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Understanding the Impact of Perceived Challenge on Narrative Immersion in Video Games: The Role-Playing Game Genre as a Case Study

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Abstract: This paper explores the intricate interplay between perceived challenge and narrative immersion within role-playing game (RPG) video games, motivated by the escalating influence of game difficulty on player choices. A quantitative methodology was employed, utilizing three specific questionnaires for data collection on player habits and experiences, perceived challenge, and narrative immersion. The study consisted of two interconnected stages: an initial research phase to identify and understand player habits, followed by an in-person intervention involving the playing of three distinct RPG video games. During this intervention, selected players engaged with the chosen RPG video games separately, and after each session, responded to two surveys assessing narrative immersion and perceived challenge. The study concludes that a meticulous adjustment of perceived challenge by video game studios moderately influences narrative immersion, reinforcing the enduring prominence of the RPG genre as a distinctive choice in narrative.

Keywords: perceived challenge; narrative immersion; RPG; game design

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1. Introduction

Does the difficulty of a video game go beyond mere challenge and become a fundamental element in how players engage with the narrative? This question resonates prominently in the field of video games, sparking debates and deep reflections in the realm of game research and development. At the heart of this question lies the complex relationship between the inherent gameplay challenge and the deep immersion in the narratives of different video games. Of particular interest is the approach taken by certain titles, such as *Sea of Stars* [1], which offers players the choice of a more accessible difficulty level in an unconventional way by providing an amulet from the start that can be equipped or not (Narrative Amulet). This amulet substantially increases characters' resilience throughout the game, with its description stating: "For those who prefer Zen challenges." This seemingly benevolent adjustment, however, presupposes an intriguing underlying premise: the idea that players opting for more rigorous challenges may somehow be deprived of fully enjoying the narratives present in these video games.

This paradigm contrasts substantially with the approach evident in titles like the renowned *Dark Souls* series [2], which adopts a diametrically opposite position. These masterpieces of the genre not only omit any possibility of changing the difficulty level but also pride themselves on this uncompromising stance. Such a perspective subjects all players, regardless of their initial skills, to a notably uniform and challenging experience. This approach proves to be not just a gateway to ludic pleasure but a challenge in itself,

compelling players to persevere until they acquire the necessary skills not only to survive but also to truly appreciate the intricate narrative these works offer [3]. Following this idea, the main objective of this paper is to explore and understand the correlation between the perceived challenge experienced by players throughout gameplay and their immersion in the narrative in RPG video games. The research question was formulated as follows: Does the perceived challenge experienced by players throughout gameplay correlate with their immersion in the narrative within RPG video games?

This paper is organized into six sections: Section 2 establishes a comprehensive conceptual framework, delving into the intricacies of perceived challenge and narrative immersion. This section serves as a foundational exploration, elucidating the nuances inherent in the concepts of perceived challenge and narrative immersion by clarifying key theoretical frameworks and synthesizing previous research findings. Section 3 outlines the methodology employed in this research, covering the selection of the case study and providing justifications for the chosen three video games. This section also elucidates the research methods, particularly the surveys utilized to measure perceived challenge and narrative immersion. Additionally, it expounds on the participant selection process. The section culminates with an explanation of the two phases of the research procedures, offering a detailed account of the steps taken to gather and analyze the data. Section 4 presents the findings derived from the survey data. This section provides a detailed account of the results obtained through the collection and analysis of the surveys. Furthermore, Section 4 engages in a comprehensive discussion of the results, interpreting their implications and contextualizing them within the existing literature. Finally, Section 5 encapsulates the paper by presenting the conclusions drawn from the research, acknowledging any limitations encountered, and proposing potential avenues for future research that may stem from this study.

2. Conceptual Framework

2.1. Narrative Immersion

To be immersed is to be engaged in the context, not only physically but also mentally and emotionally [4]. Agrawal et al. [5] defined immersion as a phenomenon experienced by an individual who, when in a state of profound mental engagement, undergoes a change in attentional state, whether with or without sensory stimulation, allowing for the dissociation of consciousness from the physical world. Nilsson et al. [6] examined various perspectives on immersion and developed a three-dimensional taxonomy with foundational concepts of challenge-based immersion, system immersion, and narrative immersion.

They define challenge-based immersion as the mental absorption of a user, induced by challenges that require mental and/or sensorimotor skills. Addressing system immersion as an objectively measurable property of the system and not the user's reaction to that system, they further explain that narrative immersion is characterized by a degree of mental absorption or intense concern with the story, as well as the space and characters [6–8].

Later, Morgado and Beck [8] integrated the perspectives of Nilsson et al. [6] and Agrawal et al. [5].

Adams [9] conceptualizes a more specific immersive experience, narrative immersion, to describe the sensation of being completely involved in a story and accepting the world and events of the narrative as real. Several other propositions akin to the concept of mental absorption in the world of storytelling, such as imaginative immersion [10] and fictional immersion [11], also hinge on the immersive experience prompted by engaging narratives and settings in storytelling techniques.

Narrative immersion can arise from any narrative work [6], making it relevant to cinematic production. Specifically, narrative immersion can be derived from thrilling plots [9,12] in which the audience becomes engrossed in the progression of the narrative time, audience responses to the given location [12], and the audience's emotional investment in the fate of the main characters of the experience [12].

Narrative immersion is defined as the sensation of being inside a story, fully engaged, and accepting the world and events of the narrative as real. The prerequisites for a narrative immersion experience include a stimulating plot, compelling characters, and dramatic situations [8]. Narrative immersion involves intense and focused attention on unfolding narrative events. Such attention should mitigate the risk of players becoming engaged in real-world reflections and judgment decisions, which are crucial for their presence [13]. Additionally, Riva et al. [14] adds that narrative immersion can influence presence because emotionally or intellectually significant events can induce prolonged presence.

In a study by Qin et al. [15], crucial for understanding narrative immersion, the researchers did not attempt to define precisely what constitutes a narrative in a video game. In this regard, they left it open to consider the narrative as a broad term representing the potential experience players may have. This is evident in later works [16], where the video game used is a fighting game with very little that could be considered a story, let alone a purely narrative video game.

In the same study, Qin et al. [15] asserted that the best way to measure player immersion in video game narratives is through the Questionnaire of Player Immersion in Computer Game Narrative (QPICGN), a questionnaire that addresses seven dimensions: curiosity, concentration, comprehension, control, challenge and skill, empathy, and familiarity.

This questionnaire is not limited to a specific game genre, being applicable to narrative-focused video games. Although this study focused on video game narratives, this model also enables the measurement of user immersion in narrative-focused virtual reality experiences.

Undoubtedly, the study by Qin et al. [15,17], despite being over a decade old, remains a significant milestone in the discussion and measurement of narrative immersion in video games. This study is widely referenced by Nilsson et al. [6] and Agrawal et al. [5] as the primary reference in this area, standing out due to the depth and robustness of the arguments presented.

2.2. Perceived Challenge

Challenges are at the core of almost every gameplay, as pointed out by Adams [9] in page 16:

> *"Gameplay is challenges and actions that entertain. People enjoy a challenge, as long as they can reasonably expect to accomplish it. People also try a challenge they do not expect to meet if the risk is low and the reward is high. Challenges create tension and drama. At the simplest level, presenting players with a challenge amount to asking a question: 'Can you do it?' They'll enjoy trying to prove that you can."*

This excerpt highlights gameplay as a mix of challenges and actions for entertainment. It emphasizes people's satisfaction in facing challenges, even with uncertain outcomes, especially when risks are low and rewards are promising. This perspective underscores the intrinsic appeal of challenges in gaming, creating tension, drama, and enjoyment for players.

Challenge is associated with difficulty, but they are not synonymous. The notions of difficulty and challenge are often used interchangeably in the literature [18]. To comprehend the concept of perceived challenge, it is essential to initially clarify the differences between these two concepts and their intrinsic and relational forms. Difficulties and challenges are determined by the goal of the video game and the obstacles preventing the player from achieving it. These denote a task or problem rather than a specific experience. Lomas et al. [19] define difficulty as "the probability of failing the task," which can be objectively measured in a video game. In contrast, "difficult" and "challenging" are relational attributes that refer to how difficulties and challenges are experienced by the player.

According to Denisova et al. [20], "difficult" and "challenging" are terms typically used with different valences. The term "difficult" is employed for tasks that pose a struggle to persevere, whereas "challenging" is used more positively to characterize a demanding yet stimulating task or problem. A difficult video game may be frustrating and cause discomfort. On the other hand, a challenging video game is invigorating, and challenged

players are motivated to respond to tasks where their actions are differentiating, and they feel in control of the outcomes of those actions [21].

When measuring perceived challenge, the objective is to assess how a specific player experiences the challenges and difficulties presented by a particular video game. In other words, the goal is to understand how challenging and difficult players perceive the video game to be.

Challenge is a multifaceted experience in which different video game genres come with various intertwined types of challenges. Video games expose players to multiple types of challenges simultaneously, complicating the perception of the boundary between each challenge. In a study conducted by Denisova et al. [20], it was concluded that it was necessary to differentiate between types of challenges to develop an instrument capable of measuring the perceived challenge effectively—the Challenge Originating from Recent Gameplay Interaction Scale (CORGIS). The CORGIS questionnaire underwent prior validation and was designed to assess perceived challenge through a series of 30 inquiries. In the context of this study, it is suggested that, while not imperative, for optimal outcomes, the application of the CORGIS should be conducted immediately after the gaming session, utilizing a 7-point Likert scale for response quantification. The CORGIS was validated by a group of players and aimed to measure the level of perceived challenge in video games, based on the following four factors:

- Cognitive challenge (COG);
- Performative challenge (PERF);
- Emotional challenge (EMO);
- Decision-making challenge (DM).

3. Method

3.1. RPG as Case Study

For this research, the RPG genre was chosen as a case study. An RPG constitutes a distinct gaming genre, providing players with an immersive experience wherein they engage by embodying one or multiple characters within a specific narrative. Each player's representation of their character(s) should include three components [22]:

- Absorption, feeling like the character;
- Role-playing, embodying the character;
- Gaming, complying with and manipulating the rules and objectives of the narrative.

RPGs are games that allow multiple players to take on the role of imaginary characters and operate with some degree of freedom in an imaginary environment [23].

Despite the existence of RPGs with a multiplayer component (MMORPG), this paper will solely focus on the single-player component due to its more controlled environment. RPG-genre video games in the single-player mode are divided into various subgenres. However, there is no consensus on the formal definition of RPG subgenres, which varies depending on the group to which it belongs. Nevertheless, Schules et al. [24] point out that the following four subgenres are consistent in all cases, considered "stable" as they have been used for several years in industry press and colloquially by players:

- Tactical RPGs or strategy RPGs: Tactical RPGs, known in Japan as simulation RPGs, primarily focus on pre-planned combat. They are distinguished by an emphasis on strategic planning, the duration of character confrontations, and limited opportunities for grinding, especially to increase character levels (within the context of role-playing games (RPGs), grinding refers to the repetitive undertaking of similar in-game activities with the aim of achieving specific objectives; players often employ grinding as a strategic approach to accumulate experience points, acquire in-game items, or enhance the levels and attributes of their characters). Strategic planning in tactical RPGs varies in complexity, usually requiring players to consider battle properties or elements and how these influence characters. Some games, without direct battles, use a disadvantage/advantage system of elements (which can be psychological) to

affect how the player can interact with different components in the narrative, such as whether they can break down a door, based on the strength the character possesses. *Fire Emblem: Three Houses* [25] and *The Banner Saga* [26] are examples of video games in this subgenre.

- *Rogue*-like: The name of this subgenre derives from the *Rogue* video game [27]. In *Rogue*, players control a character that explores a dungeon, fight monsters, collects treasures, and progressively becomes more powerful. The main challenge of this video game lies in not allowing players to save their game, and upon restarting a level, the dungeon becomes completely different, i.e., a new level is generated. This prevents players from learning the layout of the dungeon, as well as the location of treasures and points of interest. However, *Rogue*-like video games, despite their high difficulty, are not only continuous-action video games—*Slay the Spire* [28], being a deck-building card game (it involves collecting cards for players to construct their decks during the game; in a deck-building card game, each player starts with a limited set of cards, and throughout the game, players add cards to their deck to enhance their ability to play and develop strategies), becomes an example of a turn-based *Rogue*-like RPG. The *Rogue*-like subgenre is typically characterized by several key game design components, including the procedural generation of levels (randomly generating maps through an algorithmic process, allowing for increased replay value and also conserving the space occupied by the video game—this process was a significant breakthrough when the *Rogue* video game was released) and/or items, turn-based combat and/or gameplay, and permanent death—wherein players, upon defeat, restart the game from the beginning;
- Action RPG: This subgenre is generally defined by two characteristics: real-time combat and a simplified character-development system. Instead of emphasizing tactical planning and decision-making, as seen in tactical RPGs, action RPGs integrate the need for players to test dexterity and reflexes in gameplay. The simplified development and evolution of characters have made the subgenre more accessible to players who are discouraged by the complexity of more traditional RPGs. *The Tower of Druaga* [29] was the first video game in this subgenre; however, it was only in 1996 with the *Diablo* video game [30] that action RPGs proliferated more widely.
- JRPG: JRPGs are RPGs created in Japan, generally emphasizing narrative and character building, as well as a turn-based combat system. This subgenre is known for detailed and fantastical worlds, memorable characters, and complex stories. Some popular examples of JRPGs include the *Final Fantasy* series [31], *Dragon Quest* series [32], and *Persona* series [33]. Since the release of the iconic *Dragon Quest*, JRPGs have become one of the most popular subgenres in Japan and worldwide. The *Final Fantasy* franchise [31] is an example of lasting success, with over 30 years of history and more than 175 million copies sold worldwide [34]. JRPGs often feature a turn-based combat system, allowing players to plan their actions in advance and strategically, rather than simply reacting to situations in real time. This system is seen as more complex and demanding, appealing to players seeking a more intellectual challenge.

In summary, all RPGs excel in the narrative component, while action RPGs focus on player skill and dexterity; tactical RPGs emphasize strategy and decision-making; and JRPGs present a strong emphasis on story, characters, and a typically turn-based combat system. Each subgenre possesses a unique intrinsic appeal, likely to captivate players with distinct preferences. In light of this, with RPG genres being characterized by a highly pronounced narrative component, the decision was made to select this genre as a case study, under the assumption that a higher degree of narrative immersion would likely be observed within this genre.

3.2. Video Games

Recognizing the paramount importance of the selected video games having an outstanding narrative component for smooth measurement, reference was made to The Game Awards event. (The Game Awards is an annual ceremony that recognizes and honors titles within the video game industry, including categories such as Game of the Year, Best Art Direction, Best Narrative, among others. The Game Awards also showcases premieres of upcoming video games and provides new information about titles previously announced in past years.) In this ceremony, all categories, including Best Narrative, feature the nomination of video games carefully selected by an international jury. Comprising over 100 media outlets and globally recognized influencers with extensive careers in critical game evaluation, this jury enhances the credibility and integrity of the selection process. While the precise criteria for nominating video games in the Best Narrative category are not explicitly disclosed by this event, the focus of the aforementioned category lies in recognizing excellence in crafting and presenting the most outstanding story or narrative with the inherent ability to captivate and engage players.

The initiation of the selection process occurred in 2021, and at that time, the ceremony for the same year had not yet taken place. Consequently, nominees from the previous year were consulted. With only two RPG-style video games nominated for Best Narrative in 2020, an extension of our search to the year 2019 was necessary to identify/choose the third RPG game, which interestingly emerged as the winner that year.

The selected video games are detailed in Table 1.

Table 1. Selected video games subcategorized—The Game Awards 2019 and 2020.

Video Game Title	Subgenres	Nomination Year	Winner
Hades [35]	*Rogue*-like	2020	No
Final Fantasy VII Remake [36]	Action RPG	2020	No
Disco Elysium [37]	Tactical RPG	2019	Yes

3.2.1. *Hades* Video Game

Hades [35] is a *Rogue*-like RPG developed by Supergiant Games, released in September 2020 (Figure 1). The narrative unfolds in the Greek underworld, where the player assumes the role of "Zagreus," the son of "Hades", who systematically attempts to escape the underworld and reach Mount Olympus. The gameplay of *Hades* is divided into two main parts: the exploration of the underworld and confrontation with enemies. During exploration, "Zagreus" must navigate through various randomly generated rooms, each featuring different enemies and obstacles. The objective is to reach the end of each level and progress to the next. However, *Hades* employs a permanent-death component, meaning that if the player dies during the journey, they must restart the game from the beginning. In combat, "Zagreus" utilizes a variety of weapons and abilities, each with its own advantages and disadvantages. The gameplay is fast-paced and fluid, featuring intense and constant action. Additionally, *Hades* presents a deep and engaging narrative with interesting and well-developed characters. Throughout the game, the player discovers more about Greek mythology and the relationships between the characters, elevating the experience beyond a mere action game. Another strength of *Hades* is its progression system. As the player advances and accumulates resources, they can unlock new weapons, abilities, and upgrades, making each "escape attempt" unique by allowing the combination of these factors to alter the strategy. In summary, *Hades* is a *Rogue*-like with a captivating narrative set in Greek mythology. It boasts fast and fluid gameplay, well-developed characters with significant connections between them, and an interesting progression system—factors that make *Hades* an excellent case study.

Figure 1. Within a combat scenario in the video game *Hades* [35].

3.2.2. *Final Fantasy VII Remake* Video Game

The second selected video game is the action RPG developed by Square Enix in 2020, *Final Fantasy VII Remake* [36] (Figure 2). This video game features updated and enhanced graphics compared to the original version of *Final Fantasy VII* [38], as well as revamped gameplay and a more detailed story. In terms of gameplay, the real-time combat system presents a significant shift from the original version. The game employs a hybrid system that combines elements of action and RPG, allowing players to use basic real-time attacks, special abilities and/or magic, and various strategic tactics during battles. *Final Fantasy VII Remake* also includes the option to pause the battle and issue commands using the "Tactical Mode".

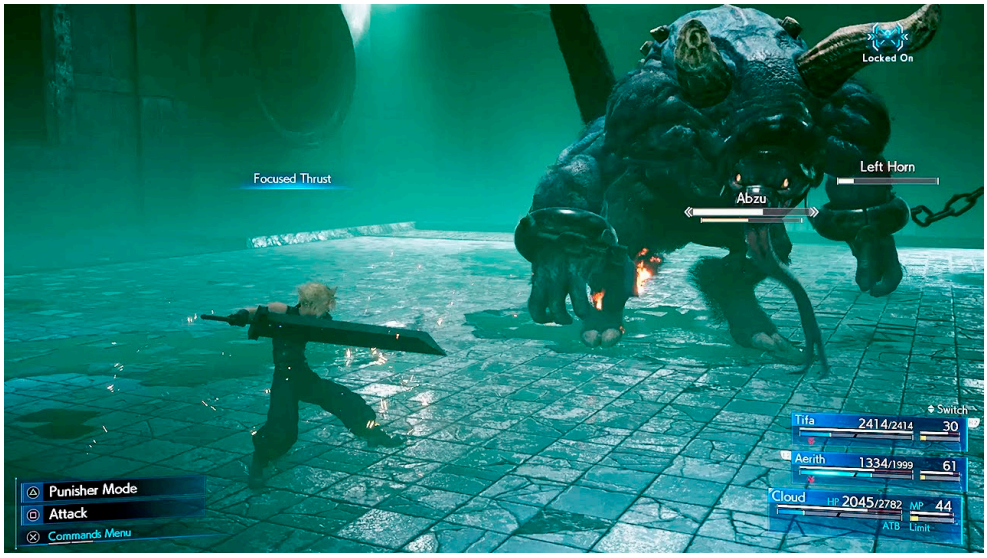

Figure 2. A real-time battle in the video game *Final Fantasy VII Remake* [36].

The game features a character-progression system, where players earn experience points (XP) by defeating enemies and completing missions, which can be used to increase character attributes, unlock new abilities, and learn magic. Players can also equip characters with weapons, armor, and accessories to enhance their skills and resilience.

Regarding the story, *Final Fantasy VII Remake* is a reimagining of the original video game, with additions and modifications to the plot. The story is divided into chapters, each focusing on a specific part of the narrative, with some side missions available between chapters to allow players to explore the city of Midgar more and get to know the characters better.

As mentioned, *Final Fantasy VII Remake* presents an engaging game design that combines elements of action and RPG, where the real-time combat system, compared to the original turn-based version, gives the player more control over the battle. The fragmented story and side missions allow players to experience the game at their desired pace, making their progression "smoother".

3.2.3. *Disco Elysium* Video Game

The third and final selected video game was *Disco Elysium* [37]—released in 2019, this open-world tactical RPG was developed by ZA/UM. *Disco Elysium* presents a detailed world with a complex story and a choice-based gameplay system that affects the narrative and the main character.

The dialogue and choice system is one of the most impressive features of the video game. It offers the player a wide range of dialogue options and choices that affect the story, the personality, and the appearance of the main character. Player choices also impact the game's narrative, allowing the player to experience different endings and outcomes based on their choices.

Although tactical RPGs are typically associated with battlefield scenarios involving multiple characters, one of the strong components of this subgenre is the advantage and disadvantage system in these battles against each component. *Disco Elysium* does not feature conventional battles, but many times, when engaging in dialogue with non-player characters (NPCs), the character's components and abilities are tested (battle). In case of failure, there is no possibility to retry the same speech choice, and often, it is only possible to select certain speech branches if the character has the correct components, for example, deciding to physically attack an NPC when the character's physical component is not adequately developed (Figure 3).

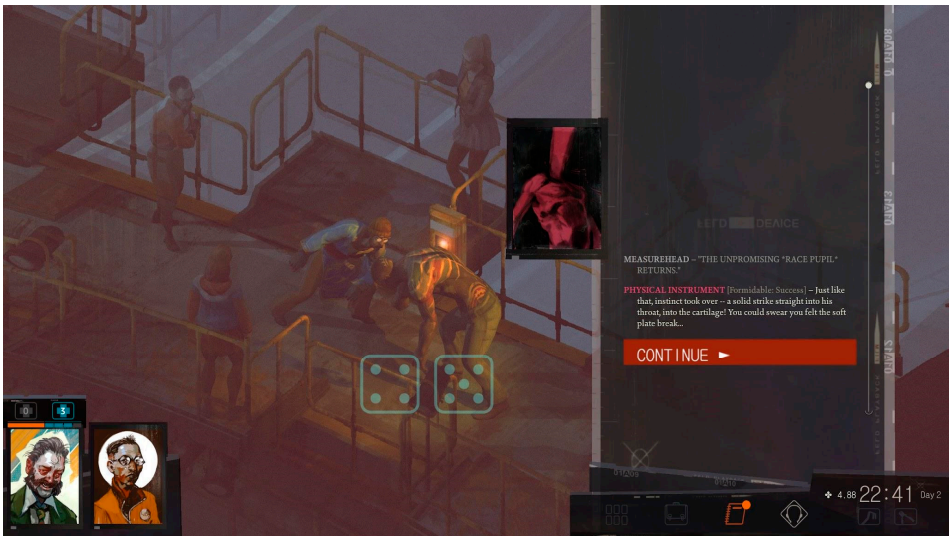

Figure 3. In this dialogue in *Disco Elysium*, it was necessary for the character to have the "Physical Instrument" component well developed to successfully complete this action [37].

In this video game, the player controls an alcoholic detective who wakes up in a hotel room with amnesia. The player can customize the appearance and personality of the character, affecting dialogue and available choices. Character customization is carried out using skill points that the player can allocate to different attributes, such as intelligence,

strength, perception, and psychology. Experience points are gained that can be used to improve these character skills as the player completes tasks and interacts with NPCs.

The open world presented in *Disco Elysium* is detailed, with NPCs having their own stories and personalities. During the game, the player can freely explore the world, interact with NPCs, gather information, and complete tasks.

Disco Elysium's story is complex, touching on themes such as corruption, drugs, politics, and identity. The video game uses a non-linear narrative that allows the player to experience the story in various ways, depending on the player's choices. Player choices affect not only the game's narrative but also the personality and appearance of the main character.

Overall, *Disco Elysium* is an unconventional tactical RPG with an innovative dialogue and choice system and a complex narrative. The open world is detailed, with a wide variety of NPCs to interact with and tasks to perform. The skill system adds additional layers of depth to the video game, allowing the player to further personalize their experience.

3.3. Questionnaires

In the initial phase, a survey was conducted to discern and comprehend the gaming habits and experiences of participants, encompassing metrics such as the average weekly gaming hours, preferred video game titles, and the participants' proficiency level as gamers. Subsequently, the study proceeded to the second segment, involving the amalgamation of two discrete questionnaires. This composite questionnaire comprises two distinct sections: the primary section focuses on evaluating the players' perceived challenge, while the subsequent section delves into the quantification of players' narrative immersion within the domain of video games.

3.3.1. General Information about Participants' Experience in Video Games

To select participants for this research, a questionnaire was employed to acquire insights into the general gaming habits of individuals. It aimed to assess their experience levels in the specific video game genres they usually engage with, their overall gaming proficiency, the average weekly gaming duration, and whether they identify with the RPG genre. This initial questionnaire primarily served the purpose of obtaining the desired quantity of participants for the subsequent phase. Due to time and resource constraints, it was not feasible to extend the study to all eligible individuals. Through this questionnaire, participants who lacked interest in participating in the research were initially excluded, as evidenced by their non-response.

Subsequent data analysis further identified participants who did not align with the RPG genre or had prior experience playing at least one of the three selected video games, rendering them ineligible for the next phase of the research. Given the objective of recruiting ten players and surpassing the target with an excess of eligible participants, a selection criterion had to be developed. In the forthcoming Sections 3.4 and 3.5, an exposition of the employed criteria and the procedural details concerning participant selection in the study will be provided.

3.3.2. Challenge Originating from Recent Gameplay Interaction Scale (CORGIS)

Denisova et al.'s [20] CORGIS was adapted to assess the perceived challenge of the selected video games. CORGIS was validated by a group of almost 1000 players and aims to measure the level of perceived challenge in video games, based on four factors: cognitive challenge, performative challenge, emotional challenge, and decision-making challenge.

The cognitive challenge (COG) factor encompasses the player's ability to memorize, observe, and solve problems within the context of the video game. It aims to evaluate the cognitive demand imposed by the video game, focusing on logical reasoning and mental strategies employed during gameplay. This measure seeks to understand the extent to which the video game stimulates cognitive skills such as memory, selective attention, and problem-solving, contributing to the development of these capacities in players.

The performative challenge (PERF) factor aims to measure the player's skills in terms of speed, reaction time, accuracy, and precision during the video game. Additionally, certain video games also require the player to have a high level of physical endurance, dexterity, and motor coordination to perform required tasks. This assessment aims to comprehend the player's competence in terms of physical performance and motor skills during interaction with the video game, providing insights into the impact of these factors on gameplay and the player's experience.

The emotional challenge (EMO) factor is dedicated to assessing the emotions experienced by the player during the video game, as well as thoughts and feelings when not playing. This factor analyzes the emotional impact exerted by the video game on the player, such as levels of frustration, joy, or fear experienced during gameplay. Through this evaluation, the goal is to understand the nature and intensity of emotional responses evoked by the video game, considering both moments of immersion in the game and the prolonged influence on emotions and thoughts outside the game context.

Finally, the decision-making challenge (DM) quantifies the effectiveness with which the player manages the consequences of their choices throughout the progression of the video game. It is a measure that aims to assess the player's competence and ability to deal with the ramifications of their actions in the game, considering challenging situations, ethical dilemmas, and possible feelings of regret regarding decisions made. This assessment seeks to understand the player's proficiency in making considered decisions and adapting gameplay strategies based on consequences, thus optimizing performance, and achieving desired outcomes in the specific context. Each factor was individualized, and each comprised a different number of questions, totaling 30.

In the validation analysis conducted by Denisova et al. [20], participants were asked to use a 7-point Likert scale, where 1 represented total disagreement and 7 represented total agreement. The choice of the 7-point scale was grounded on the premise that it is the most accurate method for data collection, especially when seeking more comprehensive and detailed information.

In order to achieve more precise results in data extraction, the authors recommend that this questionnaire, consisting of 30 questions, be administered immediately after the conclusion of the gaming session. Additionally, they suggest presenting the questions to participants randomly and without referencing the four specific challenge types. This approach minimizes any potential bias or participant influence when responding to the questions, ensuring impartiality and objectivity in data collection. By avoiding the explicit identification of the different challenge types, the aim is to prevent participants from directing responses based on their preconceived perceptions of the factors associated with different challenges. These methodological strategies are adopted to optimize the validity and reliability of the results obtained through the questionnaire, allowing for a more accurate assessment of players' perceived challenge.

Given the goal of optimizing research time and resources, an approach that unified two assessment instruments into a single questionnaire was adopted. This strategy facilitated the measurement not only of players' perceived challenge but also of players' immersion in the video game narrative.

3.3.3. Questionnaire of Player Immersion in Computer Game Narrative (QPICGN)

Qin et al. [15] employed two online questionnaires to gather data from a participant group (N = 734), conducting a comprehensive analysis. From this investigation, Qin et al. [15] identified and established seven essential dimensions to be considered in the analysis of narrative immersion in video games.

The first dimension pertains to curiosity, involving the player's expectation and interest in exploring and acquiring knowledge about the game's narrative. In the second dimension, termed concentration, the player's ability to stay focused and "entwined" in the video game narrative for an extended period is covered. The third dimension, titled challenge and skills, addresses the balance between challenges presented and the player's

skills during the progression of the video game narrative. The subsequent dimension, named control, focuses on the player's sense of control and influence in steering the game's narrative. In the fifth dimension, comprehension, the player's ability to interpret and understand the content and structure of the video game story in the best possible way is encompassed. The sixth dimension, empathy, essentially addresses emotional involvement and the player's ability to identify and engage with the game world, allowing them to feel like an integral part of that universe. Lastly, the seventh dimension, familiarity, incorporates the player's prior knowledge of the video game's story and world.

Based on these seven dimensions, intending to measure players' narrative immersion in video games, a questionnaire (QPICGN) was developed, comprising a comprehensive set of 27 questions distributed among the identified seven dimensions. These questions were formulated to be assessed using a 7-point Likert scale. Based on extensive validation across multiple studies [5,39,40], this instrument has received substantial support as the most suitable approach to effectively measure narrative immersion in video games.

3.4. Participants

Initially, the University Lusófona (Portugal) was approached to request availability for the disclosure and authorization to apply the survey to Bachelor's in Multimedia and Video Game Applications students and Master's in Game Design and Playable Media students. This specific choice of players was based on the consideration that these students already possess pre-acquired skills as gamers due to their higher education in related courses, with the intention that, if interested, they would actively participate in the research. After approval, participants were selected through a questionnaire distributed via email. As mentioned earlier, the email message contained a hyperlink providing access to the questionnaire, which remained active for a month to maximize the number of interested students participating. The questionnaire included general inquiries about participants' gaming experience, such as the average number of hours spent gaming per week, preferred types of video games, and their familiarity with RPGs.

A total of 42 participants were obtained (23.8% female; mean age = 21.71 years old, SD = 4.60), among whom, not all were interested in the RPG genre; only 78.6% of the players enjoyed playing RPGs. Only participants interested in the RPG genre proceeded to the next survey questions.

In the analysis, it was noted that only five participants reported playing an average of fewer than five hours per week, constituting 11.9% of the total respondents. Regarding eligibility for the study, participants were excluded if they had already played at least one of the three selected video games. In response to the question listing ten video game options, 18 students indicated they had not played at least one of the three selected video games, representing 42.9%.

To gain insights into the participants' RPG genre preferences, they were asked to identify the video games they have played or still play the most. Notably, all students reported having at least one RPG game among the three video games they play/have played the most.

At the conclusion of the survey, participants were asked to self-assess their overall gaming performance and proficiency in the genre they usually play, using a scale from 1 (Not experienced at all) to 10 (Extremely experienced). Analyzing the results, it was evident that, overall, the participating gamers demonstrated a moderately high level of experience in video games, with an average rating of 7.64 (SD = 1.17). The majority of players (54.5%) reported that level 8 best represented their skill and knowledge in the field of video games.

When considering specific experience in the video games that participants usually play most frequently, there was a significant increase in the average experience level, reaching an average rating of 8.76 (SD = 0.61). In this context, most players (57.6%) indicated that level 9 was the best rating to describe their proficiency in video games.

These findings suggest that the participants, who were predominantly students from multimedia and video game design programs, possess considerable experience in the realm of video games, both in general and within their preferred genres.

3.5. Procedure

3.5.1. First Phase

Due to resource constraints and the limited time available for this study, it was decided to include only a small group of participants, consisting of a total of ten players, in the final analysis.

Given the limitation on the number of participants, exclusion criteria were established to select participants from the data collected in the initial phase, using a selection procedure that considered various relevant aspects. In this regard, a filtering process was carried out with the following inclusion criteria:

- Identification with the RPG genre: Participants should express interest and affinity with RPGs, acknowledging themselves as players of this specific genre of video games.
- Absence of previous experience with the study's video games: Participants should not have played any of the three specific video games selected for this research, ensuring that players had no prior influences that could affect perceptions and responses during the research.
- Weekly game time: Participants were required to have a weekly game time of more than five hours. This requirement was established to include players who demonstrated a minimum level of weekly commitment to video games, in contrast to those who, although having previous experience, no longer played as frequently.

After the careful selection process, twenty participants were chosen, ranked in descending order of overall experience, always prioritizing players with a higher degree of overall experience. Given that multiple players had a rating of eight for overall experience, it became imperative to establish a prioritization criterion due to the limited available slots, namely the following:

1. The highest overall experience level available (if unique);
2. Having one or more RPG games on the list of games usually played;
3. The highest level of experience in the games usually played;
4. The number of hours played per week;
5. The sum of the number of hours spent in the RPG genre from the list of games usually played.

After concluding the selection phase, ten participants were chosen, and the players were notified via email about their eligibility to proceed to the next stage of the process. This phase involved playing three different video games for a short period and responding to a specific survey on three separate days. However, it was identified that two previously selected players would not be available to participate in this next phase. As a result, it was necessary to conduct a new selection of two players using the same criteria explained earlier.

Upon establishing the final group of ten eligible and available players to proceed to the second phase, it was necessary to determine a combination of days that would be most suitable for their participation. Since no compensation was provided for the volunteer participants, it was essential to find days that caused the least disruption to them, considering their individual availabilities and personal commitments.

It is pertinent to note that despite active participation from only ten individuals, the sample size is, in fact, n = 30. This distinction is attributed to the adopted methodological approach, which involves considering each player's experience with the three analyzed video games, knowing that each represents a subgenre of the RPG genre.

Each participant, by playing each of the three provided video games, contributed individualized information for each title. Therefore, the aggregation of participants' experiences concerning each video game led to the effective compilation of a sample size of n = 30, despite direct involvement being limited to ten individuals. Despite the limited sample

size, past research utilizing identical surveys (QPICGN and CORGIS) with comparable amounts of collected data has been referenced extensively [17,41–44].

It is imperative to highlight that the approach adopted in this paper does not seek an in-depth understanding of each subgenre of the analyzed video games. Instead, the primary goal is to comprehend the RPG genre in a general sense. In this context, the presentation of data did not occur on an individualized basis, as it was not deemed necessary to achieve the outlined objectives for this research.

In summary, the study employed a sample size of n = 30 to delve into the correlation within the RPG genre. This deliberate choice allowed for a comprehensive exploration of gaming dynamics. Each data point, meticulously gathered from individual video games, was meticulously considered as a distinct entity within the analysis. Given the nuanced landscape of RPGs, with their diverse subgenres demanding varied gameplay styles, it became essential to ensure consistency across the participant pool. Thus, the same individuals were enlisted to play all three games, ensuring a uniform approach and minimizing potential discrepancies in gaming experiences. This methodological approach aimed not only to uphold rigor but also to acknowledge the intricate nature of RPG gaming. The authors theorize that, owing to the intricate diversity within the RPG genre and the unique demands posed by each subgenre, players may offer three distinct samples, each reflecting nuanced gameplay experiences. This recognition underscores the richness and complexity of RPG gaming, highlighting the manifold ways in which players engage with its diverse subgenres.

3.5.2. Second Phase

In the execution of this second phase, the coordination of a total of six days with the ten participants was crucial, allocating a seven-hour timeframe for data collection on each day. Due to resource constraints, such as participant availability, it was not feasible to designate an exclusive day for each video game. Instead, the decision was made to split each video game into two sessions, resulting in a total of six sessions for the three video games. It is noteworthy that the number of interventions per session varied based on each player's availability, with not necessarily five interventions per session. Given the ten players and two sessions per game on average, each session featured approximately five interventions. However, it is essential to emphasize that this number may have varied and may have been larger or smaller. In the second session, only the remaining players participated, adapting to the specific dynamics and availability of each group of players. Despite being divided, each player participated in the exact same order in each game, with no compromise to their gaming time or potential distractions.

Each video game received a cumulative availability of 14 h, spread across two sessions, affording players the flexibility to select the most suitable participation time in alignment with their personal commitments. The data collection, conducted at University Lusófona, was facilitated by the homogeneity of participants, as all players were affiliated with the institution, streamlining the data-collection process.

Each data-collection session followed a meticulous and rigorous process, adhering to carefully planned procedures. The detailed process for each session was as follows:

- Initially, the data-collection room was exclusively reserved for the participation of a single player in each intervention. This approach aimed to create a quieter environment, free from distractions, seeking to maximize player immersion during gameplay.
- Each player was allotted a total of 75 min to interact with each of the three selected video games. This timeframe was determined based on the estimated time players take to complete tutorials in the three video games, recognizing the importance of overcoming this initial learning phase. This stage was considered essential for a more in-depth understanding of mechanics and a more comprehensive introduction to each game's story. The goal was to ensure an adequate duration for players to explore different aspects of each video game, engage with the narrative, and become minimally familiar with gameplay.

- Additionally, an average additional period of 5 min was allocated for the player to respond to the provided surveys using a Wi-Fi-connected iPad, as the surveys were digital. This post-gameplay phase aimed to gather information immediately after the player finished playing. It was during this moment that players responded to the CORGIS and QPICGN questionnaires, aiding in measuring perceived challenge and narrative immersion for each player in each respective video game.

In the first session of the video game *Final Fantasy VII Remake*, only three participants were present, leading to a significant compression of available time. To compensate for this limitation, the second session was intensified, totaling 9 h (540 min) to fulfill the planned schedule. Conversely, in the video game *Hades*, everything proceeded as planned, with participants attending evenly in both sessions. As for the video game *Disco Elysium*, six participants attended the first session, while the number reduced to four in the second session. Coordinating schedules for this latter session proved more challenging, occurring during participants' exam periods, requiring additional efforts to ensure everyone's participation.

Regarding hardware, participants used a PlayStation 4, a 65-inch (1.65 m) television, and headphones for gameplay, along with an iPad Pro for survey responses. Concerning the three selected video games, they were acquired in physical format beforehand. During each intervention, participants were encouraged to play in the way that best suited them, allowing freedom to explore the video game according to their individual preferences, adopting different strategies, making decisions, and facing challenges according to their gaming style and personal interests. However, in the video game *Final Fantasy VII Remake*, given the option to choose between normal and easy difficulties (even before starting gameplay), players were directed to maintain the standard difficulty of the game without any facilitation, preserving the integrity of the experience.

Immediately after completing gameplay, participants were invited to complete the CORGIS and QPICGN questionnaires. These questionnaires, specifically designed for the study, aimed to assess players' narrative immersion and perceived challenge. Administering these questionnaires immediately after gameplay allowed participants to express their perceptions and reflections while the experience was still fresh in their memory, contributing to obtaining more authentic and spontaneous responses. Each player was individually summoned in their respective turn, following the same sequence, to engage in each video game during each session. They remained alone in the room for the entire 80 min to prevent any distractions.

4. Results and Discussion

Given the constrained size of our sample (n = 30), a comprehensive evaluation of the distribution across all scales was imperative to judiciously select a statistical methodology. Employing the Statistical Package for the Social Sciences (SPSS) [45], a Shapiro–Wilk test [45] was executed, revealing no discernible indications of non-normality within any of the scales. Subsequently, based on this outcome and subsequent visual scrutiny of histograms (Appendix A Figures A1 and A2) and quantile–quantile (Q-Q) plots pertaining to all scales, attention was directed towards establishing the correlation between perceived challenge and narrative immersion through a Pearson correlation analysis [17,43,45,46]. Additionally, Cronbach's alpha coefficient (Table 2) was utilized to further assist in the analysis.

The adoption of Pearson correlation emerges as the more appropriate statistical method for our investigation, despite the initial contemplation of utilizing repeated-measures correlations [47–49]. Our study's temporal dimension bears no relevance, and the considerable distinctions within each RPG subgenre render the collection of repeated data unnecessary. Given that all games fall under the RPG umbrella, the intricacies of their respective subgenres introduce notable disparities. Consequently, treating each dataset as discrete entities rather than recurring observations seems methodologically sound. Pearson correlation, renowned for assessing linear relationships between variables at singular time points, aligns seamlessly with our analytical objectives. By treating each dataset autonomously, we can capture the nuanced correlations between narrative immersion and perceived challenge

across diverse RPG subgenres effectively. Therefore, Pearson correlation emerges as the more scientifically sound choice for our analytical framework.

Table 2. Reliability analysis (Cronbach's alpha), mean, and standard deviation for each scale across the amalgamation of the three video games.

Survey: Purpose	Cronbach α	Mean $\pm$ SD
CORGIS: cognitive challenge (COG)	0.778	4.642 $\pm$ 0.919
CORGIS: emotional challenge (EMO)	0.747	4.504 $\pm$ 1.363
CORGIS: performative challenge (PERF)	0.957	3.493 $\pm$ 1.940
CORGIS: decision-making challenge (DM)	0.712	4.048 $\pm$ 1.032
CORGIS: perceived challenge	0.780	4.183 $\pm$ 0.721
QPICGN: narrative immersion	0.833	5.156 $\pm$ 0.628

In the context of the correlation analysis, two tables were constructed for the presentation of findings. Table 3 delineates the correlations among various categories of perceived challenge and narrative immersion, whereas Table 4 furnishes a more nuanced scrutiny of the correlation between narrative immersion and perceived challenge. This includes considerations for the number of participants engaged and the associated significance relationships. Statistically significant thresholds were set at $p < 0.05$, and additionally at $p < 0.01$, signifying elevated significance criteria. To deepen the comprehension of this correlation, we generated a scatter plot presented in Figure 4, encompassing the three scrutinized video games. Additionally, for further clarity and focus on the primary analysis, individualized representations have been included in Appendix B. These visual aids not only augment the clarity of the scrutinized relationships but also facilitate the nuanced interpretation of the outcomes achieved.

Table 3. Pearson correlation between each scale across the three video games.

Survey: Purpose	COG	EMO	PERF	DM	CORGIS	QPICGN
CORGIS: cognitive challenge (COG)	1					
CORGIS: emotional challenge (EMO)	0.332	1				
CORGIS: performative challenge (PERF)	0.380 *	−0.432 *	1			
CORGIS: decision-making challenge (DM)	0.199	0.333	−0.141	1		
CORGIS: perceived challenge	0.818 **	0.419 *	0.534 **	0.481 **	1	
QPICGN: narrative immersion	0.130	0.366 *	0.198	0.338	0.469 **	1

* Correlation with significance level $p < 0.05$. ** Correlation with high significance level $p < 0.01$.

Table 4. Correlation between narrative immersion and each component of perceived challenge across the three video games.

Inquiry: Purpose	Parameter	COG	EMO	PERF	DM	CORGIS
QPICGN: narrative immersion	r	0.130	0.366 *	0.198	0.338	0.469 **
	p	0.494	0.047	0.295	0.068	0.009
	n	30	30	30	30	30

* Correlation with significance level $p < 0.05$. ** Correlation with high significance level $p < 0.01$.

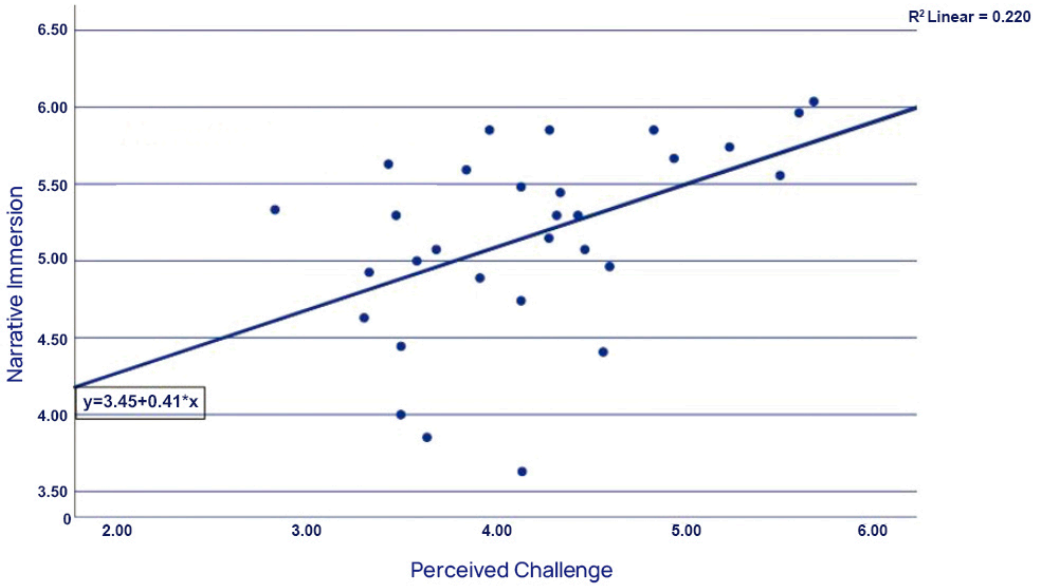

Figure 4. Scatter plot illustrating the relationship between perceived challenge (CORGIS) and narrative immersion (QPICGN) in the RPG genre.

Moreover, for the synthesis of variables present across all scales, descriptive statistics in the form of means accompanied by their corresponding standard deviations were utilized. Furthermore, Cronbach's alpha coefficient [44,46] was employed as a metric of reliability for the administered questionnaires, with its application as an estimator of conceptual consistency (Table 2). A threshold of 0.70 was embraced as indicative of "acceptable" reliability. It is pertinent to underscore that while this threshold is commonly adopted in diverse studies, no unequivocal limits or criteria are established for an acceptable alpha coefficient [50,51]. Thus, within the scope of this paper, the proposed threshold was deemed a pragmatic indicator of questionnaire reliability.

The present discussion focuses on the analysis of the correlation between perceived challenge and its various dimensions with narrative immersion in RPG video games. It is crucial to emphasize that the research's purpose extends beyond an individual analysis of each video game, aiming for a comprehensive assessment of the genre as a whole. This intentional approach seeks to understand trends and patterns that transcend specific titles. To achieve this, three distinct subgenres within RPGs were selected, intending to provide a more global perspective on the correlation between perceived challenge and narrative immersion in this diverse context. Our analysis not only identifies statistical relationships but also aims to contribute to a deeper understanding of the nuances shaping the gameplay experience in RPGs. The results of this analysis reveal a captivating insight into the underlying patterns in this complex relationship.

Firstly, concerning cognitive challenge (COG), there is a remarkably weak association ($r = 0.113$). Although this correlation is statistically non-significant ($p = 0.494$), it suggests the existence of a subtle relationship between the perception of cognitive challenge and narrative immersion. This result may indicate that, in some contexts, an increase in cognitive complexity could potentially contribute to a richer narrative experience, albeit in a nuanced manner.

On the other hand, emotional challenge (EMO) demonstrates a correlation of moderate magnitude ($r = 0.366$) and is statistically significant ($p = 0.047$). This implies that the perceived emotional intensity during the gaming experience is substantially associated with narrative immersion. This result underscores the significance of emotions in constructing an engaging experience in RPG video games.

Regarding performative challenge (PERF), a weak correlation is observed ($r = 0.198$), with a p-value that does not reach the significance level ($p = 0.295$). This indicates that,

unlike emotional challenge, the perception of performative challenge does not have a substantial influence on narrative immersion.

When examining the decision-making challenge (DM), a correlation of moderate magnitude (r = 0.338) is observed, accompanied by a *p*-value indicating a trend toward significance, albeit falling just short of the conventional threshold ($p = 0.069$). This finding suggests that the decision-making process during the video game is more linked to the player's narrative experience than initially anticipated.

Finally, examining the overall perceived challenge (CORGIS) reveals a moderate association (r = 0.469) and is highly statistically significant ($p = 0.009$). This discovery highlights the importance of perceived challenge in the narrative immersion experience in RPG video games.

The distinction between the overall CORGIS score and its individual dimensions concerning narrative immersion is noteworthy. RPGs, by their nature, incorporate diverse challenges across each dimension. The subtle variations in each dimension may stem from the distinct characteristics of RPG subgenres, where each subgenre accentuates particular challenge aspects. Consequently, the overall CORGIS score comprehensively encapsulates the multifaceted challenges within RPGs, portraying the genre's inherent intricacy and flexibility across various subgenres.

Understanding the interplay between the overall CORGIS score and its individual dimensions sheds light on the intricate dynamics of narrative immersion in RPGs. Each dimension contributes uniquely to the overall gaming experience, reflecting the diverse elements that shape player engagement and narrative interaction.

Narrative immersion in video games encompasses the subjective experience of complete engagement with the storyline, wherein players accept the events and narrative constructs as authentic. Scholarly discourse underscores the pivotal role of perceived challenge, delineated as the subjective encounter with in-game obstacles, in fostering this immersive state [5,6,8,12,15]. Empirical findings corroborate the notion that perceived challenge exerts a moderate influence on narrative immersion.

The nuanced perception of challenge, inclusive of its emotional dimensions, is deemed indispensable for elucidating its nexus with narrative immersion. Quantifying perceived challenge assumes significance and can be operationalized through instruments such as the CORGIS, designed to capture various facets of challenge, including emotional ones [19,20,42,44].

In essence, perceived challenge, particularly when intricately intertwined with narrative elements and augmented by emotional resonance, possesses the capacity to notably amplify players' sense of engagement and immersion within the game's narrative framework.

In summary, the results indicate that different facets of challenge have varying degrees of influence on narrative immersion. While emotional challenge and decision-making challenge play more significant roles, cognitive challenge and performative challenge have a less noticeable impact. When considering the overall perceived challenge, showing a moderate relationship, with the *p*-value of 0.009 being below the high significance level set at 0.01, it indicates that this correlation is not a result of chance. In other words, the results are statistically significant.

This fact suggests that the level of players' perceived challenge is associated with a state of profound mental engagement derived from the video game's narrative. Therefore, when developing RPG video games, it is essential to consider how challenge can influence the narrative experience, seeking the appropriate balance to provide an engaging experience for players. Nevertheless, despite the significance of the data, it is imperative to consider that due to the small sample size, these values may undergo slight alterations with its expansion.

5. Conclusions

5.1. Main Findings

In this paper, our focus was on investigating the relationship between perceived challenge and its various dimensions with narrative immersion in RPG video games. The

motivation for this research stemmed from the increasing impact of game difficulty on players' choices and preferences, a decisive factor in the decision to acquire and play specific video games. Understanding how different facets of challenge relate to narrative immersion in these games is crucial for enhancing player experiences and guiding future development.

The results of this research provide significant contributions to various areas, outlined as follows below:

- Holistic understanding of RPGs: The adopted approach, encompassing the assessment of three distinct RPG subgenres, offered a comprehensive view of the complex relationship between challenge and narrative immersion. This analysis transcended specific game details, providing a global perspective, and revealing relevant trends for various contexts within this genre.
- Guidance for game design: The findings are valuable for game designers, emphasizing the importance of balancing different types of challenges to create engaging experiences. For instance, the significant correlation between emotional challenge and narrative immersion suggests that evoking emotional responses in players is essential for crafting an engaging narrative.
- Statistical validity: The study results present statistically significant correlations, confirming the relationship between challenge and narrative immersion in RPGs. This offers robust evidence of the influence of challenge on player experiences in this genre.
- Contribution to academic knowledge: This study contributes to the field of video games by providing a detailed analysis of a fundamental aspect of player experience. It expands general knowledge, more specifically in the RPG genre, about the intricate interaction between challenge and narrative immersion in video games.

In summary, this paper deepened the understanding of the relationship between perceived challenge and narrative immersion in RPG video games. This knowledge is valuable not only for the academic community but also for the gaming industry, as it can guide the future of game design, providing more engaging and satisfying experiences to players. By carefully balancing perceived challenge, game studios can contribute to creating more captivating narratives, solidifying the RPG genre as a continuously popular choice among players.

5.2. Limitations

Despite offering valuable insights, this paper has limitations that should be considered in interpreting the results.

Firstly, the participant sample, consisting of only 10 players, totaling 30 inputs for analysis, is relatively small statistically. This implies that the representativeness of the results may be considered limited, requiring caution in generalizing conclusions to the entire RPG category, given the study's case-specific nature.

Moreover, a significant limitation lies in the specific selection of analyzed RPG subgenres, including the *Rogue*-like RPG, tactical RPG, and action RPG subgenre, while excluding the JRPG subgenre. This omission implies that the results analysis did not incorporate the particularities and nuances associated with JRPGs, limiting the breadth and generalization of conclusions to the full spectrum of RPG experiences.

The necessity for participants to travel to the location for gameplay is also an important consideration. This condition could have caused discomfort and potentially influenced the willingness to participate in the research. It would be preferable for participants to play in the comfort of their homes, ensuring optimal conditions for engaging in the experience. This aspect could be controlled remotely, using available technological means for this purpose.

An additional limitation inherent in this study lies in its exclusive recruitment of experienced players who are well versed in the RPG genre. This selective sampling approach may restrict the generalizability of findings to broader populations, particularly those comprising individuals devoid of gaming experience and lacking identification with the RPG genre. Exploring outcomes within these contrasting conditions could yield valuable

insights into the nuanced dynamics of narrative immersion and perceived challenge across diverse participant profiles.

The nature of responses provided by participants, based on self-reporting, is a crucial consideration. Individual perceptions of challenge and immersion may be influenced by subjective factors, such as personal preferences and situational contexts, introducing some bias into responses.

The findings of this study may be confined to the specific games chosen for analysis and might not readily extrapolate to lesser-known titles or alternative genres. Additionally, the wide variability in player experiences across different gaming contexts presents a challenge, as the scope of our investigation primarily encompasses RPGs. While we acknowledge the diversity of the gaming landscape, our study's focus on RPGs may limit the generalizability of our findings to broader gaming contexts.

Lastly, the complexity of players' experiences may not have been fully captured by the scales used. It might be necessary to complement the approach with biometric measurement equipment, such as Electroencephalogram (EEG) and Electrocardiogram (ECG) or Galvanic Skin Response (GSR), or the analysis of player emotions through facial expression [42–44], for a more in-depth understanding of the cognitive processes involved.

Therefore, while rich in contributions, this paper needs to be interpreted considering the mentioned limitations.

5.3. Future Work

This paper provides a solid starting point, but there is a vast range of extensions to explore in the correlation between perceived challenge and narrative immersion in video games, especially in the RPG genre. Potential future studies could include the following actions:

- Expanded and diversified sample: Significantly increase the number of participants to obtain a more representative sample. This will allow a more robust understanding of dynamics between challenge and immersion, covering a variety of player profiles, from novices to veterans.
- Comprehensive inclusion of RPG subgenres: Expand the study to encompass all RPG subgenres, including JRPG. This approach will provide a holistic view of correlations across the entire RPG spectrum.
- Individual analysis of subgenres: Develop focused studies on each RPG subgenre, allowing a more detailed analysis of specific correlations in contexts like *Rogue*-like, tactical RPG, action RPG, and JRPG. Subsequently, a comparison between these subgenres can be conducted to highlight differences and similarities.
- Incorporation of advanced biometric/emotional state measures: Integrate biometric measurement techniques such as Electroencephalogram (EEG) and Electrocardiogram (ECG) or Galvanic Skin Response (GSR) or the analysis of player emotions through facial expressions to provide a deeper perspective on cognitive and emotional processes during gameplay. This will allow a more objective and detailed analysis of player responses.
- Specific investigation into online RPGs: Extend the study to include online games, especially Massively Multiplayer Online Role-Playing Games (MMORPGs). This expansion will explore the unique nuances of challenge and immersion interactions in highly social and collaborative video game contexts.
- Extrapolation of methodology to different game genres: Apply the methodology to a variety of video game genres, such as First-Person Shooter (FPS), adventure, puzzle, sports, among others. This approach can provide an interesting comparison of dynamics between perceived challenge and narrative immersion in each of these genres.

The aforementioned list only provides suggestions representing a starting point for future investigations, promising significant advancements in understanding the complex interaction between perceived challenge and narrative immersion in video games. Each proposed research direction will contribute to the expanding knowledge in this dynamic and continually evolving field.

Author Contributions: Conceptualization, J.M.D.; methodology, J.M.D.; validation, J.M.D. and V.C.; formal analysis, J.M.D.; investigation, J.M.D.; resources, J.M.D.; writing—original draft preparation, J.M.D.; writing—review and editing, J.M.D., V.C., V.F. and A.C.; visualization, J.M.D., V.C., V.F. and A.C.; supervision, V.C., V.F. and A.C.; project administration, J.M.D. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of University of Trás-os-Montes and Alto Douro (CE-UTAD) (Doc94-CE-UTAD-2022 on 29 November 2022).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data may be provided free of charge to interested readers by request through the correspondence email.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

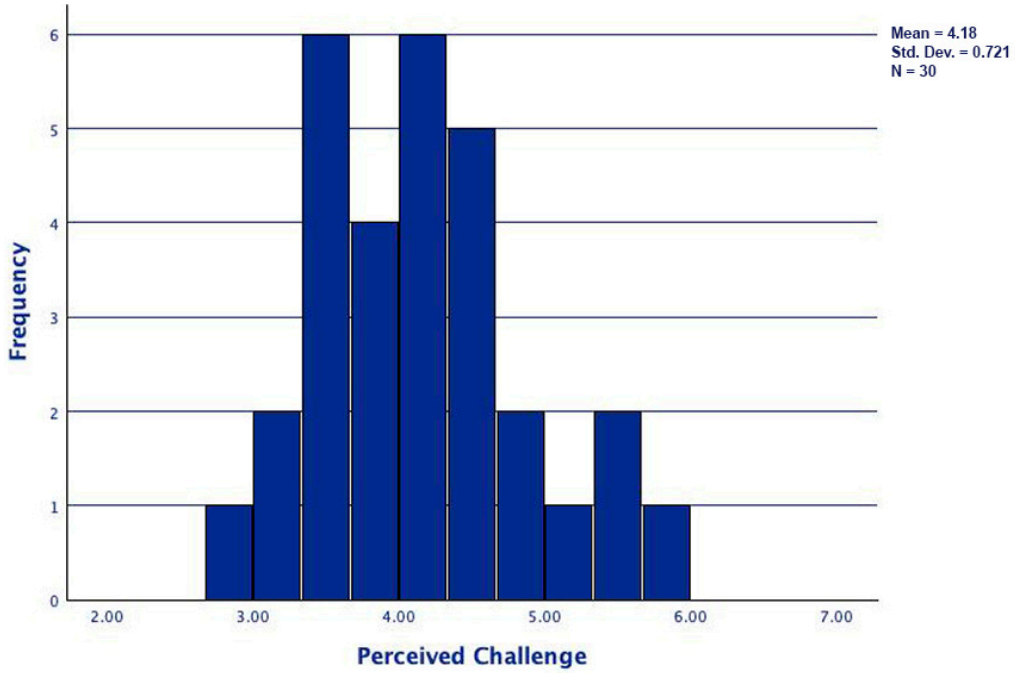

Figure A1. Perceived challenge histogram.

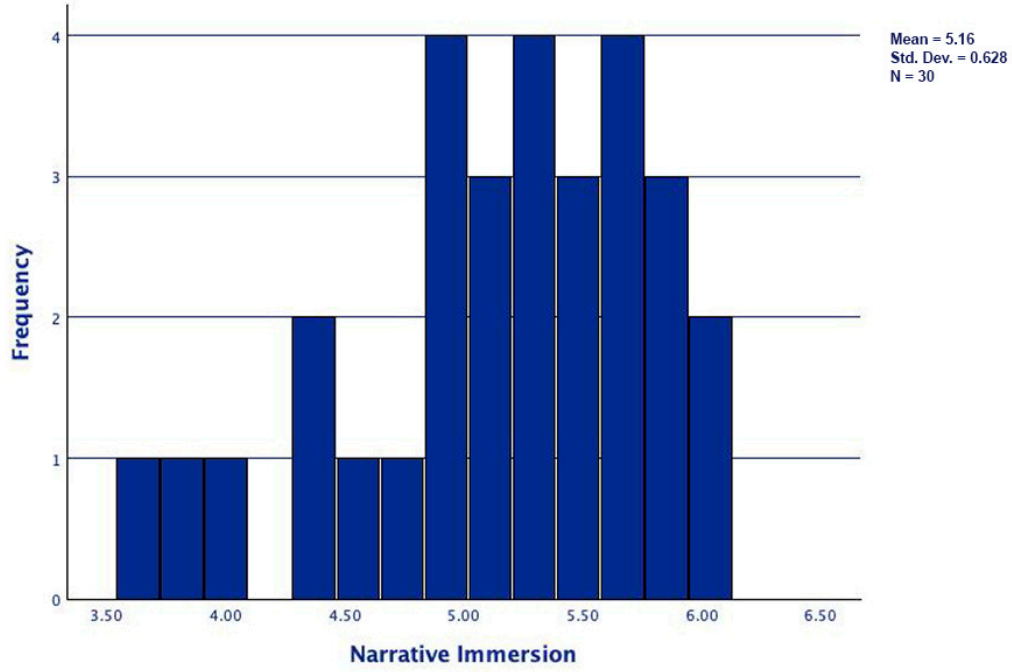

Figure A2. Narrative immersion histogram.

Appendix B

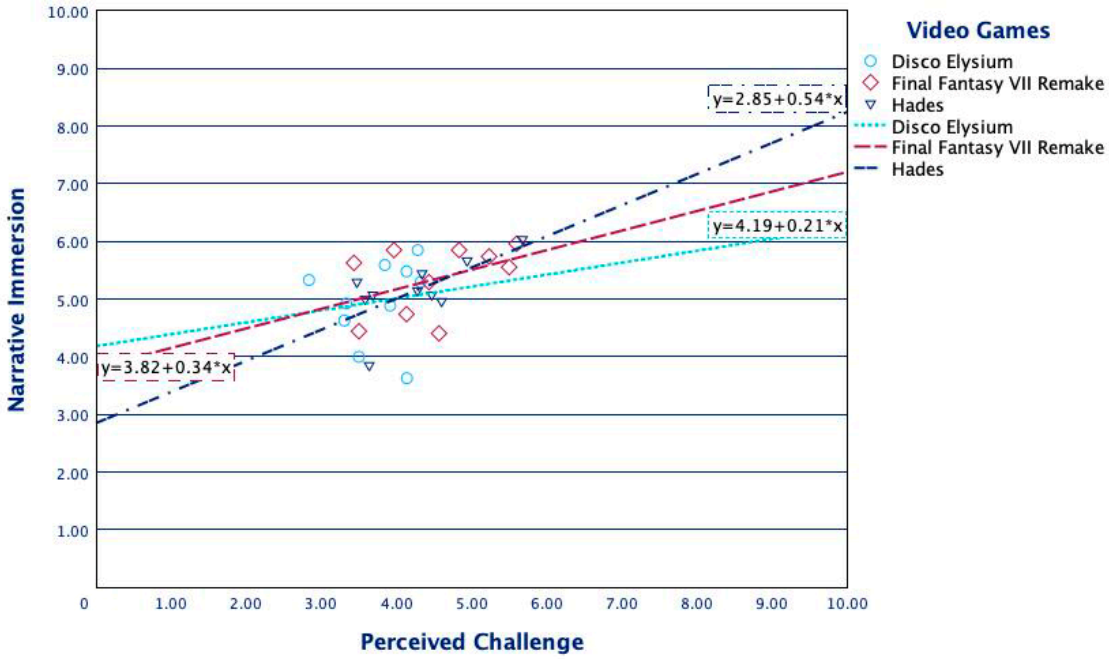

Figure A3. Scatter plot illustrating the relationship between perceived challenge (CORGIS) and narrative immersion (QPICGN) in the three case studies.

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