LUNDS UNIVERSITET
Ekonomihögskolan

Institutionen för informatik

"Killing Big Monster"- Games-as-a-Service

A Qualitative Study on Players' Value Perceptions

Kandidatuppsats 15 hp, kurs SYSK16 i Informationssystem

Författare: Love Karlqvist
Måns Sjöstedt

Handledare: Niki Chatzipanagiotou

Rättande lärare: Paul Pierce
Benjamin Weaver

“Killing Big Monster” – Games-as-a-Service: A Qualitative Study on Players’ Value Perceptions

SWEDISH TITLE: “Killing Big Monster” – Games-as-a-Service: En kvalitativ studie om hur spelare uppfattar värde

AUTHORS: Love Karlqvist and Måns Sjöstedt

PUBLISHER: Institutionen för informatik, Ekonomihögskolan, Lunds universitet

EXAMINATOR: Osama Mansour, Docent

SUBMITTED: May, 2024

DOCUMENT TYPE: Bachelor’s thesis

NUMBER OF PAGES: 55

KEYWORDS: Game-as-a-Service, Theory of Intrinsically Motivating Instruction, Hedonic Information Systems, Game design, World of Warcraft, Qualitative Research.

ABSTRACT:
This bachelor's thesis investigates the perspectives of players in live service games, focusing on World of Warcraft: Dragonflight and the Game-as-a-Service (GaaS) model. Through a qualitative online survey conducted among purposively selected participants of online communities, players' perceptions of various game aspects were collected and analyzed, revealing a preference for features that provide a sense of progression, achievement, social engagement, and immersion. The findings suggest that Malone's (1981) Theory of Intrinsically Motivating Instruction needs modification to accommodate the social aspect of multiplayer games. The bachelor’s thesis contributes to understanding player preferences in social live service games, aligning with existing literature and enhancing the applicability of Malone's theory. The study also highlights the importance of prioritizing key features in GaaS product development to enhance player retention. Developers can use this insight to create more appealing products tailored to player preferences, ultimately contributing to the continuous improvement of games in accordance with specific player fantasies and socialization needs.

SAMMANFATTNING:
Denna kandidatuppsats undersöker spelarnas perspektiv i live service-spel, med fokus på *World of Warcraft: Dragonflight* och modellen *Game-as-a-Service* (GaaS). Genom en kvalitativ onlineundersökning genomförd bland ett avsiktligt urval av deltagare i onlineforum samlades och analyserades spelarnas uppfattningar om olika spelaspekter, vilket visade en preferens för spelfunktioner och -innehåll som ger en känsla av framsteg, åstadkommande, socialt engagemang och uppslukande. Resultaten antyder att Malones (1981) *Theory of Intinsically Motivating Instruction* behöver modifieras för att rymma den sociala aspekten av spel med flerspelarläge. Kandidatuppsatsen bidrar till förståelse för spelarpreferenser i sociala live service-spel, i linje med befintlig litteratur och förbättrar tillämpningen av Malones teori. Studien belyser också vikten av att prioritera nyckelfunktioner i GaaS-produktutveckling för att bättre behålla spelare. Utvecklare kan nyttja denna insikt för att skapa mer tilltalande produkter anpassade till spelarpreferenser, vilket i slutändan bidrar till kontinuerlig förbättring av spel i enlighet med specifika spelarfantasier och socialiseringsbehov.

Acknowledgments

First and foremost, we would like to extend our gratitude to our supervisor, Niki Chatzipanagiotou, for guiding and supporting us during the research process. We are grateful for her availability as a mentor during the process, and the valuable feedback she provided on our bachelor’s thesis’ many iterations.

Furthermore, we would like to thank all the participants who took part in our study, as none of this would have been possible without them. We would also like to thank our friends who play World of Warcraft for helping us improve the survey, by participating in our pilot study. Lastly, we are thankful for our friends and families, who proofread the work and provided valuable feedback in the final stages of the process.

Thank you all!

May, 2024
Love Karlqvist & Måns Sjöstedt

Table of Contents

Figures

Tables

Table 1: Glossary

Term	Definition
Massively Multiplayer Online Roleplaying Game (MMORPG)	A game that allows a large number of simultaneous players using avatars to interact within a persistent world.
Guild	An in-game association of players, enabling cooperation and socialization.
Instance	An area containing enemies and other challenges within the game, which allows only a group consisting of a certain number of players to enter at once.
Dungeon	A type of instance which a group of up to 5 players are allowed to take on.
Raid	A type of instance which a group of 10 - 30 players are allowed to take on. A raid is usually more challenging than a dungeon.
Mythic / Mythic Plus	More difficult versions of raids and dungeons
Hardcore player	A player who dedicates a lot of time and effort to video games. In World of Warcraft, such a player usually pursues difficult raids or competitive PvP.
Casual player	A player who typically spends less time playing video games, and is usually not concerned with competitive play or difficult challenges.
Metagaming	Using information found outside of the game to gain advantages.
Player versus Player (PvP)	Gameplay that allows players to battle other players.
Player versus Environment (PvE)	Gameplay where players battle against computer-controlled enemies and complete computer-controlled challenges.
Content Cycle	Periodic releases of new updates and features.

1 Introduction

Hedonic information systems are studied in this bachelor’s thesis, focusing specifically on video games in the category of Game-as-a-Service (GaaS). The research aims to explore the user perspective within GaaS products, seeking to identify and prioritize the aspects that players perceive as valuable. Specifically, the video game World of Warcraft: Dragonflight is presented as an example of such a product; this game’s users are presented as the specific population which is targeted in this study. By understanding user preferences, the study aims to shed light on how different features within GaaS products can be optimized to enhance user satisfaction and engagement.

1.1 Background

The field of Information Systems (IS) consists of many different application areas; one such area is that of hedonic information systems (HIS). Video games are a type of hedonic information system (Esteves, Valogianni and Greenhill, 2021). Since its advent, the video game industry has been a consistently growing market, with ever-increasing revenue on a yearly basis. According to a report from Inkwood Research (2024), the total video game market value reached $350 billion USD during 2022 and is expected to keep growing. Over the years, new genres and business models have emerged, and different trends have been dominant within the market. Historically, video games have been delivered as fully contained and discrete products, sold to consumers with no promise of future improvements or updates. One relatively recent development is an alternative to this concept, namely the idea of *live service games*. Live service games are an exceedingly popular business model in today’s game industry. According to a report from Griffin Gaming Partner (2024, p.10), *“95% of game studios are either working on or intend to release a live service title”*. This new business model is a form of continuous delivery, which has been made possible in part due to significant technical advancements within video game development, and new digital distribution platforms for video games. A more common term to describe the model used within academic contexts is Game-as-a-Service (GaaS). These games are updated and iterated upon continuously over time, with the aim of keeping players engaged with and interested in them for longer than with traditional delivery models (Heinze and Vaudour, 2020). They can also receive patches and bug fixes over time, alleviating some of the frustrations users may have, as well as catering to their changing preferences over time.

While many studios release games using the GaaS model today, World of Warcraft (WoW) stands out as one of the early and still central examples. WoW is a massively multiplayer online roleplaying game (MMORPG). According to Steinkuehler and Williams (2006), a Massively Multiplayer Online (MMO) game is a video game played online, supporting many concurrent players; players use avatars to interact with the game world and their fellow players. MMORPGs are among the most common types of MMOs, combining the aspects of aspects of

traditionally singleplayer computer roleplaying games with a multiplayer game world. In WoW, the player can pick one of several races and one of several classes for their player character, determining both the aesthetics and gameplay mechanics of their play. These choices significantly affect their role in both cooperative and competitive gameplay modes. The core gameplay loop (the common pattern of actions performed consistently throughout the entire game) consists of striving towards increasing the power of one’s avatar by obtaining in-game equipment, *levelling up* and completing quests, and overcoming increasingly difficult challenges (whether alone or with groups of other players) made possibly by said increase in avatar power. These gameplay elements are commonly occurring in MMORPGs in general, and are also true of WoW. The game is and has been using the GaaS model since its initial release two decades ago, in that it receives continuous updates. New features and content have been added, it has received fixes to bugs and issues, and changes have been made to systems over time.

Given the role of GaaS products within the video game market, and the business model’s dependence on maintained engagement from its users to generate revenue, the topic of this bachelor’s thesis is the exploration of the player perspective in GaaS products, specifically the perceived value of different aspects of live service games.

1.2 Previous Research and Problem Identification

He (2021) studied player attitudes and the financial aspects of the Game-as-a-Service (GaaS) and Game-as-a-Product (GaaP) models. The research suggests that while the GaaS model benefits studios financially by providing a steady revenue stream without the need for extensive development, players may not always perceive the same value in this model. Players often pay full price for games that may not meet their expectations initially, as development and improvement are ongoing. This study points to the fact that the interests of consumers and game studios are not necessarily in line with regards to the use of the GaaS and GaaP models.

Kostić and Tomić (2022) examined microtransactions in GaaS and other games, noting that GaaS games often rely on them for profit. It is worth noting that some games utilizing the business model employ a subscription-based payment strategy to profit, and do not necessarily rely on players making continuous purchases of in-game resources. Kostić’s and Tomić’s (2022) survey revealed that players were reluctant to spend money on microtransactions cited not needing additional content and being unwilling to pay for it. Similarly to the views expressed by participants in He (2021), where the participants were concerned about receiving a worse quality product with the modern GaaS business model, the data collected by Kostić and Tomić (2022) also indicate some concern for alternative payment strategies to the traditional GaaP model.

Another aspect of GaaS which has been studied is its impact on developers. This was examined by Dubois and Weststar (2021) with a focus on the work and identity of video game developers. The study shows that many things differ between video game developers (VGD) on GaaS and GaaP projects. These differences impact both types of VGDs affecting their positions and livelihood. The study makes it clear that it is an ongoing change which will have considerable impact on video game developers in the coming years. They conclude the study by encouraging further research on the servitization across the global game industry, identifying a knowledge gap within the subject.

In another recent study, conducted by Harviainen, Lehtonen and Vesa. (2022), several game development elements within the mobile game industry which negatively impact players are highlighted. While this study is aimed at the development of mobile games, it emphasizes value co-destruction and value co-creation as being an integral part of games in general, and how they impact the relationship between players and developers. This study points out that understanding and involving the player base to some degree in the development could be beneficial for the game studios.

Although some previous research exists on Game-as-a-Service (GaaS), this bachelor’s thesis research examines GaaS as a business model. Researchers such as He (2021) and Harviainen, Lehtonen and Vesa . (2022) have highlighted various issues affecting players of GaaS products. However, for successful GaaS development, it is crucial for HIS developers to understand which features in their games are most valued by users (i.e. players). By studying player perceptions of features released in live service games, insights into these preferences can be gained. Since there is a lack of research on players' perceived value within GaaS from a qualitative perspective, this bachelor's thesis aims to help bridge the gap by employing a qualitative approach.

1.3 Research Purpose and Research Question

The purpose of this bachelor’s thesis is to investigate how the value of different aspects of a live service game is perceived by different players, and to see whether or not it aligns with what they usually enjoy in video games. From a practical perspective, the aim is for this knowledge to benefit the development of live service games by allowing HIS developers to prioritize features that their player base perceives as valuable. It could also help highlight features that the players are likely to enjoy based on what they have played previously, which could help HIS developers improve these features over time.

Based on the stated purpose, the research question of this bachelor’s thesis is:

How do players of online live service games perceive the value of different game aspects?

1.4 Delimitations

Due to the scale of the live service video game market, it is not feasible to study all titles in the market. For this reason, the focus of this study is narrowed to a more specific scope, where a specific game within the live service market is taken as an example and studied. For this bachelor’s thesis study, the MMORPG World of Warcraft has been selected. Furthermore, only the most recent iteration of this game, the expansion pack Dragonflight, will be studied. While several other games have been considered, WoW is a suitable choice as it has been a centerpiece of the live service market since 2004, and the developers were early to adopt the GaaS model. Furthermore, WoW still has a large number of active players today, where many of them are active in various online communities, making the process of finding participants easier than with less popular games.

2 Literature Review

The Literature Review chapter describes the evolution of Game-as-a-Service within the domain of Hedonic Information Systems, in the field of Information Systems. It highlights the shift towards the continuous development present in GaaS products, in contrast to traditional game development cycles. The literature was curated through a systematic search strategy to understand player perspectives and preferences. The chapter also explains Malone's (1981) Theory of Intrinsically Motivating Instruction which was chosen as the primary theory for this bachelor's thesis.

2.1 Search Strategy

During the early stages of the literature review, primarily scholarly databases provided by Lund University through LUBSearch were used to find literature. To ensure that all literature used in this bachelor's thesis was reliable, only peer-reviewed literature was used.

When searching, several keywords were used to refine the search. Some keywords used (on their own, or in combination with each other) were: “Game-as-a-Service”, “Software-as-a-Service”, “video games”, “World of Warcraft”, “immersion”, “difficulty”, “challenge”, “leaderboards”, “live service”, and “player types”. Furthermore, the Boolean operators “AND” and “OR” were used to get matches closer to the topic of study. The goal for this bachelor's thesis was to only include literature from the last 10 years. However, an exception was made with one article being published in 2013.

When doing an initial reading of an article, the abstract, introduction, and conclusion were read first. Some of the main concepts introduced in the article were then skimmed. Once an article was deemed relevant, it was read through more thoroughly, to generate a full understanding of it.

Below is the selection of articles which was ultimately arrived at.

Table 2: Literature overview

Literature	Database	Motivation
Alexander, J.T., Sear, J. and Oikonomou, A., 2013. An investigation of the effects of game difficulty on player enjoyment. *Entertainment computing*, *4*(1), pp.53-62.	ScienceDirect	Shows how difficulty influences player experience based on factors such as prior experience and the amount of effort put into the gameplay.
Alexander, P., 2017. Knowing how to play: Gamer knowledges and knowledge acquisition. *Computers and Composition*, *44*, pp.1-12.	ScienceDirect	Study which shows how knowledge about systems in a game can be a powerful motivator.
Dubois, L.E. and Weststar, J., 2022. Games-as-a-service: Conflicted identities on the new front-line of video game development. *New Media & Society*, *24*(10), pp.2332-2353.	Social Sciences Citation Index	Talks about how the GaaS model has affected practices within the video game development industry.
Vaudour, F. and Heinze, A., 2020. Software as a service: Lessons from the video game industry. *Global Business and Organizational Excellence*, *39*(2), pp.31-40.	Business Source Complete	Brings a better understanding and overview of Game-as-a-Service.

Hammad, N., Hsieh, M., Harpstead, E. and Hammer, J., 2021, October. Understanding Player Retention Strategies in Animal Crossing: New Horizons. In *Extended Abstracts of the 2021 Annual Symposium on Computer-Human Interaction in Play* (pp. 163-167).	Scopus	A study displaying what impact continuous updates have on games in terms of player retention.
Ross, T.L. and Collister, L.B., 2014. A social scientific framework for social systems in online video games: Building a better looking for raid loot system in World of Warcraft. *Computers in Human Behavior*, *36*, pp.1-12.	Inspec	A study which examines social behavior and expectations of social behavior in online games.
Harviainen, J.T. and Rapp, A., 2018. Multiplayer online role-playing as information retrieval and system use: an ethnographic study. *Journal of Documentation*, *74*(3), pp.624-640.	Inspec	A paper which explores games as information systems in which activities are largely explained as information retrieval tasks; the paper is relevant for discussing game sub-systems.
Rapp, A., 2017a. Designing interactive systems through a game lens: An ethnographic approach. *Computers in human behavior*, *71*, pp.455-468.	ScienceDirect	A study on several different aspects of video game design, giving some recommendations for these.
Rapp, A., 2017b. From games to gamification: A classification of rewards in World of Warcraft for the design of gamified systems. *Simulation & Gaming*, *48*(3), pp.381-401.	Business Source Complete	Discusses types of rewards within video games, and how they can be used to motivate and engage the players of a game.
Rapp, A., 2021. Time, engagement and video games: How game design elements shape the temporalities of play in massively multiplayer online role-playing games. *Information Systems Journal*, *32*(1), pp.5-32.	Business Source Complete	This study shows how different elements of video games influence the amount of time players spend in-game.
Brühlmann, F., Mekler, E.D., Tuch, A.N. and Opwis, K., 2017. Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in human behavior*, *71*, pp.525-534.	ScienceDirect	The effectiveness of gamification on feelings of competence and as an enhancer for intrinsic motivation as well as performance quantity; useful for discussions on the effects of certain game mechanics.
Fraser, J., Katchabaw, M. and Mercer, R.E., 2014. A methodological approach to identifying and quantifying video game difficulty factors. *Entertainment Computing*, *5*(4), pp.441-449.	ScienceDirect	On video game difficulty and mechanics for difficulty adjustment, as well as their effects on players.
Strojny, P., Strojny, A. and Rębilas, K., 2023. Player involvement as a result of difficulty: An introductory study to test the suitability of the motivational intensity approach to video game research. *PLOS ONE*, *18*(3), pp. 1 – 16	Academic Search Complete	Study which finds that increasing difficulty and engagement are positively correlated until the point is reached where difficulty becomes too great to overcome.
Sigailov-Lanfranchi, J., 2019. Impact of Different Levels of Difficulty on Immersion in Video Games, *CEUR Workshop Proceedings* (pp. 248-259).	Scopus	A study examining the relationship between immersion and difficulty, used to discuss findings related to these factors.
Carstensdottir, E. and Larsen, B.A., 2021. Wrestling with destiny: storytelling in perennial games. In *Interactive Storytelling: 14th International Conference on Interactive Digital Storytelling, ICIDS 2021, Tallinn, Estonia, December 7–10, 2021, Proceedings 14* (pp. 236-254). Springer International Publishing.	Springer Nature E-books	A paper on Game-as-a-Service and the effect on storytelling when story is released over the course of several game updates, the paper gives context to the aspect of storytelling in live service games.
Alves-Filho, S.E., Paradeda, R.B., Freitas, G. and Souza, A.A., 2023, August. The Influence of Well-Dressed NPCs on Player Perception, Immersion and Decision-Making in Gaming. In *2023 IEEE Conference on Games (CoG)* (pp. 1-8). IEEE.	IEEE Xplore Digital Library	A study on the effects of NPCs on player perceptions, immersion, and decision-making, used when discussing findings on immersion.

Cesário, V., Ribeiro, M. and Coelho, A., 2023, Design Recommendations for Improving Immersion in Role-playing Video Games: A Focus on Storytelling and Localisation, *Interaction Design and Architecture(s) Journal*, 58, pp. 207 – 225	Directory of Open Access Journals	Research on how storytelling and localization affects players' perceptions of elements related to immersion; it is used to discuss the fantasy aspect of video games.
Martončik, M. and Lokša, J., 2016. Do World of Warcraft (MMORPG) players experience less loneliness and social anxiety in online world (virtual environment) than in real world (offline)?. *Computers in Human Behavior*, *56*, pp.127-134.	ScienceDirect	A study pointing out the importance of the social aspects within games as effects on loneliness and social anxiety; it is used in discussing recreation.
T. W. Malone, 1981, Towards a Theory of Intrinsically Motivating Instruction, *Cognitive Science*, 5(4), pp. 333 – 369	Scopus	Commonly used theory within game design to analyze player enjoyment.
J. J Esteves, K Valogianni, A Greenhill , 2021, Online social games: the effect of social comparison elements on continuance behaviour, *Information & Management*, 58(4), pp. 1 – 15	ScienceDirect	Research showing and discussing the importance of allowing competition within games and how it affects players perceptions; this is utilized in discussions about competitive drive.

2.2 Hedonic Information Systems

Video games are a type of hedonic information system, where the aim is to provide the users with an enjoyable experience (Esteves, Valogianni and Greenhill, 2021). In contrast to information systems found in organizational contexts where the users might be required to continue using them, games are hedonic information systems which rely on users' continuous experiences despite being free to stop interacting with them (Rapp, 2021). As these systems rely on users' voluntary engagement, HIS developers need to develop games with that fact in mind. Failing to do so will likely lead to a loss of users, as players may stop engaging with games they do not find enjoyment in.

2.3 Game-as-a-Service

Traditionally video games have had a very straightforward cycle, where a game is typically developed, sold at a retailer, purchased by a player, and played by them until they complete it. These games usually had a finite, pre-determined amount of content to engage with, and once the game had been completed, the only option for the player was to either replay it, wait for a sequel, or move on to another game (Heinze and Vaudour, 2020). However, with technical developments in internet infrastructure giving rise to new possibilities such as digital storefronts and the delivery of digital goods, new opportunities were identified. The delivery of video games was no longer restricted to the physical transfer of a copy of a game burned on a disc from the publisher to the customer. This, along with the trend of servitization gave rise to the Game-as-a-Service concept (Heinze and Vaudour, 2020). This concept steers away from the traditional delivery system, and rather than game studios starting development of a new game after the first one is released, the development is instead focused on the same game; it is developed continuously. This change has impacted video game design philosophy and practices (Dubois and Weststar, 2021).

The model in Figure 1 presents some value propositions relevant for this bachelor’s thesis.

<table>
<tr>
<td rowspan="2">Key Partners:
• Publishers and editors
• External development teams
• Video game distributors (physical and/or digital)
• External software producers</td>
<td>Key Activities:
• Efficient software development
• Production: marketing, designing, and producing
• Platforms: updates, improvements, IT, promotions</td>
<td rowspan="2">Value Proposition:
• Constantly changing gaming experience
• New content: new quests, skin, map, characters, skills, weapons, etc.
• Fixed bugs
• Feedback and communication from editors/teams</td>
<td>Customer Relationship:
• Digital personal assistance
• Self service/FAQ
• Communities: forums and feedback
• Development of the players’ engagement</td>
<td rowspan="2">Customer segments:
• Gamers</td>
</tr>
<tr>
<td>Key Resources:
• Physical: production studio, video game stores
• Intellectual: CRM, production software
• Human: skilled development team
• Finnacial: editor’s capital</td>
<td>Distribution Channels:
• Digital stores mainly
• Physical stores</td>
</tr>
<tr>
<td colspan="3">Cost Structure:
• Production
• Customer support
• Technical infrastructure</td>
<td colspan="2">Revenue Streams:
• Subscription
• Season pass
• Microtransaction
• Advergaming</td>
</tr>
</table>

Figure 1: GaaS business model (adapted from Heinze and Vaudour, 2020, p. 34)

As seen in Figure 1, the GaaS model also enables HIS developers and game studios to communicate and develop a relationship with their customers (i.e. players) more actively than with traditional models. Having a good relationship with players is important since understanding them helps developers and game studios monetize their games (Heinze and Vaudour, 2020). This relationship might also help keep players around for longer. Figure 1 can also be used to give further context to this bachelor thesis’s aim, given that it is to investigate the ever-changing game experience from the customer perspective.

One central aspect of video game design which has changed with adoption of the GaaS model is regarding how much time players need or are expected to put in to finish a given game, since the GaaS model requires players to continue playing or coming back to play the game regularly (Heinze and Vaudour, 2020). This can be achieved by creating gameplay loops that have no clear ending or goal, or by continuously updating the game and providing new features, often referred to as downloadable content (DLC) (Heinze and Vaudour, 2020). In order to keep players engaged, all DLC does not have to be new content, but can also include improvements to current in-game systems, resulting in an overall more valuable product; this allows the game to keep flourishing and helps it attract new players (Hammad et al., 2021).

2.4 System Design in Video Games

Video games are complex information systems which, at least for the purposes of this bachelor’s thesis, also accommodate many simultaneous users over the internet. As hedonic information systems, their users may have differing motivations for using them, and as such the design of their sub-systems often need to cater to many different user desires.

When designing sub-systems within MMORPGs which distribute rewards for completing group challenges, fairness is an important point for developers to consider. Over the course of the history of World of Warcraft, through its many permutations, its various systems for determining which player gets which reward in an instance (i.e. a raid or dungeon) have changed several times. In the case of World of Warcraft, previous iterations of these systems put a large degree of this decision-making process in the hands of players themselves. This led to players quite frequently perceiving others as more selfish, and themselves as less selfish, when determining who should receive a certain reward (particularly with regards to the loot distribution system studied by Collister and Ross (2014)). Promoting a fair distribution of scarce rewards can potentially be achieved by moving the decision-making from the players to automatic systems which distribute rewards for each player based on a combination of random chance and the actual *need* each player has for the rewards, based on the type of character they are playing (Collister and Ross, 2014).

When designing video game sub-systems, enabling players to identify with their in-game representation (i.e. player character or avatar) has been shown to enhance immersion (Rapp, 2017a). This extends beyond the avatar’s the current state, where evoking mental images of possible future states of the avatar is also valuable in encouraging the strive towards them, which could be done through presenting attributes for the player to increase (Rapp, 2017a). One such example could be presenting a desired in-game ability which the player character has yet to obtain.

Another concept which emerges within the literature of system design in video games is the idea of different temporalities affecting player engagement in different ways. Linear temporality is produced by practices which progress the player character in some way (Rapp, 2021). This encourages a desire for the player to play more. Circular temporality is produced by practices which are repetitive and, in some sense, predictable in their nature, such as gathering the same in-game resources regularly and continuously (Rapp, 2021). This encourages the player to play regularly. Shared temporality is produced by cooperative endeavors between players. It encourages retention and reduces player churn[1], as well as encourages players’ involvement in the activities associated with linear temporality (Rapp, 2021). These temporalities can be used to create a very strong form of engagement from players, which lasts over time. Furthermore, some of the tasks which typically contribute to linear temporality, such as quests rewarding the player character with increasingly powerful equipment and experience points, also need to be accessible by the player at the right moment in time (Rapp, 2021). A player should optimally be given access to a particular task at a point in time where they have both the skills to complete the challenge, and when completing it is valuable enough to warrant spending the time and effort to do so (Harviainen and Rapp, 2018). This ensures that the empowering process of the player character is conducive to more linear progression, which is clearly central to linear temporality (Rapp, 2021).

MMORPGs contain explicit and implicit social structures which determine how players interact with each other, and allow for cooperation and competition. When developing games of this type, literature suggests that providing support for these structures to take form by creating a general architecture that players can use to organize themselves in social groups is an idea that provides value (Rapp, 2017a). One such example is the guild system in World of Warcraft, where a larger number of players can form a group to share resources and information, as well as organize themselves when completing group challenges (such as raids). Such a sub-system

[1] Churn: The loss of customers who have previously been using a product or service.

can cater to different desires, both with regards to being part of an online community, as many players like to socialize with their guild members, and as a means of finding other players to cooperate with for tasks which they cannot complete alone (Rapp, 2017a). The World of Warcraft guild system could be considered a good example of a system which ultimately serves to increase user engagement both through providing the means for digital communities to spring up, as well as decreasing friction between players' in-game goals and their progress towards them (as it increases the likelihood of cooperation by that same token).

With regards to pointing players in the right direction as far as progression within the game goes, another aspect of designing sub-systems for games is for players to be given clear incentives for progression. When a player is first starting out in a game, reliance on extrinsic incentives is arguably preferred, as they still have not fully learned all the ways of using the system (Rapp, 2017a). Granting the player rewards for correctly completing tasks can be especially valuable in the beginning of the player's journey, as it highlights the progress they are making towards their goals. Once the player has more experience and knowledge, more intrinsic incentives can be relied on, such as the need for self-reliance and the capacity of solving difficult problems (Rapp, 2017a). For instance, providing the player of an MMORPG with in-game rewards for relatively easy quests in an early stage of the game, might foster a desire to perform well in future quests, even if the rewards become less numerous and more hard-won. Another point to be made is that during the early parts of a player's journey, more constraints can be put in place, so as not to overwhelm them with opportunities (Rapp, 2017a). Guiding players in the right direction and encouraging desire to play by reinforcing a sense of progression is a design task which can be accomplished by appropriately designed reward mechanisms and constraints over the course of the player's journey.

2.4.1 Challenge

How challenging systems within video games are can prove to be a deciding factor for the degree to which players engage with games and might cause players to stop interacting with games completely when the level of difficulty is too high (Strojny et al., 2019). However, not providing enough of a challenge will also impact players' engagement with games; with this is mind it is important to find a balance when increasing the difficulty of the game for a player. This in turn also increases engagement, but the increase cannot be so steep that it is perceived as too difficult for the player in question (Strojny et al., 2019). One way of accomplishing the right balance and increasing the amount of challenge over time is to start at a low level of difficulty, where the player is given a clear path to follow which allows them to overcome and learn from easy challenges. At later stages the player will not require as much hand-holding to successfully take on and overcome challenges, and thus the difficulty can increase (Rapp, 2017a). This could also be considered a way to optimize the availability of different tasks to the player, taking into consideration at what point the player has the skill and knowledge to complete a given challenge, and also ensuring that the player will consider completing it rewarding enough (Harviainen and Rapp, 2018).

There are other aspects which influence how a player experiences the difficulty of challenges. How much prior experience players have, and how much effort they are willing to put into the game are two such factors. The level of prior experience can affect how players perceive their self-efficacy, and in turn their ability to judge what level of difficulty will be appropriate to take on (Alexander, Sear and Oikonomou, 2013). Furthermore, casual players may find very easy activities enjoyable even if they provide no significant challenge. In contrast, hardcore players

would likely opt for more difficult challenges and find enjoyment in them even if they do not overcome them (Alexander, Sear and Oikonomou, 2013).

Adequately balancing a game in terms of challenge or difficulty requires an understanding of which game elements contribute to difficulty, and in what way. Identifying and computationally testing these elements quickly becomes a demanding task when the challenges and sub-systems involved get more complex, since the simulations required quickly grow in required computing power (Fraser, Katchabaw and Mercer, 2014). A hurdle with the computational approach to understanding challenge difficulty is predicting player choices (given their large amount of freedom) which need to be captured and represented in these simulations to get a complete understanding of possible player actions (Fraser, Katchabaw and Mercer, 2014). In conclusion, taking into consideration the difficulty aspect of designing and developing features for a video game is important, since it to some degree drives engagement with the game (Strojny, Strojny and Ręblas , 2023), and might also be correlated with how immersed a player is (Sigailov-Lanfranchi, 2019).

2.4.2 Competition

Giving players the ability to compare themselves to others has been a widely used tool within games, providing a possibility for them to compete against each other. This contributes to several effects, one of them being to keep players engaged (Rapp, 2017a). When this tool is available within group structures (such as guilds) it is important to consider how competition is implemented; competition over a limited resource may have a negative impact on the social dynamics, and result in aggressive behavior (Rapp, 2017a). However, if competition is implemented in such a way that it is oriented towards achieving goals or overcoming challenges, it can lead to the players feeling a sense of accomplishment and belonging to the group, leading to more engagement with the group and the game (Rapp, 2017a).

Viewing competition from the perspective of a solo player, the player’s comparison to others impacts factors such as how much enjoyment the player experiences, their self-efficacy and continuance intention (intention to continue using or reusing a system). This depends on how the player relates to those ahead or behind them in term of progression. Looking up to players ahead of them, and not identifying with players behind them, positively impacts the aforementioned factors (Esteves, Valogianni and Greenhill, 2021). With this in mind, a comparative system promoting this specific dynamic could be designed by utilizing common video game artefacts such as levels, leaderboards, or points (Brühlmann et al., 2017). Even though comparisons and competition using certain dynamics increase continuance intention (Esteves, Valogianni and Greenhill, 2021), they do not promote higher quality of play but rather increase quantity of play (Brühlmann et al., 2017). However, this fact should not be problematic for the game studio since they rely on the quantity of player performance rather than quality.

2.4.3 Storytelling

Storytelling within GaaS products enters a new realm of possibilities when compared to games using the GaaP model. The most unique possibility is to expand the story over time since the GaaS model calls for continuous updates to the game, and the story is part of these updates (Carstensdottir and Larsen, 2021). However, there are several tools used in storytelling which impact how the player experiences the story, and how immersed they feel. One such tool is non-player characters (NPCs) which are widely used within games as either part of the story or to

deliver it. How NPCs are designed and behave is shown to impact how the player connects with the story and experiences the game. When utilizing NPCs to increase the level of immersion players experience, the designers can head in a realistic direction, making the NPCs’ behavior more colorful (Alves-Filho et al., 2023). If this is not considered, or done in a poor fashion, player interactions with NPCs can be experienced as stale or flavorless, leading to them not interacting with the NPCs unless necessary (Hammad et al., 2021).

In the online world where games are available to a multitude of countries, language becomes another central part of what affects immersion when considering storytelling. The localization of video games is a key part of engaging players from different geographical locations speaking different languages, allowing them to fully understand and interact with the story in their preferred language (Cesário, Ribeiro and Coelho, 2023). The most important element to localization is not only translating text, but also recording voice-overs in the translated language, as these factors are both shown to greatly impact player ability to engage with the story (Cesário, Ribeiro and Coelho, 2023).

Utilizing these elements and the GaaS model to develop and design immersive storytelling, which can be expanded on over time, can create a story which will be perceived by some players as more encompassing and compelling than would be possible with a traditional GaaP product (Carstensdottir and Larsen, 2021). This might allow players to get increasingly immersed over time, as the game world becomes a space that the player can return to.

2.4.4 Progression

Progression is a strong motivator for continued engagement. When systems are designed to reward players for progress in ways which are recognizable to others and improve their ability to conquer new challenges, players invest more time into bettering their relevant in-game skills (Rapp, 2017b). Some types of in-game rewards are flexible in their nature. These rewards help the player progress in the game, but they also provide value through the social dimension; specifically, rewards which are observable by other players, such as hard-fought equipment, motivate players by having social value which might affect the player’s reputation among their peers (Rapp, 2017b). In-game rewards can be viewed as contributing to social status. In addition, rewards can also improve a player’s self-efficacy, in that they are essentially a receipt of the player’s ability to complete a challenge and can further enhance their trust in their own abilities to overcome future, more difficult challenges. Thirdly, rewards which the player has not yet earned can be inspiring and represent something for them to strive towards, creating new goals and orienting them towards these goals as they come across other players which possess them (Rapp, 2017b).

The act of continuously playing a video game, and progressing in it, typically requires trial and error. The first person to come up with a solution to a problem in the game gains what is perceived to them and their fellow players as valuable insight. For some players, the act of learning about the game, generating knowledge about strategies and optimizations of play, acts as a powerful motivator to keep engaging with the game (Alexander, 2017). Knowing a lot about the game can both be perceived as empowering to the player themselves and provide social value.

2.5 Socialization in Video Games

An MMORPG is as much a social environment as it is an information system. Much of the appeal of this type of game comes, as previously mentioned, from the sense of community they offer.

Some of the in-game resources which are necessary to complete certain challenges in an MMORPG frequently require players to perform activities which are not always considered fun or engaging in and of themselves. Monotonous or annoying activities such as gathering herbs to turn into potions in World of Warcraft could be considered less engaging than taking on an exciting boss battle. However, these arguably boring but necessary tasks might grant social rewards which are valuable in maintaining and strengthening the social ties within a group such as a guild (Rapp, 2017b). The potions in this example could be shared among the members of a guild or put to the progress towards a particular collective goal, thus helping to foster a spirit of cooperation within the social context of the guild (Rapp, 2017b). To this point, it is also worth mentioning that a predictor of player happiness when it comes to the social aspect of video games is the expectation a player has on the behavior of other players (Collister and Ross, 2014). Fostering a cooperative environment seems to influence player happiness and encourage completion of more monotonous tasks.

Another aspect of the social function of multiplayer games is their role in decreasing loneliness in the game world. The degree of social activity a player is exposed to seems positively correlated with a decreased sense of loneliness and social anxiety, such as playing with a guild in World of Warcraft (Martončik and Lokša, 2016). However, there is also some indication that players do not engage in all of these previously mentioned pro-social relationships for their own sake, or for reasons which are necessarily altruistic. There is typically a strive towards some sort of social benefit, such as improving one’s standing with other players, or showing off one’s skills and competence (Rapp, 2017b). The sharing of information is often required for the successful completion of in-game objectives; even quests or other game goals which do not explicitly require the involvement of more than one player can still contribute to socialization between players (Harviainen and Rapp, 2018).

2.6 Theory of Intrinsically Motivating Instruction

The Theory of Intrinsically Motivating Instruction was established by Malone (1981). It identifies three primary motivators for the process of learning new information. While the subject of this bachelor’s thesis is not directly related to education or instructional environments, Malone’s findings and theoretical framework are still highly relevant and useful in identifying different types of fun or enjoyment within video games. The three primary aspects of motivation are *Challenge*, *Fantasy*, and *Curiosity* as shown in Figure 2.

I. Challenge
- A. Goal
  1. Personally meaningful goals
  2. Obvious or easily generated goals
  3. Performance feedback
- B. Uncertain outcome
  1. Variable difficulty level
     a. determined automatically
     b. chosen by learner
     c. determined by opponent's skill
  2. Multiple level goals
     a. score-keeping
     b. speeded responses
  3. Hidden information
  4. Randomness
- C. Toys vs. Tools
- D. Self-esteem

II. Fantasy
- A. Intrinsic and extrinsic fantasies
- B. Cognitive aspects of fantasies
- C. Emotional aspects of fantasies

III. Curiosity

Optimal level of informational complexity
- A. Sensory curiosity
  audio and visual effects
- B. Cognitive curiosity
  1. "Good form" in knowledge structures
     a. complete
     b. consistent
     c. parsimonious
  2. Informative feedback
     a. suprising
     b. constructive

Figure 2: Framework for a Theory of Intrinsically Motivating Instruction (adapted from Malone, 1981, p. 357)

2.6.1 Challenge

Challenge is one of the components of what creates motivating instruction. It is key to understand all different aspects of it, and how it affects the level of motivation a user perceives. *Challenge* can be broken down into 4 different elements: *goals*, *uncertain outcomes*, *toys vs. tools* and *self-esteem* (Malone, 1981). These 4 elements are all considered core components of challenges and impact how they are perceived by users.

Goals are an integral part of challenges, since completing a challenge is usually achieved by reaching one or more defined goals. However, these goals can fulfill different purposes when it comes to motivating the user of a system. Even if a goal within an information system consists of the simple execution of a sequence of code on a purely technical level, it can be masked in a fantasy setting, giving the user a relatable greater purpose, which provides intrinsically motivating instruction (Malone, 1981). Furthermore, goals should also be designed to capture the natural goals of a system (Malone, 1981). For example, in a video game, this could be defeating particular enemies or completing the game. When designing a number of specific goals, the designer should enable the user to choose which goals to undertake, allowing them to take on

challenges with appropriate difficulty in relation to their skill, further increasing the motivation (Malone, 1981). Lastly, it is important to provide the user with sufficient feedback, ensuring that they know if they are making progress towards a goal and when they have achieved it (Malone, 1981). The feedback itself becomes motivating as it lets the user know they are getting closer to achieving their goal.

Adding *uncertain outcomes* to user interactions also increases *intrinsic motivation*, since a challenge would not be considered challenging if the user knows what the outcome of their actions will be (Malone, 1981). Adding uncertainty can be done in different ways, and one such way is by designing different levels of difficulty, or by having difficulty depend on how the user is performing. Uncertainty can also be achieved by layering goals, making a challenge comprise sub-goals which add up to the final objective, or by adding goals which pertain to completing the given challenge in different ways (Malone, 1981). One example of how this could be done is by setting an additional goal for a challenge where its success is dependent on the time taken to complete it. Additionally, uncertainty can be achieved by *hiding information* from the user or adding *randomness* into the system (Malone, 1981). The element of *hidden information* can be implemented by requiring a user to figure out some important information on their own, and slowly revealing information over the course of their engagement with the challenge. This contributes to uncertainty by not giving the player all the information they need to complete the challenge immediately, and encourages them to think for themselves. With regards to the effect of *randomness* on uncertainty, it eliminates the possibility of knowing what will happen, leaving the user with only knowing the probability of how likely something is to happen.

It is essential for a user to know what the purpose of a system is when deciding on whether or not to use it for the completion of a challenge. Systems can be categorized into *toys* and *tools* (Malone, 1981). A *tool* is a system designed to help the user undertake a challenge, and a *toy* is a system designed to provide value in itself, not affecting how the user interacts with challenges (Malone, 1981). Since *tools* are used to overcome challenges, they should be easy and intuitive to use. It should be clear how the *tool* should be used, while at the same time not being obvious that the *tool* is in fact a *tool*. It should be portrayed as a natural system to complete a challenge. Within the context of video games, a *tool* could be considered something which helps a player complete a challenge in a game, whereas a *toy* exists and is used for its own sake. While both ought to be enjoyable for the player to use in the game, they are still distinct in their purposes, and only one pertains to completing challenges.

The final factor within the *Challenge* aspect of creating *intrinsically motivating instruction*, is the user’s *self-esteem*. The reason this is considered an important factor is due to how failing or completing a challenge directly impacts the user’s *self-esteem* (Malone, 1981). This is especially important when designing how the user is presented with failure when being provided with feedback on their performance. If this is done poorly or tactlessly it can cause damage to the user’s *self-esteem*, resulting in a perception of the challenge as unmotivating instead of motivating (Malone, 1981).

2.6.2 Fantasy

The *Fantasy* aspect of the theory refers to the themes or fantasies which are encouraged by environments, or the appeal of different fantasies which individuals are exposed to (Malone, 1981). Users of information systems can have emotional needs met by engaging in fantasy-inducing activities. These needs will vary from person to person, and Malone’s (1981) theory holds that designers of *instructional environments* should attempt to cater to needs for different

fantasies, so as to better meet them. Furthermore, learners should be able to project their own fantasies onto an environment in an unconstrained way (Malone, 1981).

A fantasy-inducing environment is one where mental images of things not present in the physical world are generated in its participants. These images can be both physical objects and social situations (Malone, 1981). Virtual worlds within hedonic information systems such as video games can feasibly be considered as highly fantasy-inducing environments.

Within the context of activities with fantastical elements, such as games, the term *fantasy* can be divided into *intrinsic* and *extrinsic fantasies. Extrinsic fantasy* relates to those activities where the exercise of a particular skill is not dependent on the fantasy (Malone, 1981). An example which could illustrate this is that of a trampoline game, where a player needs to enter a number to determine how high their character jumps. If they enter the correct number, the character hits their target. The skill of estimating numeric distances and entering a numeric value based on the estimation could be used for any number of other scenarios; it is not specific to the fantasy. In *intrinsic fantasies*, on the other hand, the skill and fantasy are interdependent. The skill being exercised is itself directly related to the fantasy, and thus inextricably linked to it. In the example of the trampoline game, the skill exercised might (in an intrinsic implementation) involve the player pulling the trampoline down using their mouse pointer, and releasing it to send the character flying towards the target. The theory states that intrinsic fantasies are generally more interesting than extrinsic ones (Malone, 1981).

There are *cognitive* and *emotional* aspects to the *Fantasy* aspect. Regarding the *cognitive aspects* of fantasy, the potential reuse of a skill learned in one

situation in different situations, and the positive effect on memory in provoking vivid mental imagery are both relevant (Malone, 1981). Regarding the *emotional aspects*, the theory claims that fantasies in games derive appeal from meeting the emotional needs of their players (Malone, 1981). Different participants in an environment, such as players of a video game, have different emotional needs. *Emotionally-involving fantasies* are more appealing than others, and designers of environments might want to allow for the projection of an individuals’ own fantasies in an unconstrained way (Malone, 1981). Different types of customization in video games are a possible way to cater to as many diverse fantasies as possible.

2.6.3 Curiosity

Finally, with the *Curiosity* aspect, the right level of *informational complexity* can create an environment which is *novel* and *surprising* whilst still being comprehensible. Some parallels between *Challenge* and *Curiosity* can also be drawn. Both aspects require feedback to confirm the correctness of the user’s attempts, as well as an appropriate level of difficulty.

Regarding *optimal complexity of information*, this element takes into account that the environment within which the learner finds themselves should be individually adjusted in such a way that the information they are exposed to is both *novel* and *surprising* (Malone, 1981). This can be taken to mean that the information is new in an interesting way. In a scenario where the end purpose is purely entertainment, and not education, this remains relevant, as users interacting with a hedonic information system still need to learn the extent of its functionality.

Another side to curiosity outlined in the theory is *sensory curiosity*, meaning those changes in sensory stimuli (e.g. light and sound) utilized in information systems which attract the user’s

attention, leading to *curiosity*. These can be used for the purposes of decoration, fantasy-enhancement, reward, and as a system of representation (Malone, 1981). Within the context of a non-educational setting, these are all still applicable curiosity-evokers. Hedonic information systems use visual and auditory effects to be aesthetically pleasing, trigger user fantasy, reward the user for their interactions, and to represent information in different ways.

Cognitive curiosity means the curiosity of a learner to either fill in gaps in their knowledge, derive a general rule from examples, or determine how to deal with seemingly inconsistent knowledge. (Malone, 1981) In usage of hedonic information systems such as games, the degree of complexity of a game can reasonably affect its use of strategies which trigger this type of curiosity, by presenting information to new (and to a somewhat lesser extent experienced) players in ways which engage these motivators.

The theory established by Malone (1981) holds that structuring a learning environment to be more interesting includes using informative feedback in the following ways: Feedback should be surprising, and reveal underlying consistencies not initially observed by the learner as they are testing their knowledge; feedback should be constructive, revealing to learners that their knowledge is incomplete, and in what ways. Regarding feedback, there are parallels between the *challenge* and *curiosity* aspects of the theory, since they both require it to confirm the correctness of the learner’s attempts (Malone, 1981). In the context of hedonic information systems, this is equally applicable, as users need to expand and change their knowledge about the functionality of the system over the course of its use, to experience the enjoyment it is intended to provide.

2.7 Summary of Literature Review and Theory

The literature review formed the theoretical basis of this work by presenting the main concepts of Game-as-a-Service, system design in video games, and socialization. The literature review along with Malone’s (1981) Theory of Intrinsically Motivating Instruction formed the theoretical framework of this bachelor’s thesis, which is used to understand, analyze and discuss the research findings.

While most of Malone’s (1981) conclusions relate to designing *intrinsically motivating instruction*, the theory can still feasibly be applied to a context which is not primarily a learning environment. There is still value to players being able to adjust the difficulty level of a game in some way, being able to engage with challenges which pique their curiosity, and having the ability to live out fantasies which meet their individual emotional needs.

3 Methodology

In the Methodology chapter, the methodological approach, data collection method, participants selection criteria and sample size are presented. The chapter also addresses the data analysis technique, reliability, validity considerations, and ethical aspects of the research. By following a structured methodology, the study aims to gather insights into players' perspectives and preferences within GaaS products.

3.1 Research Approach

When deciding on a research approach for a study, there are essentially three options; these are the qualitative approach, the quantitative approach, and the mixed methods approach. In the qualitative approach, non-numerical data are gathered, analyzed, and interpreted. Its purpose is to explore individuals' experiences, perceptions, and behaviors in-depth (Oates, 2006). The quantitative approach, on the other hand, involves the collection of numerical data, and analyzing them using statistical methods, to identify patterns, trends, and relationships between data points. It aims to quantify findings and generalize them to a larger population (Oates, 2006). The mixed methods approach revolves around combining elements of qualitative and quantitative approaches, to generate a more comprehensive understanding of the topic of the research. In the mixed methods approach, both numerical and non-numerical data are collected and analyzed, with the aim of forming a holistic understanding of the research question (Oates, 2006).

A qualitative approach is used for this study. One benefit of a qualitative approach is the ability to capture the participants' individual perspectives on what is being studied. By extracting player perceptions (expressed in their own words) about which features are most valuable to them, and which aspects of interacting with the game appeal to them, rich data are accessed, which can closer approximate an understanding of why certain features are considered more valuable than others.

3.2 Method of Data Collection

3.2.1 Online Survey

For the study, data were collected through an online survey. An online survey enables the collection of many diverse perspectives, and allows for reaching participants through online communities, without requiring geographical proximity. Questions were formulated in an open-ended way to generate rich data, with the majority being text response questions. This fits a qualitative approach, by emphasizing individuals' experiences and their understanding of their surroundings. Participants tend to be more responsive to new information when this approach is used (Oates, 2006). Moreover, this approach is particularly suitable when seeking a deeper understanding of a topic. All final questions used in the survey can be found in Appendix A.

A pilot study was undertaken by distributing the initial survey among a select group of friends who actively engage in playing World of Warcraft. Subsequently, valuable feedback was gathered, prompting the inclusion of an additional question. This question was not mandatory, but

rather served to add some nuance to the data regarding recent playtime in the game. The question was: “If you typically spend more or less time than you did during the last month, what affects the amount of time you spend playing World of Warcraft?” This question was deemed relevant as it is possible that players typically spend more time in-game than at the particular period in time where they responded to the survey. In such a case, this additional question will hopefully capture the degree to which they usually spend their free time playing World of Warcraft.

3.2.2 Participants, Sampling Technique, Criteria and Size

For this study, the sample surveyed was determined based on the specific case picked for this bachelor’s thesis. Given that the focus is on players of World of Warcraft, specifically its most recent iteration known as Dragonflight, a purposive sampling technique was employed. The target population comprises players who have played World of Warcraft: Dragonflight. For ethical reasons, only players at the age of 18 or above were included in the sampling.

To reach potential participants, posts were made to online communities of players of this game, containing a brief description of the study being conducted and the survey. A link was posted, taking players to a Microsoft Forms questionnaire, through which their data were collected.

Determining the total population size is challenging due to the absence of official statistics regarding the number of active World of Warcraft players at the time of writing this bachelor’s thesis. Out of the online survey distributed, a total of 50 participants responded, with one participant declining consent for data collection. Thus, 49 valid responses were documented. Due to the scope of the bachelor’s thesis’ study, the data collection was stopped after this number of responses had been collected.

3.3 Method for Data Analysis

To analyze the data collected for this bachelor’s thesis, thematic analysis as outlined by Braun and Clarke (2008) was used. Thematic analysis is flexible and can be adapted to various research questions and objectives, as it allows for the capturing of the richness of participants’ experiences. It also generates a comprehensive understanding of the data through the systematic identification of common patterns and themes, requiring a thorough reading of all the data. For these reasons, it was considered appropriate for this bachelor’s thesis. Braun and Clarke‘s (2008) method allows researchers to rigorously perform thematic analysis of qualitative data. This type of thematic analysis consists of a few key steps used to effectively analyze the data. The first step is familiarizing oneself with the data, getting immersed in them to gain a thorough understanding. Across the dataset, initial codes are then systematically generated. The codes are collated into potential themes, grouping related ones together. The aim with this step is to uncover common patterns within the responses collected, and connections between different pieces of data. The themes are reviewed to ensure that they are representative of the coded extracts contained within them and that the themes taken together are representative of the entire dataset. Upon validation, the themes are refined further, by giving them clear names and definitions which represent the content of the data. Finally, a scholarly report is produced, which incorporates examples to support the themes.

So, following the thematic analysis outlined by Braun and Clarke (2008), codes were derived from all responses containing pertinent information for each participant. Responses lacking any information regarding the participant’s preferences, experiences, or thoughts regarding video games in general or WoW in particular were the only ones where no code could be derived. The codes obtained in this step were initially entered into a spreadsheet individually and then grouped based on their frequency of occurrence. This facilitated a comprehensive overview of all codes and enabled the grouping of similar ones. By examining the codes alongside the raw response data, themes were identified. Through iterative refinement, seven final themes emerged, some of which comprised sub-themes. These are presented along with some example codes in Table 3. Further detail on the results of the thematic analysis is provided in the coming chapter.

Table 3: Final themes and example codes

Theme	**Example codes**
In-game Growth	Progression, Completionism, Challenge
Social Engagement as Motivator	Friendship, Socialization, Cooperation
Immersion and Projection of Self onto Avatar	Customizability, Story, Exploration
Desire for Novelty and New Content	Novelty, Game-changing updates
Competitive Drive	Competition, PvP (Player versus Player)
Recreation	Relaxation, Escapism
Metagaming and Systematization of Play	Knowledge, Game mechanics, Systems

3.4 Reliability and Validity

When designing a survey, it is important to consider several things, such as the phrasing of questions, to ensure that the data collection adheres to requirements of reliability and validity (Oates, 2006). Validity relates to how accurately the data represent what is attempted to be studied, whilst reliability refers to how repeatable the study is with regards to the expectation of yielding the same or similar results when repeated.

To ensure validity, the research question was kept in mind while designing the survey, making sure a clear connection between the two was established, so that the answer to the open-ended questions would be of relevance to the study. Furthermore, the questions were written to either include some context or be very specific, to narrow down the possible interpretations and reduce the risk of misunderstanding a question. One tool used to enable this was the pilot study, which according to Oates (2006) is a beneficial way of testing a questionnaire, and to find and improve potential shortcomings in an early stage.

Due to the constant change and updates to WoW, reliability is more difficult to achieve, since what are currently the latest features will change as the game gets updated. However, by abstracting and categorizing the new features within the game into more general terms, the questions could be relevant and applicable going forward with future updates. One exception to this

approach was the presence of the *Dragonriding* feature in the question asking participants to rank features in WoW. This feature is a specific game mechanic implemented in the Dragonflight expansion. It was deemed as too important to the game being studied to be excluded from the available options, even though its inclusion could be argued to diminish the reliability of the study somewhat. Had this feature been generalized and included into one of the other options, the reliability of the study would have increased further.

In conclusion, consideration of validity and reliability when conducting any study is imperative to establishing that the study and potential findings provide actual and reliable value.

3.5 Ethical Considerations

When conducting data collection qualitatively through surveys, it is imperative to consider and adhere to ethical standards. Normally, informed consent is required within internet-based research, just as in non-digitally conducted studies, and participants must be ensured that their responses are anonymous and confidential, as outlined by Oates (2006). In the study conducted for this bachelor’s thesis, these principles have been adhered to.

In the survey, the informed consent form was the first part the participants were shown (see Appendix A). The form stated the purpose of the study and what the intended use of the collected data is. It was through this consent form also made clear that the participant had to be above the age of 18 to participate in the study. The participant then had the option to either agree or disagree to data collection. If the participant disagreed, no further data would be collected, and the participant would be sent to the end of the survey. By having the participants read and give their informed consent, an understanding between participants and researchers was established, as suggested by Oates (2006).

Regarding the right to confidentiality and privacy, no identifying personal data were requested from any participant. Thus, there is little to no risk that participating in this study would lead to the participant’s identity being revealed to any readers of this bachelor’s thesis, or to the students or supervisor involved in its production. Furthermore, the collected data have been manually analyzed and any directly identifying information provided by the participants in the text responses has been anonymized. This decision is informed by ethical guidelines and ultimately serves to generate trust between researchers and participants.

The main steps taken to ensure the fulfillment of ethical requirements are obtaining informed consent, not collecting data from minors, not requesting any personal data which can be used to identify participants, and anonymizing any responses containing information which could be used to identify a participant. By meeting these ethical and methodological standards, the integrity of the research process and the well-being of participants were safeguarded.

4 Findings

In the Findings chapter, the themes that emerged from the thematic analysis of the collected data are presented. The themes represent the research findings, and they are explained and supported by participants' quotations. The research findings relate to players' of online live service games perceived value of different game aspects.

4.1 Results

49 responses were collected. While the study conducted was qualitative, there was some collection of numerical data, which are presented below, and contextualized by one of the text responses.

Regarding age, 11 of the participants (22.4%) belong to the age bracket 18-25. 20 of the participants (40.8%) belong to the age bracket 26-30. 8 of the participants (16.3%) belong to the age bracket 31-35. 7 of the participants (14.3%) belong to the age bracket 36-40. 1 participant (2.0%) belongs to the age bracket 41-45. 2 participants (4.1%) belong to the age bracket 46-50. None of the participants reported that they were over the age of 50 or below the age of 18.

For the question of gender, 8 participants (16.3%) reported that they were women, and 41 participants (83.7%) reported that they were men. No participants reported “Other” or “Prefer not to say”.

The participants were asked how many hours per week, on average, during the last month, they spent playing video games. 3 participants (6.1%) reported that they spend 5 – 10 hours/week playing. 7 participants (14.3%) reported that they spend 11 – 15 hours/week. 7 participants (14.3%) reported that they spend 16 – 20 hours/week. 16 participants (32.7%) reported that they spend 21 – 30 hours/week. 11 participants (22.4%) reported that they spend 31 – 40 hours/week. 5 participants (10.2%) reported that they spend more than 40 hours/week. No participants reported that they played video games for less than 5 hours per week.

The participants were asked how many hours per week, on average, during the last month, they spent playing World of Warcraft: Dragonflight. 9 participants (18.4%) reported that they spend less than 5 hours/week playing. 5 participants (10.2%) reported that they spend 5 – 10 hours/week. 8 participants (16.3%) reported that they spend 11 – 15 hours/week. 13 participants (26.5%) reported that they spend 16 – 20 hours/week. 11 participants (22.4%) reported that they spend 21 – 30 hours/week. 1 participant (2%) reported that they spend 31 – 40 hours/week. 2 participants (4.1%) reported that they spend more than 40 hours/week.

To contextualize the responses regarding amount of playtime in World of Warcraft: Dragonflight, the participants who would typically spend a different number of hours playing the game than they did in the last month were asked to specify why. This was an open-ended text question, formulated as follows: “If you typically spend more or less time than you did during the last month, what affects the amount of time you spend playing World of Warcraft?” The question was not mandatory. 44 participants (89.8%) entered an answer for this question, indicating that the time spent playing World of Warcraft: Dragonflight varied for a vast majority of participants. Among the responses collected, many responses included comments that their available free time affected the time spent playing, as well as comments regarding the current content

cycle being at its end and that they spent less time playing at the time of taking the survey due to a lack of new content to engage with. Two examples of these types of responses are *“Real life obligations, birthdays, family events”* (P42:Q7) from participant 42 and *“The end of a season usually means less content to play, which is why I'm playing less at the moment”* (P7:Q7) from participant 7.

Lastly, regarding the ranking of different content, the results are as follows, in order of most to least popular:

1. Instanced content and instance-related content (such as raids and dungeons)
2. Major updates to game systems (such as the overhauls of talent trees and professions)
3. New zones and zone-related content
4. New gear
5. Dragonriding
6. New cosmetic content
7. Story content
8. New player character options (the new race and class options)
9. PvP content

4.2 Theme 1: In-game Growth

4.2.1 Progression

Within the umbrella of perceiving a sense of growth while playing games as valuable, which is the most dominant theme found in the dataset, one common sub-theme can be described as valuing a sense of progression.

One prevalent aspect of progression which is valued by many participants is the gearing process, which is the act of gaining better equipment (for example armor, weapons or magically enchanted jewelry) and successively getting closer to the state of possessing gear considered to be BIS (best-in-slot, meaning having the best possible equipment for one’s avatar’s particular class and role). For example, participant 6 mentions gearing as one of their motivators for gameplay, responding that they *“love having a sense of progression, whether it comes from loot or completing a higher end activity”* (P6:Q7) when asked to motivate their top choice of content released during the Dragonflight expansion (where instance-related content and new gear were their two top choices). Participant 22 says that *“the most rewarding thing […] is the ability to get gear based on just working hard”* (P22:Q4) and that *“gear is everything in this game”* (P22:Q9). These are two examples of how the aspect of gearing is valued by the participants in this study, where there are clear expressions of a desire for player character improvement through the acquiring of new equipment.

Another aspect of progression found within the data collected through this study is progression through increasing the power of one’s avatar. Participant 6 expresses that they value this type of progression, saying *“getting a fresh character up and running in world of warcraft [sic][2]”*

[2] In the bachelor’s thesis, [sic] is employed to indicate an error present in a quoted text. This error may encompass grammatical or spelling inaccuracies, which are intentionally left uncorrected to preserve the fidelity of the participants' true quotations.

(P6:Q4), giving it as an example of the type of activity they find most rewarding in games. Participant 6 goes on to explain that they *“usually play much more, especially early in patches”* (P6:Q7), implying that once their character has progressed to the point of no longer having any way to increase character power, the drive to engage with the game decreases.

Thirdly, another occurring aspect of the sub-theme of progression is that of progressing through instanced content, with a heavy emphasis on raiding. Several participants express that a motivator for them was progressing through new raids; for instance, when stating the main determinant for how much time they spend playing World of Warcraft, participant 14’s response is *“Progression raiding, the tier has ended so I only play on raid days anymore”* (P14:Q7). This comment shows a heavy emphasis on progressing through the raids as they are released, and once they have been completed, there is a significant decrease in motivation to play. A central component of raids and dungeons in WoW is, as participant 39 puts it, *“killing big monster”* (P39:Q4). The act of progressing through these instances by completing boss fights (major enemy battles consistently found in instances) is a core component of the gameplay of instanced content, and seems to be a factor which motivate participants towards progression in this manner. The presence of this aspect within the responses given by participants is also corroborated by instanced content being ranked as the highest rated content within World of Warcraft: Dragonflight preferred by participants of this study.

Enjoying the aspects of getting new gear, increasing the power of one’s in-game character, and progressing through instanced content are significant value perceptions found in this bachelor’s thesis study; the sub-theme of progression summarizes these sentiments.

4.2.2 Challenge

Another sub-theme of in-game growth, which emerges from the collected and analyzed data, is the desire to engage with and overcome challenging content. Participant 9 responds *“the overcoming of well designed [sic] difficulty curves”* (P9:Q4) to the question of which aspects of a game they usually find most rewarding. Furthermore, participant 28 emphasizes their role as having a leading position within raids in a highly ranked guild, and explains that in their view, taking on a new raid before everyone participating is well-equipped enough to easily tackle it is the best part of WoW. Participant 29 mentions *“overcoming trials or making a plan all come together”* (P29:Q4) as a rewarding aspect of video games, and participant 48 states that *“raiding and mythic plus are extremely engaging”* (P48:Q9). Mythic plus is a higher difficulty of existing raids, where enemies are typically stronger and require more strategizing to beat than in their normal mode. This sub-theme also ties in with the response from participant 39, where *“killing big monster”* (P39:Q4) resonates with the sentiment expressed by the aforementioned participants. In summary, the findings related to the challenge sub-theme seem to be significantly connected to completing difficult raids.

4.2.3 Achievement

The third sub-theme identified within the theme of in-game growth is the achievement of different goals. This theme relates both to completing collections within a game and the achieving of goals related to increasing the in-game power.

The aspect of completing collections is expressed as enjoyable in some of the participants’ responses. One such activity is trying to get as many in-game achievements as possible. In-

game achievements are explicit goals set by the game relating to, for instance, fully exploring certain regions of the game world or gathering all ridable mounts of a certain type. Participant 44 brings this up by mentioning *“getting achievements for the new meta achievement [sic]”* (P44:Q7). Another such activity could be completing the story content related to a zone in the game world, by doing all the quests or completing all its instances. This is brought up by participant 42, who writes that *“completing the story”* (P42:Q4) is what they usually find most rewarding in video games. Participant 49 echoes this sentiment, stating that *“Collection and completionism are the two biggest for me”* (P49:Q4), when responding to the question of rewarding aspects of video games. The completionism factor can be observed as one which drives engagement for some players.

Participant 27 mentioned that they find *“achieving a difficult goal”* (P27:Q4) to be a rewarding activity. The sentiment expressed in some of these responses seems to relate specifically to the state of having achieved something difficult. Participant 38 also believes this to be the case, stating that they value striving for an *“achievement related to pushing content that the majority of players are not doing”* (P38:Q4), meaning that there is some perceived value in successfully having overcome a challenge which the average player has not. Once again, participant 39’s response of *“killing big monster”* (P39:Q4) is relevant, and in some sense summarizes the dominant aspect of this sub-theme, capturing the essence of what several of the participants in this study express.

4.3 Theme 2: Social Engagement as Motivator

4.3.1 Socialization

Many participants point to social elements as a key factor in why they play the game and enjoy some content more than other content. Participant 6 speaks to this by stating: *“Dungeons are social and easy enough to setup [sic] in a pinch, i [sic] dont [sic] raid though”* (P6:Q9). Pointing out how much effort is required to engage with content and the social side of it is an impacting factor of this theme, as completing dungeons requires less people compared to raids. Furthermore, some participants mention that social groups can be a factor motivating them to engage with the game even when there is a lack of new content, or the new content is not considered particularly engaging in and of itself. Participant 28 exemplifies this by stating: *“over the years [I] made a group of friends and inevitably found a guild that keeps me subscribed to the game even when there are content droughts / "Bad" patches”* (P28:Q3). The examples make it clear that social groups, such as guilds or friend groups have an impact on the players’ engagement with the game and that different content impacts this in different ways. It is also mentioned that the game and the systems within can be beneficial tools in building new relationships and social bonds, allowing players to find like-minded people. Participant 49 corroborates this by stating: *“Video games are my primary hobby, and the easiest way for me to meet new people / make friends while not being afraid to be myself”* (P49:Q3). These participants are some examples clearly pointing out that social elements within the game are a key factor in keeping players involved with the game over time, but also as a common reason for why players engage with games.

4.3.2 Cooperation

The participants also emphasize the cooperative side of socialization, perceiving higher value in taking on challenges within the social context. Some participants also explicitly mention that it has a direct impact on the degree to which they engage with the game. One such example is participant 16, stating: *“Currently im [sic] benched for Mythic Tindral despite being the better mage [at the moment] so my motivation to play is low”* (P16:Q7). The participant is referring to not being allowed to take on a more difficult version of one of the most recent raids with their guild (Mythic referring to a higher difficulty mode of raids, and Tindral referring to one of the opponents in a raid in the game). This affects their motivation to engage with the game, decreasing the level of engagement with it. Participant 19 also speaks to this perspective: *“When my friends are online and we run dungeons together. But since it's the end of the season the amount of time has decreased a lot.”* (P19:Q7), pointing out what affects the amount of time they engage with it, and further supporting that taking on challenges within a social context impacts engagement. Participant 28 also expresses a perceived sense of value in cooperative challenges by stating: *“Something about coordinating with my fellow guildmates / raiders […] is what makes progging wow [sic] in my opinion the best aspect of raiding.”* (P28:Q9). They are referring to taking on new challenges with their peers. These responses further support the effect of cooperation on the degree of engagement with the game, but also elucidates the varying degree to which different systems within the game enables cooperation. Finally, participant 43 encapsulates many of these elements when reasoning about what aspects within a game they find most rewarding, stating: *“Comradery and working towards the same objective with people from all over the world.”* (P43:Q4). This further shows the importance of cooperation for participants, also touching on that the systems and the online nature of the game itself is what enables the possibility of cooperation.

4.4 Theme 3: Immersion and Projection of Self onto Avatar

4.4.1 World Fantasy

Some participants express a preference for immersing themselves in digital worlds and the stories they tell. When asked to motivate their ranking of the different content, participant 40 responds that they *“love a good story, always been a reader and [they] find getting to know the setting and the NPCs' stories to be interesting...immersive [sic].”* (P40:Q9) This participant rates story content as the type of content they have valued most in this most recent iteration of World of Warcraft, and this selection is echoed by their own words, where a “good story” appeals to them, and the NPCs within the game are found to be interesting. In this participant’s view, immersion seems to arise as the result of getting to know a setting with interesting NPCs. Participant 46 states that they play *“games predominantly for the same reason [they] read books: the story and the environments they take place in! Even if a game isn't particularly exciting with the actual gameplay, the environment and story are often enough to keep [them] interested”* (P46:Q9). The interconnectedness between the story and game world is one which can be observed in several responses, and corresponds to a view of both the game world (including the setting and characters) and its story as part of the fantasy offered by immersing oneself in a game. Not all participants who express a preference for the story and world aspects of video games appreciate the story of this particular game, however. Participant 31 implies that they do not particularly care for the story of World of Warcraft, and that they would *“love to see what Warcraft would be like with actual writers”* (P31:Q10), expressing a clear desire

for a good story told through the game, but also disappointment in the quality of writing within the current state of the game. From these excerpts, it can be understood that some of the players who appreciate games as a medium for storytelling view the world and its characters (i.e. NPCs) as an integral part of delivering that story; on the other hand, there is also a sentiment of desiring a higher quality of story present in the data.

4.4.2 Avatar Fantasy

Two other elements closely related to immersion are the expression and projection of the self onto a video game avatar. For some participants, they experience immersion by feeling as if they are making their player character, or avatar, their own. Participant 21 mentions *“unlocking abilities, personalizing characters”* (P21:Q4) as aspects they appreciate in games, along with loving *“variety and multiple options character wise, and being able to create characters as unique as possible”* (P21:Q9). For this participant, a significant part of the value perceived in World of Warcraft and video games seems to revolve around the growth and personalization of their avatar. Participant 46 explains that while their motivation to play is not particularly strengthened by the competitive aspects of World of Warcraft, they are all the more drawn to the *“aesthetic content (story, race, class, cosmetic, zones)”* (P46:Q11). Valuing aesthetic content, particularly with regards to race, class, and cosmetic options, goes hand in hand with the idea of the desire to personalize one’s character brought up by participant 21. Something from the dataset, which is exemplified by these two participants, is the projection of self (in particular ones aesthetic taste and sense) onto ones in-game avatar.

4.5 Theme 4: Desire for Novelty and New Content

Several participants emphasize the importance of novelty and continuously getting new content, as well as the impact it has on how much time they spend engaged with the game. Participant 17 expresses this explicitly, “*New expansion/season releases drive me to play more*” (P17:Q7). However, the reason why it impacts the amount of time participants spend within the game varies. Participant 9 puts weight on the competitive side of new content (completing it earlier than others) by stating: *“I am waiting mainly for new content to be released as I am more of a competitive player”* (P9:Q7). Participant 7 on the other hand states that the “*end of a season usually means less content to play, which is why I'm playing less at the moment*” (P7:Q7), pointing to the fact that the content has been available for some time, hence lacking the sense of novelty. These answers all show that novelty most certainly have an impact on how much the player engages with the game, but also that there is some nuance to the reasons behind it.

Some participants point out the fact that the game is to some degree at the end of a content cycle, affecting their motivation and attitude towards the game. In some cases, participants have adapted to these cycles. Participant 19 is one example, stating: “*I often unsub after getting my ahead of the curve […] achievement*” (P19:Q11), indicating that for some players the engagement with the game stops completely after conquering the new content. Participant 18 corroborates this by stating: “*No more content until new xpac and playing SOD*” (P18:Q7), referring to a lack of content until a new expansion pack is released and that the participant has moved on to playing something else. These examples shows that if the release of new content is too slow it might drive players away from the game, further supporting the importance of new content.

All these participants point to the importance of new content, and at what frequency it is released, impacting how much players engage with the game. Participant 49 take a broader perspective by stating: “*Quality of Life changes and innovation are important in a game that needs to evolve like WoW, due to its age and the changing interests/goals of its target audience; and new collection/story content helps the game feel refreshed even in a cycle that simply repeats itself*” (P49:Q9). This refers to the fact that novelty, new content, and features are part of what has enabled WoW to stay relevant and retain a player base over an extended period of time. The participant also points to a connection between new content and replayability of the game.

4.6 Theme 5: Competitive Drive

Some participants also expresse the importance of the possibility to compete against and compare themselves to others, a way of proving their skills and capabilities within the game. For example, participant 5 and 8 bring up two different competitive elements as the most rewarding parts of games, “*Pushign [sic] rating*” (P5:Q4) and “*Climbing leaderboards*” (P8:Q4). In this context, rating refers to a score associated with how well the player is performing. This makes it clear that some players engage with games mainly as a competitive outlet, but also that there could be several elements of a game which could be approached competitively. Participant 48 further corroborates the diversity of competitive play, by stating: “*Raiding and mythic plus are extremely engaging, both competitively as well as socially”* (P48:Q9), where Mythic Plus refers to a more difficult version of a raid, which point towards the concept of completing difficult challenges earlier than others. While the method of competition is approached in different ways by these participants, they still point to the importance of having systems that enable competition among players.

While the aforementioned participants speak about competition against other players in terms of how they perform when engaging with the game content, it is also possible to compete directly against other players. This is often referred to as Player versus Player (PvP), which is mentioned by many participants. However, this has shown to be a very divisive type of content among participants, as they either seem to enjoy it a lot or not at all. One example of this is participant 8, who states: “*I purely play pvp Right [sic] now*” (P8:Q9). On the other hand, participant 11 expresses their opinion that “*PVP is an awful,outdated [sic] gamemode*” (P11:Q10), indicating that they have none or very little engagement with PvP content. However divisive this type of content is, it is still clear that there are players who consider it important and central as a motivator for playing games.

4.7 Theme 6: Recreation

4.7.1 Relaxation

The theme of recreation partially consists of relaxation, which many participants express as a key factor of why they play video games. Participant 23’s response to the question of why they play video games is an example of this: *“Relaxing daily to reset mind out of work environment [sic]”* (P23:Q3). However, not that many of the participants who fall into this category explain in depth how, or why, they find video games relaxing. One exception is participant 30, who explains that *“for World of Warcraft I enjoy relaxing gameplay; world quests [and] mythic*

dungeons” (P30:Q4). They point out specific types of content within the game which they consider to be relaxing. Participant 33 also points out specific content which is perceived as relaxing: *“I like to relax by going around zones and collecting materials”* (P33:Q9). With these examples, the only facts which become clear are that different in-game activities can be perceived as relaxing to different players, and that relaxation in general is a common motivator for playing video games.

4.7.2 Escapism

Another aspect of recreation, which motivates several participants to play more is escapism. For these participants, video games serve as a distraction and allow them to avoid their everyday life. Participant 21 brings this up when mentioning that video games *“help [them] relax from the stress of daily life”* (P21:Q3) in their response to why they play games. Participant 43 corroborates this by stating: *“They help me dissociate with whats [sic] going on in the world“* (P43:Q3). Viewing games as tools for escapism is found to be a significant sub-theme within the findings.

4.8 Theme 7: Metagaming and Systematization of Play

Another theme emergent within the findings relates to the sub-systems of video games themselves. Participants express both appreciation of and discontentment with World of Warcraft’s current systems. Participant 32 stating that the *“Wow [sic] combat system is realy [sic] good”* (P32:Q9) on one hand, and participant 15 pointing out that the *“game formula is becoming stale and tech outdated so [it] needs […] more overhauling & improvements to systems”* (P15:Q9) on the other. While the participants are not all in agreement on the quality of systems in World of Warcraft’s current iteration, what they do have in common is the perception of good systems as valuable in general. Participant 49 expands on this idea, explaining that: *“Quality of Life changes and innovation are important in a game that needs to evolve like WoW, due to its age and the changing interests/goals of its target audience”* (P49:Q9). What can be stated with some certainty is that some participants of this study have the common perception that the sub-systems in World of Warcraft matter to their enjoyment, and that they need to be updated over time to maintain their value.

Metagaming, the act of using information obtained outside the game itself (for instance via knowledge repositories on the internet or other players) to improve one’s performance in the game, is also an activity which emerges in the data. As an example, participant 10 states that *“since i [sic] primarily enjoy improving and optimizing my gameplay, well balanced and designed end game instanced PvE content is almost exclusively what i [sic] care about”* (P10:Q9). While metagaming is not explicitly mentioned in this response, it is still one which points to the types of drives and behaviors which characterize the phenomenon.

5 Discussion

In the Discussion chapter, the study delves into the implications of the bachelor’s thesis research findings. The chapter explores how the key themes, which represent the research findings, align with existing literature and the chosen theory, offering a deeper understanding of player engagement and satisfaction in the context of GaaS offerings. Additionally, the discussion section addresses some of the practical implications of the findings for game developers and suggests potential strategies for enhancing user experiences in GaaS products.

5.1 In-game Growth

5.1.1 Progression

According to the findings of this study, the sense of progression received from games was the most commonly valued aspect of the game, and a common motivator for continuing to play a game for a long time. The findings point out three important factors which impact this. Providing players with the opportunity to experience a sense of progression might be the most important factor to consider when designing video games.

The first factor consists of players progressively acquiring better and stronger in-game equipment, successively working towards getting the best possible items available for their particular classes and roles. The second factor refers to players feeling more powerful as their avatars’ power increases. The third factor of progression consists of players being able to utilize their acquired power to take on new and more difficult challenges, ultimately being rewarded with further power increases.

These three factors are somewhat supported by previous research; Rapp (2017a) supports the first and third ones as the outcome of creating appropriate rewards for challenges. In this case players are rewarded with better gear, reinforcing the idea that the gearing process is an important element of the game. The desire for even better gear strengthens the drive to complete more difficult challenges. The third factor is also supported by Harviainen and Rapp (2018), as appropriate challenges are best presented when they are perceived as both surmountable and rewarding for players. The second factor of the progression theme of the findings can to some degree be explained by looking at the social implication of increased power, described by Rapp (2017b), where gear (or the power it brings), can be part of a player’s social image or act as a status symbol. It is not farfetched, then, to assume that a player’s personal connection to their avatar would result in them wanting to improve this image by progressing in the game.

Experiencing a sense of progression has shown to be the most common theme that participants of this study value in video games; inspiring this sense has a clear connection to the idea of linear temporality, laid out by Rapp (2021). Another element enabling this is the GaaS model itself (Heinze and Vaudour, 2020), as it allows for a more long-term perspective on player character development in video games. The fact that progression is highly valued by many players in conjunction with the possibilities for enabling progression enabled by the GaaS model makes this a critically important aspect to design for, based on the literature and the findings presented in this bachelor’s thesis. This could be done over time with incremental steps, continuously empowering, rewarding, and challenging players. Thus, a sense of

progression is made possible, which many players value highly according to this bachelor’s thesis study.

5.1.2 Challenge

Challenge is another topic closely related to progression. However, the findings in this study suggest that it is common among players to value challenges in and of themselves, and not only for the rewards and sense of progression they bring. The findings further suggest that many of these players especially value challenges completed or taken on in groups.

In contrast to what Harviainen and Rapp (2018) suggest, regarding having knowledge available when taking on challenges, the findings of this study suggest that some players enjoy the lack of knowledge. They consider acquiring it as an enjoyable challenge in itself, which is what is also suggested by Alexander (2017). Additionally, the fact that some players find value in challenges even without successfully overcoming them is in line with Alexander’s, Sear’s and Oikonomou’s (2013) research. Some of the participants of the study conducted for this bachelor’s thesis could be considered hardcore players regarding the amount of time they spend in-game; this implies that they find value and motivation in difficult challenges.

Furthermore, the findings of this study support the research conducted by Strojny, Strojny and Rębilas. (2019) to some degree, in that the balance of difficulty is an important factor when designing challenges. The findings of this bachelor’s thesis study support this. Some players seem to value well-balanced difficulty design, as well as how difficulty changes progressively during play. However, the findings did not show any significant indication that challenge is correlated to immersion as suggested by Sigailov-Lanfranchi (2019). Still, the importance of providing challenging content and well-designed difficulty curves in video games of the sort studied ought not to be understated.

5.1.3 Achievement

A third aspect connected to in-game growth, identified in the findings of this study, is achievement. This is found to be closely related to the desire for both progression and challenge. While multiple aspects related to achievement have been discussed under the previous headings of this chapter, two aspects which have not yet been discussed in depth are those of achievement and the accomplishing of goals. According to the findings of this bachelor’s thesis study, this is something several players value.

Rapp (2017a) discusses how rewards for completing challenges can be utilized as tools to guide players toward taking on more difficult challenges, incentivized by the continuous acquisition of increasingly valuable rewards. On the other hand, it is not farfetched to assume that some players, instead of viewing the rewards themselves as the important aspect of a challenge, identify the sense of achievement they get from completing them as the most rewarding factor.

Another element which is perceived as valuable by some players according to the findings presented in this bachelor’s thesis is completionism. This motivator can according to Rapp (2017b) stem from desiring collected items (or other artefacts such as achievements) as status symbols. The impact this has might also help explain the sense of achievement players experience from completionism and collecting items.

5.2 Social Engagement as Motivator

5.2.1 Socialization

Enabling socialization between players is a critical factor in driving player engagement with games according to the findings presented in this bachelor’s thesis. The findings also support the fact that social bonds or groups can be tools for keeping players engaged with the game even if no new content has been released or if it is perceived as containing low value in and of itself. This is in line with previous literature, where Rapp (2017b) also points out that social ties can lead players to engage with monotonous and less exciting content. Furthermore, the findings of this study show the importance of how these systems are designed, where allowing players to form new social bonds and making it easy to engage with the systems which enable this formation are two key factors. This could to some degree be understood by looking at Collister and Ross (2014), emphasizing how expectations of other players’ behavior influence the individual player. Social systems need to be easily approachable since they will be used with other players. A balance should be struck between how much impact other players have on the individual player’s experience, and the allowing of interesting social interaction. Thus, the findings of this bachelor’s thesis study and previous research show that social systems in online games are core components in driving player engagement and the perceived value of games.

5.2.2 Cooperation

While socialization has been shown to be critically important, this study further explored the cooperative aspects of social interaction within a game such as WoW. The findings of this study suggest that when taking on challenges, cooperation is an important driver of player motivation and that it to some extent influences a player’s degree of engagement with a game. As Rapp (2017b) mentions, the reason this drives engagement might be the fact that the player is seeking affirmation from others within their group. Furthermore, as sharing information might be a necessity when completing challenges in games (Harviainen and Rapp, 2018), cooperation between players becomes somewhat of a requirement. Thus, cooperation could be considered a central aspect within the challenges of games. Conclusively, the findings of this study also suggest that cooperation is a common motivator for players, which means that it becomes imperative for HIS developers to keep cooperation in mind when designing games with a multiplayer component.

5.3 Immersion and Projection of Self onto Avatar

5.3.1 World Fantasy

Since the literature showed that the design of NPCs in video games were found to be valuable in creating immersion (Alves-Filho et al., 2023), it is worth considering the findings which accord to this. Valuing getting to know NPC stories is one occurring aspect of both the findings and the literature. Thus, the findings are supported by Alves-Filho et al. (2023) in this case, particularly with regards to improving story quality, which itself encourages immersion and shows the connection between the game world and the story told by it.

Localization could also increase immersion, which is another valuable aspect of play emergent in the findings. It could be argued that localizing content, in accordance with what Cesário, Ribeiro and Coelho, (2023) found helps this immersion. There are no explicit mentions of this in the data collected for this bachelor’s thesis’ study, and it is difficult to make the argument that it is something which is perceived as especially valuable based on them. However, WoW has been localized to many languages. It is possible that participants of the study are already using a localized version of the game, and therefore felt no need to mention it in their responses.

5.3.2 Avatar Fantasy

According to the findings immersion is a rather common element considered valuable by players. However, they suggest that this does not only revolve around the world and its story but also how the player fits into it. There seems to be two aspects to this, one being personalization and the other how the player identifies with the avatar. This is supported by current literature, where the importance of allowing players to identify with the avatar is highlighted with regards to how it impacts player enjoyment (Rapp, 2017a). Based on Rapp (2017a) and the data, it could conceivably be done in two ways. It can be achieved by allowing players to customize how they interact with the game. Alternatively, the players can be allowed to change their appearance in the game. As this is somewhat commonly occurring within the findings, it ought to be taken into consideration when designing video games.

5.4 Desire for Novelty and New Content

The appeal of novelty and new content (both features and non-functionally oriented content) is especially relevant in GaaS products, as developers of these products have a unique advantage over those not adopting the model. They are more able to expand games based on demand from players for new things to engage with in-game. From the data, the importance of having new and novel content to engage with was established. Within the literature, this is also a possibility taken advantage of by some GaaS games.

The way the continuous release of story is discussed by Carstensdottir and Larsen (2021) can be considered to be a beneficial and desirable way to keep players interested in story content engaged over time. Indeed, one could claim that this is to an extent already the modus operandi of WoW’s developers, as the story has been expanded and iterated upon both over the course of expansions and within the cycles of each expansion pack, by releasing content such as raids (containing new story content) piecemeal over the course of months or even years. As was brought up in the Findings chapter of this bachelor’s thesis, the opinion that new story content (among other things) helps the game experience stay fresh and avoid becoming stale is present among participants. The preferences present in the findings therefore seem to be consistent with the approach of utilizing a GaaS product’s iterative nature to extend and improve on the story told by the game over time.

The perceived value of continuously improving sub-systems in a game is another element of the findings, where it can be understood that the need for innovation is especially high in a game as old as WoW. Improvements to game systems have been found to be relevant in attracting new players (Hammad et al., 2021), which, while it is something that comparatively few participants brought up, still does seem to point to a congruency between the data and literature. It is also worth noting that although it is among the less mentioned types of preference in the

text responses, the category of “Major updates to game systems (such as the overhauls of talent trees and professions)” is the second highest ranked item in the question about what features in WoW is considered most valuable. This indicates that players of World of Warcraft: Dragonflight do perceive these updates as valuable and important, and reinforces the idea that GaaS developers should prioritize the release of new content and features.

5.5 Competitive Drive

Competition within video games serves as a primary motivator for some players, according to the findings of this study. The findings further show that different competitive elements are perceived as valuable to different players. They suggest that enabling competitive comparison and competition in more than one way is another important factor in driving player engagement. This is in line with current literature, where Brühlmann et al. (2017) describes the use of common artefacts for competition as impactful in terms of quantity of play. Furthermore, Esteves, Valogianni and Greenhill (2021) show that some dynamics in competitive comparisons between players increase their self-efficacy, enjoyment and continuance intention. This highlights the importance of competitive elements and the use of artefacts such as leaderboards and rating in motivating players.

On competition, the findings of this study also establish that some players find value specifically in competitive group play, and not being able to partake in this reduces motivation. This is somewhat in line with Rapp (2017a), who mentions this type of play as an element in engaging players. The findings of the study conducted for this bachelor’s thesis do not explicitly contain any cases where competitive group play led to aggressive behavior, as suggested by Rapp (2017a). The reason for this could either be that competitive group play has been implemented well in WoW, or that it did not impact the value perceptions of players enough to affect their overall opinion of competitive content.

5.6 Recreation

The findings have shown that the theme of recreation, containing the sub-themes of relaxation and escapism, is central to why some players decide to play video games. Some players lean towards escapism as a means to get away from reality or as an escape from their everyday life, whereas others lean towards relaxation and spending time with friends. More specifically, some players find it relaxing to perform simple and monotonous tasks, whereas others find relaxation in other types of content. The research by Martončik and Lokša (2017) could be used to explain this to some degree, as engaging with friends or social groups online seems to reduce loneliness and social anxiety. Even if this correlation is not explicitly supported by the findings of study conducted for this bachelor’s thesis, it could still be part of the reason as to why it is a commonly recurring motivation for the participants of this study.

5.7 Metagaming and Systematization of Play

The quality and contemporality of sub-systems in games seem to be important for the long-term influx of new players. The findings of this study showed the importance of sub-systems

in World of Warcraft, and the literature points to the value of game system improvements (Hammad et al., 2021). The fact that World of Warcraft is an old game means that its systems have a particular need for innovation, which was pointed out by participant 49. Even though Hammad et al. (2021) mainly mentioned the effects of DLC with regards to system updates, it can be argued that the updating of and improvement to systems within a game can lead to the attraction of new players even within a game such as WoW, using the GaaS model.

Furthermore, it was shown by the findings that metagaming is a motivator for some players of World of Warcraft. This finding is supported by the literature, regarding the value of knowing a lot about a game as both empowering and socially valuable (Alexander, 2017). Metagamers might make the prediction of player behavior to be both an easier and more difficult task. On one hand, the use of out-of-game information to find optimal game strategies could lead to players employing unforeseen strategies which the developers have not planned for, leading to an even larger difficulty with what Fraser, Katchabaw and Mercer (2014) discuss regarding using the computational approach to predicting player behavior. On the other hand, it could also lead to more standardization in player decision-making. Maximizing the damage of one’s player character is a common goal of metagaming within online games. Thus, it could be argued that a game containing many players who play to optimize their performance using metagaming, requires the game to be balanced. If, for instance, there are large discrepancies between the power of available items in the game, which are meant to be of similar strength, this could lead to less player enjoyment as optimizing players will pick the optimal choice, leading to unused content. If the aim is to develop as valuable features and content as possible, this is an outcome which ought to be undesirable for developers.

5.8 Theory of Intrinsically Motivating Instruction

All the main aspects of the theory are confirmed, referring to *Challenge*, *Fantasy* and *Curiosity*.

5.8.1 Challenge

Regarding challenges the findings of this bachelor’s thesis study show that players care about improvement, meaning progression, achievement, and the overcoming of challenges. It is true that this engages players, and therefore Malone’s (1981) theory can be used to guide game designers in developing the right direction.

Specifically, the *Challenge* aspect of the theory can be used when designing and implementing goals which resonate with players’ personal motivations. The goals should also fit within the context of the game and be obvious to players. The findings support this as many players seem to perceive the same type of challenges as valuable. However, the findings also suggest that it is important to consider players’ motivations as some players find value in more uncommon challenges. Moreover, the challenges implemented within the game should have uncertain outcomes, which is supported by the findings as it was sometimes perceived as more valuable to overcome challenges which have not yet been successfully completed.

Considering the dichotomy of *toys* and *tools* (Malone, 1981), the findings of this bachelor’s thesis study make it clear that many players consider the use of *tools*, or sub-systems designed to overcome challenges, as valuable. In video games, this type of system could include elements such as gear which increases the player’s power. The findings further support the importance

of *toys,* as some players value systems which have no direct purpose when taking on challenges. Based on the findings, one example of something which can be identified as *toys* are cosmetics; cosmetics have no impact on other systems or the ability of a player to complete challenges in a game, but they are still perceived as valuable by many players.

Lastly, the fact that challenges meaningfully affect and have an impact on *self-esteem*, which Malone (1981) claims, is visible in the findings of this study. The findings show that several players perceive a sense of achievement as highly valuable, since it serves as some form of receipt of the player’s performance.

5.8.2 Fantasy

Players care about identifying with their avatar and immersing themselves in the game world through storytelling. Given that games are fantasy-inducing environments, Malone’s (1981) theory can be used to guide designers with regards to this aspect as well.

Specifically, the *Fantasy* aspect can be employed with regards to emphasizing *emotionally-involving fantasies*, and catering to different player needs in this context. In the findings, it was shown that participants valued immersion, projection of the self onto their avatars, and escapism as some of the motivating factors of why they play games. These elements of the findings are supported by Malone (1981), who states that the emotional aspects of fantasy are considered influential in determining popularity of video games; he mentions that the value of an emotional fantasy is largely determined by the individual’s preferences. It is apparent from the findings that what creates motivators does differ on an individual basis, which fits with Malone’s (1981) *Fantasy* aspect. The value of continuous release of new content (made possible by the GaaS model) further enhances the effect of *emotionally-involving fantasies*, since these being perceived as valuable allows developers to keep catering to the needs of the game’s players. In order to better satisfy these different needs, a wide variety of fantasy-inducing content can be designed.

When it comes to the difference between *intrinsic* and *extrinsic* types of fantasies, given that *intrinsic fantasies* are generally preferred for the creation of immersion, it can be argued that developers should design the game systems such that the way players engage with the game mechanics correspond to what their character is doing in the game. For instance, it was apparent from the findings that some participants particularly appreciate the game mechanics, such as the combat system within World of Warcraft. Other participants criticized the systems, and mentioned how a game as old as WoW needs to be significantly innovated on and improved. Both of these categories of participants care about the quality of engagement with systems, and it can be argued that part of what makes sub-systems appreciated from a mechanical point of view is the degree to which they contribute to *intrinsic fantasy*. The intrinsicality of fantasies evoked by a game such as World of Warcraft could be argued to be a result of how well the player’s actions in the game correspond to what their character does. When interacting with the game, the player might value a sense of responsiveness, i.e. one key press corresponding to one (preferably immediate) action in the game. In essence, developing games where *intrinsic fantasies* are better encouraged through the interaction design of the games may effectively improve the value players perceive in their sub-systems.

5.8.3 Curiosity

Malone (1981) pointing to the importance of allowing *curiosity*, is to some degree also supported by the findings of this bachelor’s thesis study, as the findings show that players want to experience new things and value learning about and mastering systems within the game. One element Malone (1981) discusses within the curiosity aspect is informational complexity. Referring to the importance that information within games is provided in a way that piques the players’ interest. This is supported by the findings as several players perceive a sense of novelty as highly valuable since it explicitly affects their engagement with the game.

Malone (1981) also establishes the importance of both *cognitive* and *sensory curiosity*, referring to how intrigued players are by the world setting of the game and the knowledge they have of it. The *sensory* aspect of curiosity is supported by the findings as impactful. Many players appreciate the visual impressions received from fantasy worlds in games. For instance, participants mentioned that they enjoyed exploring these worlds in part for their aesthetic aspects. On the *cognitive* side of curiosity, the findings show that some players perceive learning and acquiring knowledge as highly valuable, where some players also find value in creating strategies around this knowledge. This supports the importance of these two sides of the *Curiosity* aspect of Malone (1981), and this aspect could be beneficial when designing video games.

5.8.4 Informed Theory of Intrinsically Motivating Instruction

Malone (1981) specifically states that the social aspect was not taken into consideration when developing the theory, explicitly neglecting phenomena such as cooperation and competition. The theory was established before online multiplayer games existed in their current form, and certainly before the concept of Game-as-a-Service was established. However, based on the findings, it can be posited that the social aspect is essential for a theory used post Malone (1981), when developing GaaS games with a multiplayer component.

There were several elements related to socialization in the findings of the study. Overcoming challenges in groups was frequently found as motivating for play. Secondly, many participants found value in using games simply as social platforms to make and interact with friends. Thirdly, the factor of competition emerged as a motivator for some participants. It should be mentioned that a caveat for the inclusion of such an aspect in a modified version of Malone’s (1981) theory is that it would not be applicable for singleplayer games using the GaaS model (of which there are a significant number). The inclusion of a social aspect would be important when adapting the theory for system design within video game development though.

In Figure 3, an informed framework is presented where the aforementioned elements are captured under the aspect of *Social Interaction*, which comprises *Socialization*, *Cooperation*, and *Competition*. The additional aspect of *Social Interaction* is based on the findings of this bachelor’s thesis study, where the elements within it were found to be important components of players’ value perceptions. Figure 3 summarizes some of the aspects from Malone’s (1981) original framework. The informed framework can be utilized by HIS developers to understand the value of developing different features in multiplayer GaaS products.

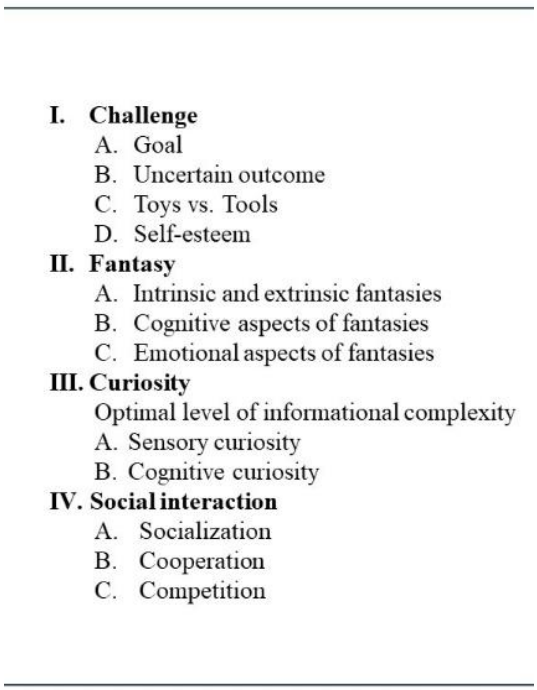

Figure 3: Informed version of Malone's (1981) framework for a Theory of Intrinsically Motivating Instruction (made by the authors, 2024)

6 Conclusion

In the Conclusion chapter, the bachelor’s thesis study summarizes the key findings related to player perspectives within Game-as-a-Service (GaaS) products. The chapter reiterates the importance of understanding user preferences and values in prioritizing features within GaaS offerings. It also points out the theoretical and practical contributions of the research, highlighting how the insights gained can inform future game development practices and enhance user satisfaction in GaaS products.

6.1 Conclusions

The area of focus of this bachelor’s thesis was hedonic information systems, more specifically video games utilizing the Game-as-a-Service (GaaS) model. The purpose of this bachelor’s thesis research was to investigate the users’ (in this case players) perspectives, and what aspects they perceive as valuable. The aim of the research was to provide a better understanding of the user perspective and how different features can be prioritized when developing GaaS products as a result of this. The following research question was posed: *How do players of live service games perceive the value of different game aspects?* To answer the research question, data collection was performed by conducting a qualitative online survey, purposefully targeted at World of Warcraft players through online communities. The collected data were analyzed using thematic analysis, identifying seven themes with sub-themes. The findings were discussed using relevant literature and the *Theory of Intrinsically Motivating Instruction*.

The findings show that many different factors are highly appreciated by players of World of Warcraft: Dragonflight. However, some factors are far more frequent within the responses collected. The two most prominent factors highly valued by players are those which give senses of progression and achievement. This ought to be prioritized without compromising features enabling social engagement and a sense of immersion, as these were also found to be dominant themes within the findings.

Based on the findings of this bachelor’s thesis study, Malone’s (1981) theory cannot be used without modification to guide game development within GaaS. The theory lacks one component of developing multiplayer games, namely the social aspect of play. Furthermore, the GaaS model ought to be of additional help with the continuous improvement of games in accordance with specific player preferences for elements, such as individual fantasies. Ultimately, the suggestions of the findings inform Malone’s (1981) theory, resulting in an additional aspect: the aspect of *social interaction*.

6.2 Contribution

6.2.1 Theoretical Contribution

This bachelor’s thesis contributes to knowledge about the preferences of players of social live service games. The research outcome generates knowledge about how players of live service games perceive the value of different aspects of the game. While the study specifically targets

players of World of Warcraft: Dragonflight, the findings are largely supported by previous literature, and correspond to the well-cited theory established by Malone (1981), lending some credibility to the conclusions as valid also within the broader context of the topic.

6.2.2 Practical Contribution

The outcome of this bachelor’s thesis study points to several aspects being imperative to players’ perceptions of value, which should be taken into consideration when developing GaaS products. This enables hedonic information system developers to prioritize features which are more important to their player base, allowing them to create a more appealing product and increase player retention.

This bachelor’s thesis study has also shown that Malone’s (1981) Theory of Intrinsically Motivating Instruction can be utilized as a tool to guide the development of most aspects of video games. However, it should not be used without revision when creating multiplayer games as the theory lacks the aspect of socialization, which this bachelor’s thesis study has shown to be imperative to many players.

6.3 Suggestions for Further Research

The study conducted has broadly explored the preferences of players using GaaS products, but more in-depth studies could be conducted. This could help to better understand the value perceptions of players with a higher degree of granularity. It may also be worth conducting interviews with players of live service games such as World of Warcraft. In future research, one might want to perform theory-driven research to complement the outcome of this study, with a more in-depth focus on individual aspects of Malone’s (1981) theory, and with the inclusion of the social aspect.

References

Alexander, T.J., Sear, J. and Oikonomou, A. (2013) ‘An investigation of the effects of game difficulty on player enjoyment’. *Entertainment Computing*, 4(1), pp. 53-62, doi:10.1016/j.entcom.2012.09.001

Alexander, P. (2017) ‘Knowing how to play: Gamer knowledges and knowledge acquisition’, *Computers and Composition*, 44, pp. 1–12. doi:10.1016/j.compcom.2017.03.004.

Alves-Filho, S.E., Paradeda, R.B., Freitas, G. and Souza, A.A., (2023) ‘The influence of well-dressed npcs on player perception, immersion and decision-making in gaming’, *2023 IEEE Conference on Games (CoG)* pp. 1-8 [Preprint]. doi:10.1109/cog57401.2023.10333225.

Brühlmann, F., Mekler, E.D., Tuch, A.N. and Opwis, K. (2017). ‘Towards understanding the effects of individual gamification elements on intrinsic motivation and performance.’ *Computers in human behavior*, 71, pp.525-534. doi:10.1016/j.chb.2015.08.048.

Braun, V., and Clarke, V. (2006). ‘Using thematic analysis in psychology.’ *Qualitative Research in Psychology*, *3*(2), 77–101. doi:10.1191/1478088706qp063oa

Carstensdottir, E. and Larsen, B.A. (2021) ‘Wrestling with destiny: Storytelling in perennial games’, *Interactive Storytelling*, 13138, pp. 236–254. doi:10.1007/978-3-030-92300-6_22.

Cesário, V., Ribeiro, M. and Coelho, A. (2023) ‘Design recommendations for improving immersion in role-playing video games. A focus on storytelling and localisation’, *Interaction Design and Architecture(s) Journal*, 58, pp. 207–225. doi:10.55612/s-5002-058-009.

Collister, L.B. and Ross, T.L. (2014) ‘A Social Scientific Framework for social systems in online video games: Building a better looking for raid loot system in World of Warcraft’, *Computers in Human Behavior*, 36, pp. 1–12. doi:10.1016/j.chb.2014.03.023.

Dubois, L.-E. and Weststar, J. (2021) ‘Games-as-a-service: Conflicted identities on the new front-line of video game development’, New Media & Society, 24(10), pp. 2332–2353. doi:10.1177/1461444821995815.

Esteves, J., Valogianni, K. and Greenhill, A. (2021) ‘Online social games: The effect of social comparison elements on continuance behaviour’, *Information & Management*, 58(4) pp. 1–15. doi:10.1016/j.im.2021.103452.

Fraser, J., Katchabaw, M. and Mercer, R.E. (2014) ‘A methodological approach to identifying and quantifying video game difficulty factors‘, *Entertainment Computing*, 5(4), pp. 441–449. doi:10.1016/j.entcom.2014.08.004.

Griffin Gaming Partners. (2024). ‘Share of video game studios worldwide that are working on or intending to release a live service video game title as of 2023.’, Statista. Statista Inc.. Accessed: April 24, 2024. https://www.statista.com/statistics/1456771/live-service-games-game-dev/

Hammad, N., Hsieh, M., Harpstead, E. and Hammer, J. (2021) ‘Understanding player retention strategies in Animal Crossing: New horizons’, *Extended Abstracts of the 2021 Annual Symposium on Computer-Human Interaction in Play, pp. 163-167* [Preprint]. doi:10.1145/3450337.3483483

Harviainen, J.T., Lehtonen and M.J., Vesa, M. (2022) ‘Games-as-a-disservice: Emergent value co-destruction in platform business models’, *Journal of Business Research*, 141, pp. 564–574. doi:10.1016/j.jbusres.2021.11.055.

Harviainen, J.T. and Rapp, A. (2018) ‘Multiplayer online role-playing as information retrieval and system use: An ethnographic study’, *Journal of Documentation*, 74(3), pp. 624–640. doi:10.1108/jd-07-2017-0100.

He, Y. (2021). ‘The effect of game as a service on future game industry based on users view’, 2021 International Conference on Culture-oriented Science & Technology (ICCST). doi:10.1109/iccst53801.2021.00082.

Heinze, A., Vaudour, F. (2020). as a Service: Lessons from the video game , Global business & Organizational Excellence, 39(2), pp.31-40, doi:10.1002/joe.21982

Inkwood Research. (2024). 'Global video game market value from 2022 to 2032 (in billion U.S. dollars).', Statista. Statista Inc.. Accessed: March 19, 2024. https://www.statista.com/statistics/292056/video-game-market-value-worldwide/

Lokša, J. and Martončik, M. (2016) ‘Do world of warcraft (MMORPG) players experience less loneliness and social anxiety in online world (virtual environment) than in Real World (offline)?’, *Computers in Human Behavior*, 56, pp. 127–134. doi:10.1016/j.chb.2015.11.035.

Malone, T. (1981). ‘Toward a Theory of Intrinsically Motivating Instruction.’, *Cognitive Science*, 5(4), pp.333-369, doi:10.1016/S0364-0213(81)80017-1

Rapp, A. (2017a) ‘Designing Interactive Systems through a game lens: An ethnographic approach’, *Computers in Human Behavior*, 71, pp. 455–468. doi:10.1016/j.chb.2015.02.048.

Rapp, A. (2017b) ‘From games to gamification: A classification of rewards in World of warcraft for the design of Gamified Systems’, *Simulation & Gaming*, 48(3) , pp. 381–401. doi:10.1177/1046878117697147.

Rapp, A. (2021) ‘Time, engagement and video games: How game design elements shape the temporalities of play in massively multiplayer online role-playing games’, *Information Systems Journal*, 32(1), pp. 5–32. doi:10.1111/isj.12328.

Sigailov-Lanfranchi, J. (2019) ‘Impact of different levels of difficulty on immersion in video games’, *CEUR Workshop Proceedings, 2563, pp. 248-259* https://ceur-ws.org/Vol-2563/aics_24.pdf

Steinkuehler, C.A. and Williams, D. (2006) ‘Where everybody knows your (screen) name: Online games as “third places”’, *Journal of Computer-Mediated Communication*, 11(4), pp. 885–909. doi:10.1111/j.1083-6101.2006.00300.x.

Strojny, P., Strojny, A. and Rębilas, K. (2023) ‘Player involvement as a result of difficulty: An introductory study to test the suitability of the motivational intensity approach to video game research’, *PLOS ONE*, 18(3), pp. 1-16 . doi:10.1371/journal.pone.0282966.

Appendix A - Survey questions

***Section**: Information & Participation*

***Question 1**:*

Informed Consent Form for Bachelor’s Thesis

Date: March-April 2024

Title of the Research** (subject to change): **Game-as-a-Service: the Player Perspective

***Researchers**: Love Karlqvist & Måns Sjöstedt, Bachelor Programme in Information Systems, Lund University*

***Purpose of the Research**: The purpose of this thesis is to investigate how the value of different features within a live service game is perceived by different players, and to see if this aligns with what they usually enjoy in video games. This knowledge could benefit development of live service games by allowing developers to prioritize features that their player base perceives as valuable. It could also help highlight features that the players are likely to enjoy based on what they have played previously, which could help the developers improve these features over time.*

***What you will be asked to do in the Research:** You will be asked to take part in and fill out this survey with questions regarding World of Warcraft: Dragonflight and some general questions about previous experiences within games. The survey will take roughly **5 – 20** min.*

***Anonymity:** We will collect no personal information which can be used to identify you. The results of our data collection will be used solely for the purpose of the research. Your contribution will only be shared with us and our bachelor’s thesis supervisors. Anonymity will be provided to the fullest extent possible by law.*

***Voluntary Participation and Withdrawal:** Your participation in the research study is voluntary. In order for your answers to be recorded, you must be at least 18 years of age. You may choose not to submit your answers at any time, in which case no data will be collected. Your decision not to volunteer or stop participating will not influence the nature of your relationship with the researcher or Lund University either now, or in the future.*

***Questions about the research:** If you have questions about the research or about your role in the research study, please do not hesitate to contact us by e-mail at ma4722sj-s@student.lu.se*

***Legal Rights and Consent:** I am at least 18 years old and I consent to participate in the research study Game-as-a-Service: the Player Perspective conducted by Love Karlqvist and Måns Sjöstedt. I have understood the nature of this research study and I wish to participate and allow the recording of my answers. I am not resigning any of my legal rights by clicking “I agree”.*

Answer 1:

“I agree” or “I disagree”

Question 2:

Have you played the latest expansion of World of Warcraft (known as Dragonflight, which released on November 28th, 2022)?

Answer 2:

“Yes” or ”No”

Section: Demographics and General Questions

Question 3:

Age

Answer 3:

Below 18; 18-25; 26-30; 31-35; 36-40; 41-45; 46-50; 51-60; Above 60

Question 4:

Gender

Answer 4:

Woman; Man; Other; Prefer not to say

Question 5:

Why do you play video games?

Answer 5:

Text response

Question 6:

When playing video games, which aspects of a game do you usually find most rewarding?

Answer 6:

Text response

Question 7:

On average, how many hours per week did you spend playing videogames in the past month?

Answer 7:

Less then 5 hours/week; 5-10 hours/week; 11-15 hours/week;16-20 hours/week; 21-30 hours/week; 31-40 hours/week; More the 40 hours/week

Section: World of Warcraft: Dragonflight

Question 8:

*On average, how many hours per week did you spend playing **World of Warcraft: Dragonflight** in the past month?*

Answer 8:

Less then 5 hours/week; 5-10 hours/week; 11-15 hours/week;16-20 hours/week; 21-30 hours/week; 31-40 hours/week; More the 40 hours/week

Question 9:

If you typically spend more or less time than you did during the last month, what affects the amount of time you spend playing World of Warcraft?

Answer 9:

Text response

Question 10:

Please rank the following content, released during Dragonflight, based on your personal preferences.

Answer 10:

Ranking the following features:

Major updates to game systems (such as the overhauls of talent trees & professions); Instanced content and instance-related content (such as raids, dungeons); Dragonriding; New player character options (the new race and class options); Story content; New zones and zone-related content; New gear; New cosmetic content; PvP content

Question 11:

Please motivate your top choice for type of content in the list above. Why do you value this content more than other content?

Answer 11:

Text response

Question 12:

Please motivate your bottom choice for type of content in the list above. Why do you value this content less than other content?

Answer 12:

Text response

Question 13:

In general, how did you decide on your ranking of the different content?

Answer 13:

Text response

Appendix B – AI Statement

During the production of this bachelor’s thesis, AI was utilized solely to generate the abstract, and introductory paragraphs for the chapters. However, the texts have been altered and adapted by the authors of this bachelor’s thesis.

For the abstract this was done using ChatGPT (using the 3.5 model) and the following prompt: “Can you summarize the following conclusion chapter into an abstract containing no more than 200 words: (Conclusions chapter)”. It was also used when translating the abstract from English to Swedish.

For the introductory paragraphs ChatPDF was used, where a draft of the bachelor’s thesis was uploaded in PDF format, upon which the model was prompted to summarize each chapter. One example of these prompts is: “Can you write a concise introductory paragraph for the Introduction chapter?”

No AI-tools were used to any extent except for the aforementioned cases.