">10</p> <p style="text-align: center;"><b>Tolerância de erros</b></p> <p style="text-align: center;">(Forgiving gameplay)</p>	<p style="text-align: center;">11</p> <p style="text-align: center;"><b>Re-jogável</b></p> <p style="text-align: center;">(Replayability)</p>	<p style="text-align: center;">12</p> <p style="text-align: center;"><b>Não pode ser um jogo repetitivo</b></p> <p style="text-align: center;">(Must not have a repetitive gameplay loop)</p>
<p style="text-align: center;">13</p> <p style="text-align: center;"><b>Deve possuir mecânicas de jogo simples</b></p> <p style="text-align: center;">(Must not have confusing game mechanics)</p>	<p style="text-align: center;">14</p> <p style="text-align: center;"><b>Não pode ser muito monótono / lento</b></p> <p style="text-align: center;">(Must not be very slow-paced)</p>	<p style="text-align: center;">15</p> <p style="text-align: center;"><b>Não pode ser muito difícil</b></p> <p style="text-align: center;">(Must not be too difficult)</p>
<p style="text-align: center;">16</p> <p style="text-align: center;"><b>Não pode ter uma curva de aprendizagem muito grande</b></p> <p style="text-align: center;">(Must not take a long time to learn)</p>	<p style="text-align: center;">17</p> <p style="text-align: center;"><b>Não pode ser muito rápido</b></p> <p style="text-align: center;">(Must not be too fast-paced)</p>	<p style="text-align: center;">18</p> <p style="text-align: center;"><b>Divertido, mesmo que seja desafiante em partes</b></p> <p style="text-align: center;">(Fun, even if a bit challenging)</p>

<p>19</p> <p><b>O conceito do jogo deve ser simples e explícito</b></p> <p>(Game concept must be simple and explicit)</p>		<p>00</p> <p><b>Sample Card Sample Card Sample Card</b></p> <p>(Sample Card)</p>
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**Figure B.2:** Full set of imposition cards.

<p>I</p> <p><b>Deve suscitar reflexão crítica</b></p> <p>(Must prompt critical reflection)</p>	<p>II</p> <p><b>Deve apresentar uma crítica a algo</b></p> <p>(Must critique something)</p>	<p>III</p> <p><b>Deve ter jogabilidade com significado</b></p> <p>(Must have meaningful gameplay)</p>
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**Figure B.3:** Full set of obligation cards.

## Appendix B3: GDCs and cards used

### GDC 1 (Participants 1 & 2)

<p><b>Título do Jogo:</b> Palestina</p>		
<p><b>Tema / Crítica:</b> <i>Qual o tema do jogo? O que é que pretende criticar?</i></p> <p>Conflito assimétrico entre Israel-Palestina.</p>	<p><b>Contexto / Cenário:</b> <i>Qual é a premissa do jogo?</i></p> <p>O jogador controla o estado de Israel no conflito contra a Palestina, controlando aspectos militares e de propaganda.</p>	<p><b>Objetivo(s):</b> <i>Quais os objetivos a atingir no jogo?</i></p> <p>Ocupar completamente a Palestina, sem que o nível de Opinião Pública caia abaixo de um certo valor.</p>
<p><b>Mecânicas de jogo / Ações:</b> <i>Quais são as mecânicas do jogo? Que ações é que podemos realizar para chegar ao objetivo?</i></p> <p>O jogo tem duas etapas que alternam entre si.</p> <p>Fase Militar: O jogador toma decisões estratégicas para aumentar a sua percentagem de controlo sobre o território palestiniano. Estas escolhas teriam repercussões em termos de Opinião Pública.</p> <p>Fase Propaganda: O jogador controlaria a propaganda em relação ao conflito, tentando manipular favoravelmente o nível de Opinião Pública, de forma a poder continuar com os seus objetivos de controlo militar.</p>		<p><b>Regras:</b> <i>Quais são as regras do jogo?</i></p> <p>O jogador perde Opinião Pública quando mata civis durante a Fase Militar.</p> <p>O jogador recupera Opinião Pública através de boas escolhas durante a Fase Propaganda.</p> <p>Se a opinião pública cair abaixo de um certo nível, o jogador perde.</p> <p>Se o jogador conseguir controlar o território a 100%, o jogador ganha.</p>

**Figure B.4:** Game Design Canvas 1 (Portuguese version).



**Cards used for GDC 1:**

**Obligatory cards / Cartas de obrigação:**

- Deve suscitar reflexão crítica (I)
- Deve apresentar uma crítica a algo (II)
- Deve ter jogabilidade com significado (III)

**Imposition cards / Cartas de imposição:**

- Deve ter longevidade / Não ter duração muito curta (4)
- Tolerância de erros (10)
- Não pode ser muito difícil (15)

**Time to complete the GDC: 16 minutes**

## GDC 2 (Participants 1 & 2)

<p><b>Título do Jogo:</b> 2020 Vision</p>		
<p><b>Tema / Crítica:</b>  <i>Qual o tema do jogo? O que é que pretende criticar?</i></p> <p>Vida em quarentena.  Repercussões que a quarentena tem na vida do indivíduo.</p>	<p><b>Contexto / Cenário:</b>  <i>Qual é a premissa do jogo?</i></p> <p>O jogador escolhe entre diferentes atividades para desenvolver durante a quarentena. Essa escolha tem repercussões em diferentes aspectos da vida da personagem.</p>	<p><b>Objetivo(s):</b>  <i>Quais os objetivos a atingir no jogo?</i></p> <p>Chegar ao fim da quarentena.</p>
<p><b>Mecânicas de jogo / Ações:</b>  <i>Quais são as mecânicas do jogo? Que ações é que podemos realizar para chegar ao objetivo?</i></p> <p>Variiedade de minijogos dependentes da atividade a ser feita. Cada uma destas atividades afetaria o nível de uma ou mais das seguintes categorias:</p> <p>Saúde Física, Criatividade, Auto-estima, Necessidades Sociais, Desempenho no Trabalho</p> <p>Exemplo: Fazer horas extra. Minijogo: assinar documentos.</p> <p>++ Desempenho no trabalho</p> <p>-- Saúde mental</p>		<p><b>Regras:</b>  <i>Quais são as regras do jogo?</i></p> <p>Caso o jogador deixe que o nível de uma das categorias chegue a 0, o jogo termina.</p> <p>No final da quarentena, dependendo do nível de cada uma das categorias, o jogador teria um final diferente.</p>

**Figure B.5:** Game Design Canvas 2 (Portuguese version).

**Cards used for GDC 2:**

**Obligatory cards / Cartas de obrigação:**

- Deve suscitar reflexão crítica (I)
- Deve apresentar uma crítica a algo (II)
- Deve ter jogabilidade com significado (III)

**Imposition cards / Cartas de imposição:**

- Variedade de possibilidades para o jogador (2)
- Não pode ser muito monótono / lento (14)
- Mecânicas de jogo simples (13)
- Re-jogável (11)

**Time to complete the GDC:** 18 minutes

### GDC 3 (Participants 5 & 7)

<p><b>Título do Jogo:</b> Ninguém quer envelhecer!</p>		
<p><b>Tema / Crítica:</b> <i>Qual o tema do jogo? O que é que pretende criticar?</i></p> <p>Valores da família, valorização dos mais velhos. Sensibilizar os jovens quanto ao envelhecimento dentro da família.</p>	<p><b>Contexto / Cenário:</b> <i>Qual é a premissa do jogo?</i></p> <p>O jogo pode tomar lugar nas residências dos próprios velhinhos. No jardim, hortas, consultas médicas, supermercado, deslocações (transporte público)...</p>	<p><b>Objetivo(s):</b> <i>Quais os objetivos a atingir no jogo?</i></p> <p>Cumprir atividades de um idoso num dia inteiro. Com desafios ligados a cada ambiente e a uma lista de tarefas.</p> <p>Exemplos:</p> <p>Jardim - subir uma rampa</p> <p>Metro - muito cheio, aflição, difícil para se movimentar / dificuldade em perceber os destinos.</p>
<p><b>Mecânicas de jogo / Ações:</b> <i>Quais são as mecânicas do jogo? Que ações é que podemos realizar para chegar ao objetivo?</i></p> <p>Acordar - caminhar com avatar, haver dificuldade (atrasar o movimento, feedback), temporizador da bexiga (xixi) para se deslocar até à casa de banho.</p> <p>Pequeno-almoço - dificuldade em ler as embalagens (blur na visão), leite a ferver e dificuldade em controlar tudo.</p> <p>Pode pedir ajuda a outros NPCs mais novos, mas não se sabe se vão responder ao pedido de ajuda.</p>		<p><b>Regras:</b> <i>Quais são as regras do jogo?</i></p> <p>Personalizar o avatar (nome e género) avatar se apresenta e revela a idade.</p> <p>Precisa concluir todas as tarefas com êxito.</p> <p>Caso não consiga cumprir uma tarefa não passa para a próxima fase.</p>

**Figure B.6:** Game Design Canvas 3 (Portuguese version).

**Cards used for GDC 3:**

**Obligatory cards / Cartas de obrigação:**

- Deve suscitar reflexão crítica (I)
- Deve apresentar uma crítica a algo (II)
- Deve ter jogabilidade com significado (III)

**Imposition cards / Cartas de imposição:**

- Não pode ser muito difícil (15)
- Desafiante, mas não em demasia (9)
- Não pode ser um jogo repetitivo (12)

**Time to complete the GDC:** 16 minutes

## GDC 4 (Participants 5 & 7)

<p><b>Título do Jogo:</b> As minhas férias perfeitas!</p>		
<p><b>Tema / Crítica:</b> <i>Qual o tema do jogo? O que é que pretende criticar?</i></p> <p>Planear as férias. Dificuldades de comprar e pesquisar voos e hotéis. Questões de segurança na net para planear. Malas se perdem. Cronograma da viagem.</p>	<p><b>Contexto / Cenário:</b> <i>Qual é a premissa do jogo?</i></p> <p>Simular o plano de viagem (seleccionar quantidade de pessoas, dinheiro disponível, país e locais a visitar), checklist de uma agência de viagens. Viagem no papel digital.</p>	<p><b>Objetivo(s):</b> <i>Quais os objetivos a atingir no jogo?</i></p> <p>Conseguir concluir a viagem com êxito.</p> <p>Conforme o país, detalhar os locais a visitar. Conhecer os perigos. Cuidados a ter.</p>
<p><b>Mecânicas de jogo / Ações:</b> <i>Quais são as mecânicas do jogo? Que ações é que podemos realizar para chegar ao objetivo?</i></p> <p>Plano - checklist de viagem dos sonhos (plataforma de uma agência). Acarretar um valor. Colocar no fim da lista.</p> <p>Tempo simulado (como no <i>The Sims</i>), faz todas as tarefas, pode tomar decisões e alterar. No final do dia é apresentada a conta a pagar.</p> <p>Desafios de alimentação e higiene, problemas sanitários. Médicos (consulta do viajante)</p>		<p><b>Regras:</b> <i>Quais são as regras do jogo?</i></p> <p>Criar o plano e experimentar o que planeou. Pode desviar do plano, com outras propostas.</p> <p>Penalizações. Exemplo: vai ao museu mas já está fechado porque gastou tempo demais noutra atividade; Custos extra...</p> <p>Bonificações - tour grátis, milhas para compra de produtos.</p>

**Figure B.7:** Game Design Canvas 4 (Portuguese version).

**Cards used for GDC 4:**

**Obligatory cards / Cartas de obrigação:**

- Deve suscitar reflexão crítica (I)
- Deve apresentar uma crítica a algo (II)
- Deve ter jogabilidade com significado (III)

**Imposition cards / Cartas de imposição:**

- O conceito do jogo deve ser simples e explícito (19)
- Com foco na história ou narrativa (5)
- Tolerância de erros (10)
- Deve ter longevidade / Não ter duração muito curta (4)

**Time to complete the GDC:** 18 minutes

## Appendix C: Qualitative content analyses for the workshops

### GDC 1

Table C.1: Qualitative content analysis of GDC 1.

Meaningful unit of text	Condensed meaning unit	Code	Sub-category	Category
“O jogador controla o estado de Israel no conflito contra a Palestina, controlando aspectos militares e de propaganda.”	Controlling Israel's military and propaganda in a conflict.	Being in control	Control	Game mechanics
	Commandeering Israel on the war against Palestine.	Critiquing a current conflict	Caring about current world issues	Sociocultural critique / Age group
“Se a opinião pública cair abaixo de um certo nível, o jogador perde. Se o jogador conseguir controlar o território a 100%, o jogador ganha.”	Loses if Public Opinion is too low, wins if all enemy territory is conquered.	Gameplay based on real life actions and consequences	Similarities to real life	Sociocultural critique
		Simple and easy to understand gameplay mechanics	Uncomplicated gameplay loop	Gameplay mechanics
“O jogador perde Opinião Pública quando mata civis... O jogador recupera Opinião Pública através de boas escolhas durante a Fase Propaganda.”	Killing civilians is bad for Public Opinion, but there are still ways to get Public Opinion back.	Having moral choices in the game	Repercussions of actions	Sociocultural critique / Gameplay Mechanics
“O jogador toma decisões estratégicas para aumentar(...) controlo sobre o território palestino (...) repercussões em termos de Opinião Pública.”	Players' decisions on how to conquer territory have an impact on Public Opinion.	Meaningful gameplay	Repercussions of actions	Sociocultural critique / Gameplay Mechanics
“O jogador controlaria a propaganda em relação ao conflito, tentando manipular favoravelmente o nível de Opinião Pública...”	Players can manipulate propaganda to their benefit.	Being in control / Manipulation	Control	Gameplay Mechanics



## GDC 2

**Table C.2:** Qualitative content analysis of GDC 2.

Meaningful unit of text	Condensed meaning unit	Code	Sub-category	Category
"Repercussões que a quarentena tem na vida do indivíduo."	Repercussions of life in quarantine.	Critiquing a current life situation	Drawing comparison to current routine	Sociocultural critique / Age group
		Repercussions of life situations	Drawing comparison of to current routine	Sociocultural critique
"O jogador escolhe entre diferentes atividades para desenvolver durante a quarentena"	Players can choose any activity.	Freedom of choice	Possibilities	Gameplay Mechanics
"(...) escolha(s) tem repercussões em diferentes aspectos da vida da personagem."	Each choice impacts the character differently.	Meaningful gameplay	Repercussions of actions	Sociocultural critique / Gameplay Mechanics
"Variedade de minijogos dependentes da atividade a ser feita."	Each activity has its own minigames.	Gameplay variety	Variety	Gameplay Mechanics
"Cada uma destas atividades afetaria o nível de uma ou mais (...) categorias."	Each activity affects a player's status.	Meaningful gameplay	Repercussions of actions	Gameplay Mechanics
"Caso o jogador deixe que o nível de uma das categorias chegue a 0, o jogo termina."	If any player status reaches 0, the game ends.	Simple and easy to understand mechanics	Uncomplicated gameplay loop	Gameplay mechanics
"(...) dependendo do nível de cada uma das categorias, o jogador teria um final diferente."	Different actions lead to different endings.	Different endings	Repercussion of actions	Sociocultural critique
			Possibilities	Gameplay mechanics

## GDC 3

**Table C.3:** Qualitative content analysis of GDC 3.

Meaningful unit of text	Condensed meaning unit	Code	Sub-category	Category
“Valores da família, valorização dos mais velhos. Sensibilizar os jovens quanto ao envelhecimento dentro da família.”	Alert younger individuals about family values and appreciation of the elderly.	Critiquing a current social problem	Drawing comparison to current routine	Sociocultural critique / Age group
“Cumprir atividades de um idoso num dia inteiro. Com desafios ligados a cada ambiente e a uma lista de tarefas.”	Complete several elderly activities throughout the day.	Gameplay variety	Variety	Gameplay mechanics
	Challenges that the elderly go through in their routine.	Meaningful gameplay	Similarities to real life	Sociocultural critique
“O jogo pode tomar lugar nas residências dos próprios velinhos. No jardim, hortas, consultas médicas, supermercado, deslocações (transporte público)...”	The game takes place in several different environments.	Gameplay variety	Variety	Gameplay mechanics
“(…) caminhar com (...) dificuldade (atrasar o movimento, feedback), (...) dificuldade em ler as embalagens (blur na visão), dificuldade em controlar tudo.”	The character experiences different difficulties according to the setting they are in.	Gameplay variety	Variety	Gameplay mechanics
“Personalizar o avatar (nome e género)”	Allowing certain character customization aspects.	Customization	Possibilities	Gameplay mechanics
“Precisa concluir todas as tarefas com êxito. Caso não consiga cumprir uma tarefa não passa para a próxima fase.”	Must do each task successfully to move onto the next one.	Simple and easy to understand mechanics	Uncomplicated gameplay loop	Gameplay mechanics

## GDC 4

**Table C.4:** Qualitative content analysis of GDC 4.

Meaningful unit of text	Condensed meaning unit	Code	Sub-category	Category
“Planear as férias. Dificuldades de comprar e pesquisar voos e hotéis. Questões de segurança na net para planear. Malas se perdem...”	Difficulties in setting up and planning a vacation.	Critiquing a current life situation	Drawing comparison to current routine	Sociocultural critique / Age group
“Simular o plano de viagem (selecionar quantidade de pessoas, dinheiro disponível, pais e locais a visitar), checklist de uma agência de viagens.”	Taking into account all factors before simulating the vacation plan.	Critiquing a current life situation	Drawing comparison to current routine	Sociocultural critique
		Freedom of choice	Possibilities	Gameplay mechanics
“(…) faz todas as tarefas, pode tomar decisões e alterar. No final do dia é apresentada a conta a pagar.”	According to every decision made, the total expense at the end of the day varies.	Different endings	Repercussion of actions	Gameplay mechanics
“Pode desviar do plano, com outras propostas.”	Can alter the plan.	Freedom of choice	Possibilities	Gameplay mechanics

## Appendix D1: General overview of participants' opinions on critical games

Table D.1: General overview of participant's opinions on critical games.

Positive Aspects	Negative Aspects
<ul style="list-style-type: none"><li>• Not tiresome</li><li>• Freedom of possibilities</li><li>• Exploring at one's own pace</li><li>• Interesting game concept</li><li>• Narrative or story-driven games</li><li>• Similarities to real life matters / issues</li><li>• Drawing comparison to current life situations</li><li>• Agency in the narrative</li><li>• Prompting critical reflection</li><li>• Challenging, but not too challenging</li><li>• Forgiving</li></ul>	<ul style="list-style-type: none"><li>• Repetitive gameplay loop</li><li>• Lack of replayability</li><li>• Having to repeat levels everytime they lose</li><li>• Slow playable character movement</li><li>• Monotonous gameplay</li><li>• Slowness of in-game movement</li><li>• Good premise, poor execution</li><li>• Does not understand the premise</li><li>• Aversion to pixelated visuals</li><li>• Unpleasant to look at or uneasy on the eyes</li><li>• Unattractive colour palette</li></ul>

## Appendix D2: General overview of participants' opinions on non-critical games

**Table D.2:** General overview of participant's opinions on non-critical games.

<b>Positive Aspects</b>	<b>Negative Aspects</b>
<ul style="list-style-type: none"><li>• Fun, even if there is difficulty</li><li>• Freedom of possibilities</li><li>• Exploring at one's own pace</li><li>• Interesting game concept</li><li>• Narrative or story-driven games</li><li>• With replay value</li><li>• Challenging, but not too challenging</li><li>• Enjoyable graphics</li><li>• Movie-like features or sequences</li><li>• Enjoyable soundtrack / music</li></ul>	<ul style="list-style-type: none"><li>• Repetitive gameplay loop</li><li>• Having to repeat levels everytime they lose</li><li>• Slowness of in-game movement</li><li>• Sameness of the visuals</li><li>• Confusing controls</li><li>• Confusing game mechanics</li><li>• Too difficult</li><li>• Lack of time to learn the game properly / Lack of tutorials</li><li>• Too fast-paced / Requiring quick reflexes</li><li>• Nonsensical plot</li><li>• Too much going on</li><li>• Too much visual clutter</li></ul>