Daily Quests or Daily Pests? The Benefits and Pitfalls of Engagement Rewards in Games

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Many games use engagement rewards as incentives for players to engage, e.g., daily login rewards, repeatable challenges, or seasonal rewards like holiday skins. These rewards may serve players by facilitating enjoyment or motivation; however, they may also be considered differently by skeptical players, e.g., as dark patterns that do not benefit players, and may detract from—or even harm—player experiences. As they are widely prevalent in a variety of games, it is important to understand how such rewards are experienced by players to inform potential pitfalls, such as when they are negative for gaming experience or lead to unhealthy gaming behaviours. 178 participants completed a mixed-methods survey and described such rewards in games they play, the tasks required to acquire them, and their experience qualitatively and with validated scales of motivation regulation and passion orientation. We found that players perceived these rewards as beneficial (e.g., as motivation), as negative (e.g., by promoting fear of missing out), or even as an obligation or chore. Quantitative results further support the dualistic experience of such rewards. We contribute findings and design recommendations that are useful for understanding and designing widely used but potentially detrimental reward mechanics.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**; • **Applied computing** → **Computer games**; • **Software and its engineering** → **Interactive games**.

Additional Key Words and Phrases: games, reward, daily, quests, engagement, motivation, passion, lootbox

1 INTRODUCTION

Many current games use *engagement rewards*, i.e., rewards that aim to entice players to engage with the game by providing motivation to login and play. For example, games may use daily login rewards, such as for simply logging into the game client (e.g., *Guild Wars 2* [4]), rewards for generic repeating in-game challenges or quests that are renewed daily, weekly, or monthly (e.g., "Win 5 games of Traditional Ranked Mode" in *Hearthstone* [10]), accumulating and increasingly more valuable rewards for continuous play (e.g., better rewards for login streaks that reset when not playing for a day like in *Farm Heroes Saga* [57]), rewards through season passes (e.g., in *Fortnite* [36]), or rewards for play during event periods (e.g., winter holiday styled cosmetics distributed to players logging in during the holiday season, such as the *"Snowman Thrall"* skin [33] in *Hearthstone* [10]).

While games researchers have investigated videogame rewards broadly, these engagement rewards are unique for several reasons; for example, they are usually time-restricted, specifically

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aimed at engaging players to regular play, and acquired through completion of non-specific or trivial tasks. Due to these differences, they might affect players differently than general videogame rewards that are obtained through regular play. Yet, little is known about how players experience these particular forms of engagement rewards. Intuitively, they might be beneficial in the same way as general rewards, by enabling progress and enjoyment [5, 80, 85], enabling satisfaction of competence through additional specific challenges [35, 58, 91], or through access to otherwise inaccessible or paid content (e.g., free cards from commonly-paid card packs in collectible card games).

However, just because a game feature is included in many commercial games does not imply that it is optimal for engagement—or even beneficial to players. Parallel to discussions around design features in current apps (e.g., infinite scrolling [23]), the effect of using technology on everyday life (e.g., discussions about effects of social media on mental health [64]), and particular game features that may be harmful to players (e.g., discussions around gambling and addiction of loot boxes [32, 103, 106]), there is an urgent need to examine aspects of games—similar as with all HCI systems—that are so widely prevalent that they can affect a wide majority of players, with potential ramifications to players beyond the game session itself. While game developers may include *engagement rewards* with the best intentions (e.g., providing free rewards, supporting engagement, and improving player experience), these same designs also serve to increase revenues. These rewards share characteristics with game design features that have been considered dark patterns in games [105], i.e., designs without the players' best intention in mind. In particular, with an increasing and ongoing skepticism of player communities about game developers' intentions and general practices (e.g., greed [2], trying to make people addicted [59], and sexism [20, 25]), it is important to understand how players perceive and experience game features. Thus, our goal is to better understand how engagement rewards relate to play experiences.

In this paper, we conducted a mixed-methods survey, in which 178 participants reported their experience and behaviour with engagement rewards using open responses and validated scales. We analyzed the open responses using thematic analysis. While some participants were comparably indifferent (not caring about or not minding to miss out on rewards), we found that engagement rewards were mostly considered positively. We identified an *Engagement Rewards Contribute to a Positive Player Experience* theme (i.e., players enjoyed them and considered them as motivation to play, accomplishments, and fun), and an *Engagement Rewards Facilitate Play* theme (i.e., they allow free-to-play players to compete without paying money, provide in-game help like power-ups required for progress, and help advance their collections). However, engagement rewards were also associated with negative experiences, especially when missing out. We identified a *The Bad Experience of Missing Out* theme: players reported being frustrated, annoyed, disappointed, sad, and had feelings of missing out when they were not able to complete rewards in time, particularly when missing them led to losses of streaks. Further, engagement rewards were associated with an obligation to play; in the *The Obligation to Play* theme, participants described the rewards as a *"chore"*, *"like a job"*, and *"tedious"*, which was particularly problematic when gating play, resulting in decreased competitiveness, or wasted time. The quantitative results reinforced the dualistic experience of these rewards: players who engaged naturally with rewards also reported higher intrinsic motivation, lower amotivation, and higher harmonious passion for play, whereas playing just to acquire engagement rewards (i.e., when engagement rewards are successful at enticing players to engage) was associated with higher externally-regulated motivation, higher amotivation, and higher obsessive passion. We propose three design recommendations *"Decrease The Potential of Missing Out"*, *"Use Engagement Rewards As Optional Bonuses To Facilitate Positive Player Experience"*, and *"Use Engagement Rewards to Facilitate Play for Free-to-Play Players"* that

can help game developers implement engagement rewards that provide the benefits with reduced potential of harm.

Our findings are important for understanding a widely used but still understudied type of rewards. Engagement rewards can be great for players in many instances, as they can provide benefits such as facilitating intrinsic motivation, enjoyment, and harmonious passion, as well as ways for players to access free-to-play games, for which they would otherwise have to spend money. However, our findings also highlight that these rewards can be detrimental in some instances when players miss out on rewards that they wanted or when they feel obligated to play. Then, these rewards could be associated with more obsessive passion and amotivation, and might even be considered as designed with ill-intent. Our insights help to understand and design the experience of such rewards and design guidelines that can help designers implement engagement rewards that benefit players while avoiding the detrimental effects.

2 BACKGROUND AND RELATED WORK

We discuss prior work on rewards in games and their relationship with motivation and passion for play.

2.1 Rewards in Games

In this paper, we investigate engagement rewards as a specific form of videogame rewards. Phillips, Johnson, and Wyeth [81] defined videogame rewards as a *"positive return that serves to reinforce player behavior within a videogame"*, a definition that very much applies to what we consider engagement rewards. While it does not capture the specifics of engagement rewards (e.g., time-restricted, associated with non-specific or trivial tasks), it is useful to consider in defining a reward's aim (i.e., "reinforce player behavior"), which applies to engagement rewards in a particular way (i.e., specifically aimed at increasing regular play). Generally, rewards in videogames are considered important, enabling several positive outcomes such as progress, empowerment, and enjoyment [5, 80, 85, 86].

While much research on gamified applications and games has investigated specific types of rewards [82], such as achievements [73], badges [29], cosmetics [73], points [70], power-ups [28], or leaderboards [12, 70], some work has also studied rewards more comprehensively, e.g., with typologies for rewards in games. For example, Wang and Su [102] and Hallford and Hallford [45] proposed some of the first taxonomies for rewards in games. Later work by Phillips, Johnson, and Wyeth [81] and Phillips et al. [82] built on these earlier classifications and proposed a redefined typology of videogame reward types, consisting of six types of rewards (Access, Facility, Sustenance, Glory, Praise, and Sensory Feedback). Subsequently, experimental work suggested that these reward types did not significantly differ in how they affected player experience but that a variety of rewards (i.e., in an all rewards condition) led to higher enjoyment than individual or no rewards [80]. Despite this prevalence and substantial research interest in videogame rewards, the majority of research still investigated specific types of rewards that are part of the main game loop (e.g., power-ups or score systems that directly reward in-game behaviours), which might be related but not directly applicable.

We are interested in investigating how the players' interaction with engagement rewards affects their experience and behaviour on a higher level. While it is likely that there is some overlap with general videogame rewards, engagement rewards are quite different for multiple reasons. First, they are usually time-restricted to encourage players to engage with the game (e.g., by resetting the availability on a regular basis). Second, they are partially external to the main gameloop and transcend the structure and narrative of the game (e.g., breaking the fourth wall and incorporating physical world time as time restrictions). Third, they often require completion of generic (i.e.,

unrelated to the game's narrative) and reoccurring meta tasks (e.g., login to the game, play a specific number of matches). These differences are also emphasized by earlier work. Recent research [3] has investigated game dynamics that support *"snacking"*, i.e., short burst interactions common in mobile apps [74, 79, 98]. Games and applications that support such behaviour aim to increase engagement in short sessions [3, 74], which are common in many games and assumed to be essential for success [49]. In their analysis of games, Alexandrovsky et al. [3] identified *rewards* as one game mechanic that is used to enable such behaviour, but conceptualized rewards as "rewards or achievements given to the player immediately upon completion of the deserving game action" [3]. Thus, their research addresses *in-game* rewards that are somewhat different from our conceptualization of engagement rewards, which might affect player experience differently, for example by affecting motivation differently.

2.2 Motivation, Passion, and Rewards

An often-applied theoretical lens for understanding the motivations for videogame play and its influence in our lives is self-determination theory (SDT) [92, 97]. SDT proposes that people have key psychological needs (autonomy, competence, relatedness) and are intrinsically motivated to undertake activities that satisfy these needs [26, 89]. Satisfying these three needs through undertaking various activities has been shown to lead to wellbeing [26, 89], and research suggests that videogames are an activity that in many cases can be used to facilitate need satisfaction [51, 84].

2.2.1 Motivation Regulation and Gaming. SDT additionally includes sub-theories that articulate specifics of need satisfaction and motivation that are relevant to videogame play [89]. One of these, Organismic Integration Theory (OIT) presents a spectrum of types of motivation and associated regulatory styles. As shown in Figure 1 [reproduced from 89], OIT presents several motivational regulations based on the extent to which the motivations emanate from the self. At one end is Intrinsic Regulation, in which we are fully intrinsically motivated and undertake behaviours for their inherent satisfaction, interest, and enjoyment. At the other end is Amotivation, in which we lack the intention to act and may not act at all or may act without intent or purpose (i.e., simply going through the motions), with no expectation of reward or an outcome. Between these two motivation types, OIT presents four regulatory styles associated with extrinsic motivation, which primarily vary in the degree of autonomy we experience. External Regulation (the least autonomous) refers to behaviours that we perform to satisfy an external demand or reward contingency. Regardless of whether the behaviour is undertaken to obtain rewards or to avoid negative sanctions, we experience an obligation to behave in a particular manner. Introjected Regulation refers to behaviours in which we have internalised a regulation without fully accepting it as our own, e.g., to avoid guilt or anxiety or to attain ego-enhancements such as pride. Identified Regulation is a more self-determined type in which we consciously value a behaviour, finding it important to us personally. And Integrated Regulation involves motivations that are fully assimilated and that are in congruence with our other values. However, even with these more self-determined regulations, the motivation is still considered as extrinsic because the activity is not performed simply for itself (as with Intrinsic Motivation), but as a means to an end, whether than end be a reward, avoiding guilt, experiencing pride, or feeling congruence in being the type of person who undertakes that behaviour. Research has established that higher levels of internalisation can lead to better wellbeing outcomes, which are absent for the more external forms of regulation [89, 90], across a range of domains from physical exercise [21] to intimate relationships [9].

Videogame researchers have often used the lenses of SDT and OIT to understand how rewards are experienced by players, as well as how rewards facilitate engagement. Phillips et al. [82] discuss how videogame rewards are often characterised as either extrinsic or intrinsic, while noting that game

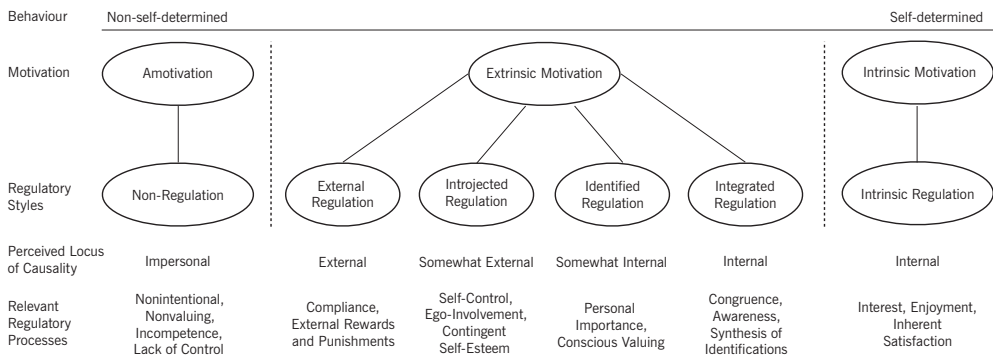| Behaviour	Non-self-determined					Self-determined
Motivation	Amotivation		Extrinsic Motivation			Intrinsic Motivation
Regulatory Styles	Non-Regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Perceived Locus of Causality	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal
Relevant Regulatory Processes	Nonintentional, Nonvaluing, Incompetence, Lack of Control	Compliance, External Rewards and Punishments	Self-Control, Ego-Involvement, Contingent Self-Esteem	Personal Importance, Conscious Valuing	Congruence, Awareness, Synthesis of Identifications	Interest, Enjoyment, Inherent Satisfaction

Fig. 1. Continuum of motivation regulation, as described by OIT, reproduced from [89].

systems can employ rewards to influence player engagement. For example, much of the literature surrounding 'gamification' considers whether the included gaming elements facilitate intrinsic motivation (e.g., [76]) or extrinsic motivation (e.g., [47]), and the interplay between them has also been explored (e.g., [8]). Further, there has been some effort among researchers to disentangle the different motivation regulations in the context of gamified applications [7] or frameworks of gamification [94].

These different types of regulation can be useful to help understand why engagement rewards might be different than other videogame rewards. While in-game rewards are part of the experience and provided as part of play, engagement rewards are–by definition–intended to influence a player's decision on when and how to engage with a game, and might therefore be associated with more external regulation.

In exploring how the associations between motivation regulation and videogame play affect wellbeing, researchers have shown the expected relationships of less extrinsic and more intrinsic regulatory styles for videogames being more strongly associated with wellbeing. Lafrenière and colleagues [60] found that higher levels of need satisfaction were more associated with intrinsic motivation, integrated regulation, and identified regulation than with introjected regulation, external regulation, and amotivation. By surveying players of League of Legends, Brühlmann et al. [17] found that players with more intrinsic motivations experienced greater enjoyment and vitality as well as less negative affect and tension. Comello et al. [24] found a similar pattern between motivation regulation for videogame play and communication self-efficacy, resilient coping, and flourishing among a group of cancer survivors, as did Johnson et al. [52] between motivation regulation for videogame play and wellbeing in a sample of students experiencing their first-episode of psychosis. Although these associations between motivation regulation and wellbeing have been established directly, there is also evidence that this link is mediated by a developing passion—that is, over time, a person who regularly undertakes an activity that satisfies their psychological needs will come to develop a passion for that activity, which can lead to positive outcomes [99].

2.2.2 Passion Orientation and Gaming. The Dualistic Model of Passion (DMP) characterizes the passion that a person develops from satisfying their needs through an activity [65, 99]. In a series of studies and within the context of different activities (e.g., work, study, music, sports), Vallerand et al. [99] explored how passion for an activity develops and manifests, resulting in the Dualistic Model of Passion (DMP). When we engage in an activity, and come to value it, we internalize it and adopt it as part of our self-identity [99]. This process of internalization differentiates the enjoyment of an activity—i.e., the intrinsic motivation to engage with it [27]—from activities that have become

an enduring part of our identity. For example, gaming is a pleasurable pastime for many, but others have developed a passion for gaming that has resulted in their identification as a 'gamer'. The DMP described how a developing passion can manifest in ways that are more harmonious or more obsessive [99]. Harmonious passion is evident when the activity is balanced with other areas of a person's life, is described in positive terms, and is engaged in freely without negative consequences. Obsessive passion, in contrast, is shown when a person experiences more of an uncontrollable urge to engage in the activity and the activity tends to cause conflict with other parts of the person's life [99].

Outside of videogames, there is consistent evidence (e.g., [61, 95, 100]) that harmonious passion is associated with positive outcomes (e.g., self-development, social interaction, satisfaction with life, vitality) and some evidence that it is also associated with decreased negative outcomes (e.g., negative affect). On the other hand, obsessive passion has been shown to be consistently associated with negative outcomes (e.g., overuse of media, academic burnout, negative affect) and there is also some evidence of decreased positive outcomes (e.g., vitality). This same pattern has been more recently shown in the context of videogame play, with harmonious passion for gaming associated with positive outcomes including skill development, motivation to relax and recreate, post-play energy, life-satisfaction, wellbeing, and mental health [51, 52, 66, 84, 95], and obsessive passion for gaming related to problematic use of videogames, motivation to procrastinate, post-play tension, sleep disorders, loneliness, addiction, and psychological distress [51, 52, 66, 84, 93, 95].

Given that engagement rewards aim to influence the frequency and manner in which players engage with games, we expect that how players interact with them might be associated with their passion orientation for play; players with higher obsessive passion may play more often just to acquire engagement rewards and players who are harmoniously passionate may interact with engagement rewards more naturally, i.e., when they play anyways.

2.3 Summary and Research Gap

Engagement rewards are ubiquitous in games, share some characteristics with general videogame rewards, but also have some characteristics that make them different. We define an engagement reward as *a positive return in a videogame for completing a time-restricted, trivial task aiming to entice players to engage with the game*. As such, they have similarities with existing concepts but differ in some regards. For example, similar to regular videogame rewards as defined by Phillips, Johnson, and Wyeth [81], they represent a positive return in a game, but are time-restricted and have a dedicated aim of increasing engagement. As with some reward schedules in gamification [67], they are also time-dependent (e.g., available for a limited time or during events) and aimed at increasing engagement, but part of a videogame and not a gamified application. They overlap to a large degree with seasonal content [63], but always represent positive returns (in contrast to some seasonal content that is not necessarily a reward, such as adding a winter theme to a MMO city) and also comprise non-seasonal aspects (e.g., daily rewards). To understand how this specific type of rewards can affect players, we require research that investigates how players experience engagement rewards, including how the players' interaction with them is associated with different motivation regulation and passion for play. Specifically, we explored two research questions: What are important themes for experiences of engagement rewards in videogames (RQ1)? How does interaction with engagement rewards relate to motivation regulation and passion orientation in videogames (RQ2)?

3 STUDY METHODS

We conducted an online survey investigating how players experience engagement rewards. Our goal was to generate themes for the experience of engagement rewards and to assess whether

interaction with engagement rewards was associated with the players' motivation regulation and passion orientation.

3.1 Prescreen

We aimed to recruit participants who were familiar with games and regularly played games to ensure that they were familiar with how games use engagement rewards to encourage players to regular play. To that end, we distributed a prescreen on Amazon Mechanical Turk assessing participants' gaming background and experiences with engagement rewards. They were instructed about the context (*"Some games offer time-based rewards, such as daily quests to complete or bonus rewards for daily logins."*) and then asked to select how often they played games with such rewards, to provide the names of these games, and to describe the rewards. From all respondents, we selected those who fulfilled these criteria and mentioned games and suitable descriptions for engagement rewards. This resulted in a set of 231 participants who were invited to take part in the main study.

3.2 Procedure, Measures, & Data Validation

We used a guided recall protocol for this study, similar to earlier work [11, 35, 53]. Participants answered a series of validated scales and open-ended questions for this survey. First, they provided informed consent and answered questionnaires about demographic background and gaming experience and habits. They were introduced to the concept (*"The following questions relate to a specific type of games. Some games offer time-restricted rewards, such as rewards for daily quests or daily login bonuses. Please bring to mind one specific digital game with such rewards that you are playing regularly."*) and then were asked to rate their engagement with these tasks. For this, we used two scales from 1 (= *"never"*) to 100 (= *"always"*):

- How often they completed tasks for engagement rewards in general (*"How often do you complete tasks to acquire a time-restricted reward?"*; *natural ER interaction* for briefness)
- How often they played the games *just* for the rewards, i.e., when the game succeeds at enticing them to play (*"How often do you start, login, or play the game just to acquire a time-restricted reward (e.g., just login to get a daily login bonus)?"*, called *enticed ER interaction* for briefness).

Then, they were asked to think about one specific reward and provide four descriptions:

- *ER description reward*: general description (*"In your own words, please describe this reward."*)
- *ER description task*: the task required (*"In your own words, please describe what you have to do to acquire this reward, e.g., what task you have to complete."*)
- *ER description experience*: their experience thereof (*"In your own words, please describe how you feel about these rewards."*)
- *ER description missing out*: how they feel about missing rewards (*"In your own words, please describe how you feel about missing out on these rewards (e.g., if you do not complete a daily quest in time)."*)

In addition, participants answered validated scales about their experience. We adapted Vallerand et al.'s passion scale [99] to refer to the participants' passion for playing videogames. The scale measures harmonious passion (6 items; $\alpha = 0.865$) and obsessive passion (6 items; $\alpha = 0.862$) on 7-point Likert scales from 1 (= *"Not true at all"*) to 7 (= *"Very true"*). Further, participants answered an adapted version of the *Situational Motivation Scale (SIMS)* [43], with the instruction to respond in relation to the game they had described in their reward descriptions. The scale assesses four motivation regulations: intrinsic motivation (4 items; $\alpha = 0.859$), identified regulation (4 items; $\alpha = 0.697$), external regulation (4 items; $\alpha = 0.828$), and amotivation (4 items; $\alpha = 0.879$). On 7-point scales from 1 (= *"corresponds not at all"*) to 7 (= *"corresponds exactly"*), participants rated statements about their motivations for playing the game (e.g., intrinsic motivation: *"Because I think*

that this game is interesting"; external regulation: *"Because I feel that I have to do it"*). We used these scales to assess passion orientation with the games (i.e., balanced and authentic passion vs a persistent and inflexible passion) and the motivation regulation for play (e.g., intrinsically motivated vs externally regulated). We used these scales in the quantitative analysis in relation to the two measures for engagement reward interaction, i.e., *natural ER interaction* and *enticed ER interaction*. Of note, the latter were used as continuous measures and non-exclusive, i.e., we did not assign participants to categories. This was done because we were interested in evaluating the relationships and participants could complete tasks both naturally during play (*natural ER interaction*) and just for sake of the rewards, i.e., playing just to get the rewards (*enticed ER interaction*).

There were 197 respondents who completed the main survey. To filter out respondents who were not attentive, we analyzed response times and variances [18, 69]. Further, we checked responses to open-ended questions for spurious responses or responses indicating misunderstandings of the concept of engagement rewards. During initial coding, we kept track of types of rewards and tasks and ensured that reported descriptions represented experiences relevant to our research questions while aiming for a comprehensive set of experiences. With this filtering protocol, we removed a total of 19 participants, resulting in a final sample of 178 participants.

3.3 Participants

The final sample of 178 participants (man = 106, woman = 66, non-binary = 4, prefer not to disclose = 1, prefer to self-describe = 1: *"Nonbinary/Agender"*) was aged 19 to 66 ($M = 35.433$, $SD = 9.067$). On a scale from 1 to 100, they identified as gamers to a substantial degree ($M = 74.966$, $SD = 20.947$) and reported playing games regularly (*"every day"* = 124, *"a few times per week"* = 53, *"a few times per month"* = 1). They were paid $ 4.00 USD for approximately 20 minutes.

3.4 Qualitative Data Analysis

All qualitative data from open responses were analyzed with inductive thematic analysis [14]. Although there is not a single process to thematic analysis [15], usually six phases are used: 1) familiarization, 2) coding, 3) initial theme generation, 4) development and review of themes, 5) refining, defining and naming themes, and 6) reporting [15].

We used this approach to generate themes for the experience of rewards (*ER description experience*) and of missing out (*ER description missing out*). We started the process with familiarization, consisting of an initial read of all the descriptions and loosely taking notes about potential codes. Then, the first author iteratively coded all the descriptions in a single-coder approach while continuously building and refining the code book. We followed an inductive coding approach due to the lack of a guiding theory, and as we aimed for a bottom-up approach. We used a mix of semantic (i.e., in the participants' words) and latent (i.e., extracting the underlying meaning) codes. Exemplary codes include *"incentive to keep playing"*, *"sense of accomplishment"*, *"hate to miss out"*, and *"a chore"*. We used a coding approach on the level of whole responses but assigned multiple codes if applicable. For example, participants frequently mentioned in-game currency as a reward type that can be redeemed for a variety of rewards that might be part of other categories. We added codes in such cases if participants explicitly mentioned a reward belonging to a specific category. For instance, we added both codes for *"in-game currency"* and *"collectible"* for the description *"Free in-game currency used for summoning"* (P154). Throughout the coding process, we aimed for early theme generation and thus made note of potential themes. After the coding step, we generated an initial set of themes. These were reviewed and discussed amongst the authors, resulting in further refinement. Finally, we generated four themes for the experiences of engagement rewards (see Results section). In addition to these themes, we iteratively coded the descriptions of engagement

rewards (*ER description reward*) and tasks required to acquire them (*ER description task*) to assess the different types of experiences described.

4 RESULTS

We describe games, rewards, and tasks required to provide an overview of the rewards, for which participants described (qualitatively) and rated (quantitatively) their experiences. Then, we present four themes for the experience of engagement rewards, and how the players' engagement with rewards was associated with motivation regulation and passion orientation.

The participants described rewards from 115 games covering a variety of genres. The most mentioned games were *Candy Crush* [56] ($n = 9$), *League of Legends* [37] ($n = 8$), *Genshin Impact* [71] ($n = 6$), *World of Warcraft* [77] ($n = 5$), and *Pokémon Go* [75] ($n = 4$). The rewards were varied too, including in-game currency (default in-game currency that can be spent on different things), rewards related to the game's core mechanics (e.g., equipment, perks, Pokémon), rare or restricted rewards (e.g., limited item skins), cosmetics (e.g., card sleeves), experience points (e.g., for battle pass progression), collectibles (e.g., cards from Hearthstone card packs), in-game power-ups (e.g., consumable power-ups that help players to complete levels), and currency required to play (e.g., lives/energy). Participants also described different tasks they had to complete to acquire the rewards, including in-game challenges or quests specific to the game's mechanics (e.g., collect a number of items or kill a number of enemies), simply logging in or starting the game client, streaks (i.e., completing tasks or logins in consecutive fashion, e.g., complete daily quests every day), logging in during specific event periods like winter holidays, or even watching ads. As such, reported experiences represented a wide variety of different games, types of engagement rewards, and tasks required to acquire them. This resulted in a comprehensive picture of engagement rewards across a spectrum of play experiences.

4.1 Experience of Engagement Rewards: Themes

Our analysis generated four themes for the experience of engagement rewards.

4.1.1 Engagement Rewards Contribute to a Positive Player Experience. Engagement rewards were mostly regarded positively with many descriptions including a variety of positive comments about rewards. Participants stated that they like (*"I like this type of reward"*, P203) and enjoy them (*"I enjoy getting these rewards for simply playing the game"*, P75), and that they are fun (*"I think that they are fun"*, P35), exciting (*"I feel excited and feel like winning a lottery"*, P55), and make them feel good (*"The rewards make me feel good"*, P189). Then, participants also described more specific positive aspects and reasons why they were positive, such as considering them rewarding (*"It is rewarding once you finally finish and are able to obtain it."*, P194) and accomplishments (*"overall I get a sense of accomplishment."*, P98). They liked getting rewards that they perceived as "free" (*"I appreciate getting free rewards"*, P93) and the thrill of being surprised which rewards they receive (*" I like the excitement of seeing what level of rarity I'll get"*, P144). Finally, participants specifically mentioned how the rewards encouraged them to play (*"I feel like it is a good way to encourage players to log in everyday"*, P153), and provided motivation (*"Those rewards motivate me to play everyday"*, P94) and incentives to play (*"I like that there's an incentive to log in every day and have something easy to complete"*, P149). Overall, engagement rewards were perceived as positive by many participants.

4.1.2 Engagement Rewards Facilitate Play. In addition to motivation and positive experience, the participants also described ways in which engagement rewards *facilitated* play. For those participants, these rewards not only *motivated* but *enabled* them to play. They reported rewards from games that gate progression (e.g., with battle passes of increasing rewards), collection (e.g., players having to spend money on card packs in card games or sport games), or even play in

general (e.g., through life systems that replenish over time or by paying money). They described how engagement rewards allowed them to play despite these restrictions. They stated how they allowed them to play without spending time (*"The rewards are nice simply because it helps accelerate my progress for the game for the current season. Without these bonuses, it takes a long time to complete the battle-pass."*, P163) or money (*"The rewards make me feel good as they help me progress in the game and are free to me."*, P189). They described how these rewards allowed them to advance their collections for free (*"these are great rewards allowing a player to get any 1 card that they want for free"*, P91) and to progress in games through in-game powerups that make it easier to beat levels (*"They are very helpful because sometimes the games are hard and these 'power ups' are needed to succeed and move on."*, P198). In general, participants frequently mentioned that they appreciated engagement rewards that provided benefits for content that they usually had to buy with money (*"I feel like it's a nice idea to provide the players with a way to obtain this usually paid currency without investing real money."*, P129), suggesting that these rewards are particularly useful to facilitate play for free-to-play players, basically making it possible for them to play the game at all.

4.1.3 The Bad Experience of Missing Out. While a substantial amount of players did not mind missing out on rewards, we also found many accounts of bad experiences. Participants reported being annoyed (*"I feel a bit annoyed since I'd have to wait until the next promotional period of this kind to unlock these rewards without paying."*, P16), disappointed (*"It feels disappointing if I forget to play and log in to collect my bonus. I feel like I am missing out on the free stuff if I don't get to collect it."*, P30), and frustrated (*"I get frustrated with myself if I can't earn the rewards."*, P2). These negative descriptions seemed particularly negative when associated with falling behind and losing competitiveness (*"It's more stressful than it should be for a game; I feel like if I don't have my upgrades each week, then the following week, I will underperform and 'hold everyone back,' or end up 'behind schedule.' There's no reason to feel this way – it's totally irrational – but I still feel unusually bummed out if I am not able to do these weekly quests."*, P70) or the loss of streaks (*"It depends on whether I have developed a streak of getting those daily quests. If I miss on the first day it ain't that bad. However, if I destroy the streak where I have gotten 8-9 daily quests in a row, I feel pretty bad."*, P45). Overall, engagement rewards seemed to be associated with negative experiences if players miss out on them, which was sometimes due to the specific design of the engagement rewards (e.g., with streaks or related to competitiveness).

4.1.4 The Obligation to Play. For some participants, there was a general sense that they were not motivated but rather felt *obligated* to play . They considered these rewards *"a chore"* (P117 & P201) and a hassle and like a job (*"It is more of a hassle to try to remember to do the daily quests each day. It feels like a job more than a fun game mechanic."*, P131). One participant described these rewards as a frustrating time commitment and that they lead to late-night play without really wanting to (*"I enjoy the content itself, but I find the time commitment to be frustrating because there are often weeks where I just don't have the time for it and have to kind of rush to get it in later at night than I would particularly like."*, P70). Another participant described missing out as inducing a sense of failure and a feeling that they *"have to play"* more to recover (*"Weirdly enough, I feel like there was a small sense of failure in my daily routine. I feel like I've lost time because in order to recoup the EXP bonus lost, I have to play more to get that EXP back."*, P163). One participant described having a long streak of continuous logins that they were afraid to lose (*"At this point I've had my daily streak going for 857 days, so it's almost a compulsive thing at this point! I feel like I have to do it to continue to be successful in the game."*, P159). Some participants even mentioned that they considered these rewards as intentionally designed for *"addict-like behaviour"* (*"They improve my experience with the game, but they also make me feel like the developer is trying to produce addict-like behavior from regular gamers."*, P16) and manipulating the players to come back even if the games were not fun

(*"I absolutely hate these types of rewards for logging in. I understand why it's done, which makes me hate it even more. [...] But, if the core gameplay loop of a game is fun, even an online game, people won't have to be 'manipulated' into coming back for a 'reward.' They would come back because they want to."*, P172). Thus, engagement rewards were sometimes associated with an obligation to play when players did not really want to play and were sometimes even considered as designed with ill intentions.

4.2 Experience of Engagement Rewards: Quantitative Results

We analyzed quantitative responses to determine how interaction with engagement rewards was associated with motivation regulation and passion orientation. Table 1 shows descriptive statistics and correlations.

	M	*SD*	nERI	eERI	IM	IR	ER	AM	HP
nERI	70.888	25.060	—						
eERI	61.618	30.851	.507***	—					
IM	5.819	0.980	.216**	.085	—				
IR	4.056	1.182	.126	.095	.426***	—			
ER	1.698	1.010	.139	.245***	.051	.395***	—		
AM	1.824	1.082	−.064	.155*	−.513***	−.127	.365***	—	
HP	5.019	1.059	.229**	.160*	.429***	.289***	.078	−.205**	—
OP	2.394	1.059	.214**	.308***	.175*	.338***	.542***	.238**	.302***

Table 1. Descriptive statistics and Pearson correlations for nERI (*natural ER interaction*), eERI (*enticed ER interaction*), intrinsic motivation (IM), identified regulation (IR), external regulation (ER), amotivation (AM), harmonious passion (HP), and obsessive passion (OP). $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

We assumed that interacting with engagement rewards (*natural ER interaction* vs *enticed ER interaction*) might be associated with the players' passion orientation and motivation regulation and thus analyzed these relationships. We conducted multiple regression analyses with *natural ER interaction* and *enticed ER interaction* (see Section 3.2) as independent variables and harmonious passion (*HP*), obsessive passion (*OP*), intrinsic motivation (*IM*), identified regulation (*IR*), external regulation (*ER*), and amotivation (*AM*) as outcomes. Variance inflation factors (*VIF* = 1.345) suggested multicollinearity was not an issue. For all models, we entered both independent variables simultaneously (forced entry) to model the non-shared variance, and used JASP 0.14.1 [48] for data analysis.

The results for the regression models for motivation regulation are summarized in Table 2. They show that intrinsic motivation had a significant, positive relationship with *natural ER interaction* and a non-significant association with *enticed ER interaction*. Identified regulation did not show a significant relationship with *natural ER interaction* or *enticed ER interaction*. External regulation was not significantly associated with *natural ER interaction* but showed a positive, significant relationship with *enticed ER interaction*. Finally, amotivation showed significant relationships with both types of ER interaction, a negative relationship with *natural ER interaction* and a positive relationship with *enticed ER interaction*.

Table 3 shows the results for regression models for passion. They show that harmonious passion was significantly and positively associated with *natural ER interaction* but not significantly associated with *enticed ER interaction*. In contrast, obsessive passion was not significantly associated with *natural ER interaction* but positively and significantly associated with *enticed ER interaction*.

Outcome		B	$se\ B$	β	t	p
IM	(Intercept)	5.239	0.222		23.596	< .001
	natural ER interaction	0.009	0.003	0.232	2.714	0.007
	enticed ER interaction	−0.001	0.003	-0.033	-0.386	0.700
IR	(Intercept)	3.607	0.272		13.266	< .001
	natural ER interaction	0.005	0.004	0.105	1.213	0.227
	enticed ER interaction	0.002	0.003	0.041	0.473	0.637
ER	(Intercept)	1.167	0.227		5.133	< .001
	natural ER interaction	8.037e−4	0.003	0.020	0.235	0.815
	enticed ER interaction	0.008	0.003	0.235	2.766	0.006
AM	(Intercept)	1.868	0.245		7.638	< .001
	natural ER interaction	−0.008	0.004	−0.192	−2.253	0.025
	enticed ER interaction	0.009	0.003	0.253	2.958	0.004

Table 2. Regression models for intrinsic motivation (IM; $R^2 = 0.047$, $F(2, 175) = 4.342$, $p = .014$), identified regulation (IR; $R^2 = 0.017$, $F(2, 175) = 1.532$, $p = .219$), external regulation (ER; $R^2 = 0.060$, $F(2, 175) = 5.625$, $p = .004$), and amotivation (AM; $R^2 = 0.052$, $F(2, 175) = 4.757$, $p = .010$).

Outcome		B	$se\ B$	β	t	p
HP	(Intercept)	4.298	0.239		17.984	< .001
	natural ER interaction	0.008	0.004	0.199	2.332	0.021
	enticed ER interaction	0.002	0.003	0.059	0.691	0.491
OP	(Intercept)	1.496	0.262		5.718	< .001
	natural ER interaction	0.004	0.004	0.078	0.932	0.353
	enticed ER interaction	0.010	0.003	0.269	3.233	0.001

Table 3. Regression models for harmonious passion (HP; $R^2 = 0.055$, $F(2, 175) = 5.078$, $p = .007$) and obsessive passion (OP; $R^2 = 0.100$, $F(2, 175) = 9.669$, $p < .001$)

Effect sizes suggested that effects were comparably small ranging between small for identified regulation and small to medium for obsessive passion with 1.7% ($F^2 = .017$) and 10.0% in explained variance in outcomes respectively ($F^2 = .111$) [88]. These effects are lower than those from other models, such as for predicting intrinsic motivation and competence in success and failure situations in games [35] ($F^2 > .443$). However, we used only interaction metrics, i.e., interaction with engagement rewards, as predictors. Thus and unsurprisingly, further variables are associated with passion orientation and motivation regulation in games. However, the *natural ER interaction* and *enticed ER interaction* may be small but meaningful factors that are associated with motivation regulation and passion orientation of players.

5 DISCUSSION

We consolidate our results and discuss them in context of earlier work, present design guidelines for the implementation of engagement rewards, and outline the limitations and potential for future work.

5.1 The Experience of Engagement Rewards: The Good, the Bad, and the Ugly

Our qualitative and quantitative results both suggest that engagement rewards can be experienced quite differently by players: often as beneficial, sometimes as negative, but even as potentially harmful.

5.1.1 The Good: Positive Player Experiences and Facilitating Play. In many instances, engagement rewards were considered beneficial. They were associated with a variety of positive outcomes like enjoyment, accomplishments, and fun. They were seen as a motivation to play. This was also confirmed by the quantitative results that show that their completion was associated with motivation but that the regulatory style depended on *how* players engage with these rewards. Generally, we found that natural interaction with engagement rewards (*natural ER interaction*) was associated with more intrinsically motivated play and lower amotivation. And given that amotivation for play can be characterised as going through the motions of the game without intent [89], natural interaction with engagement rewards may be associated with a reduced tendency for players to engage with the game without purpose or intent. Intrinsic motivation for the game suggests that players are motivated to play for the sheer enjoyment of the experience, and not because they feel they should play, would get something from playing, or because they are compelled to play [91]. There are myriad wellbeing benefits that have been associated with intrinsic motivation [89, 90], which have also been explored in the context of gaming. Prior work showed that intrinsic motivation is associated with higher levels of need satisfaction from gaming than more external regulations [60], that players with higher intrinsic motivation for League of Legends experienced more enjoyment and less negative affect [17], and that higher intrinsic motivation to game yielded greater benefits to players suffering from serious physical health concern [24, 52].

Further, *natural ER interaction* was associated positively with harmonious passion for the game, which suggests an authentic passion that is in balance with the other activities in life. These findings are in line with recent research showing that harmonious passion for gaming is associated with a variety of positive outcomes including skill development, motivation to relax, improved post-play energy, and enhanced life-satisfaction, wellbeing, and mental health [51, 52, 66, 84, 95]. Although we do not extend our findings to player wellbeing, we do demonstrate that *natural ER interaction* is associated with higher intrinsic motivation for a game and harmonious passion for it, which in other gaming research has shown a variety of benefits.

Engagement rewards can encourage players to login to the game, which is naturally great from a developer perspective considering that retention and regular logins are desirable outcomes. Further, engagement rewards could also benefit players by nudging them to play a game. For instance, on a bad day when a player is in a noxious mood or overly stressed, they might benefit from relaxation through games [87] but not really feel able to initiate play. They might login to get the engagement rewards but then continue playing, thus gaining the many known benefits associated with play such as offering recovery from stress or boredom [13, 87], building self-esteem [6], and promoting mindfulness [22]. If the games are social in nature, then players might gain access to the additional social benefits that playing together has, such as satisfying relatedness [31], combating loneliness [30, 66], or providing offline social support [96]. In this way, the engagement rewards might lower the barrier to entry for play sessions that can be beneficial for players, similar to how setting out exercise clothes before going to sleep aims to facilitate exercising the next morning. In addition, engagement rewards were a way that *facilitated* play in general. They allowed players to circumvent restrictions that might have prevented them from accessing games, e.g., if they wanted to play without spending money. For those participants, these rewards provided a way to play the games at all—and by extension, receive the aforementioned myriad benefits that play provides.

Overall, our results suggest that engagement rewards were often associated with positive patterns of play (i.e., more intrinsically motivated and harmoniously passionate) when completed naturally, and had many reported benefits to players in facilitating play and providing a positive play experience.

5.1.2   The Bad: The Bad Experience of Missing Out. In contrast to the positive experiences, there were several accounts of negative experience descriptions, especially when missing out on rewards. The negative aspects of engagement rewards included players who reported feeling frustrated, annoyed, disappointed, or sad, or had fear of missing out. These findings highlight that engagement rewards can be detrimental in some cases. For example, a player might quit a game after missing out on a reward that they desperately wanted. Previous work has considered the role of loss aversion [54]—the human bias in which negative feelings associated with potential losses are larger than the positive feelings of prospectively winning equivalent gains—in games [5]. The authors showed that loss aversion is present in games, that it is more pronounced when the stakes are higher, and that a player's self-reported satisfaction reinforced the idea that potential losses loom larger than prospective gains [5]. In our case, participants' reports of wanting to avoid the loss of engagement rewards—particularly large or important ones—can be viewed through this lens; yet, most engagement rewards described by our participants were characterized as potential gains (i.e., new acquisitions) than losses (i.e., the removal of badges or items). However, the loss of opportunity described by our participants might invoke loss aversion if they feel that the engagement reward is already owned by them due to their intention to engage [46]. Relatedly, in the domain of social media, the *fear of missing out (FOMO)* was strongly linked to higher levels of social media engagement [83].

The findings on missing out are supported by the quantitative results that showed how *enticed ER interaction*—or accessing rewards *only* for the sake of the rewards themselves—was associated with higher amotivation. Amotivation includes engaging without purpose or intent, but also not engaging at all [89]. Although we cannot disentangle these different aspects of amotivation yet, it is possible that this externally regulated interaction with engagement rewards (*enticed ER interaction*) might negatively be associated with engagement in ways not anticipated by the game's developers, such as through churn.

An implication is to decrease the potential for those negative experiences by removing or decreasing the negative implications for missing out (see Section 5.2). We acknowledge that such changes could lead to potentially reduced regular logins and thus lie in contrast to many developers' goals of increasing regular logins. However, we argue that this trade-off might be worth it to increase long-term retention by avoiding churn arising through the negative side of engagement rewards, and certainly is important in light of the developers' responsibility to provide games that provide environments for healthy gaming behaviours.

5.1.3   The Ugly: The Perceived Obligation to Play. In addition to negative experiences of missing out, engagement rewards were also associated with more harmful negative experiences. Some participants described the rewards as *"a chore"* or *"like a job"*, highlighting negative connotations with tasks that they would rather not do. For them, it was problematic that they *had to* complete these tasks, e.g., to stay competitive or to avoid losing streaks, even if they would prefer not too. Further, while these "ugly" experiences were less frequently reported than those in the other categories, responses tended to be long and detailed. The care taken in describing these experiences suggests that while many good and bad experiences resulting from engagement rewards are frequent but mild, the negative experiences associated with *obligation to play* were comparably rare but quite intense in how they were experienced by players.

The qualitative findings were complemented by the quantitative results, in which *enticed ER interaction* was associated with higher external regulation and obsessive passion. External regulation

refers to completing activities to satisfy an external demand or reward contingency [27, 89], and is associated with a lack of autonomy present in obligated behaviours, whereas obsessive passion refers to a persistent and inflexible passion for a beloved activity—much like an uncontrollable urge to engage in the activity [99].

Gaming disorder has been defined as "a pattern of gaming (. . .) characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and activities, and continuation or escalation of gaming despite the occurrence of negative consequences" [104]. Although this characterization of gaming as a disorder is controversial, with many game scholars raising concerns (e.g., [1, 42, 55]), the definition is clearly in line with the characterisation of play that is externally regulated or obsessively passionate. Prior work has demonstrated that wellbeing is harmed when gaming is associated with addictive behaviour [41, 101] or a compulsion to play [84]. Further, research shows that obsessive passion for gaming is related to problematic use of videogames, motivation to procrastinate, increased post-play tension, the presence of sleep disorders, increased loneliness, and psychological distress [51, 52, 66, 84, 93, 95].

This pattern of perceived *obligation* to play—seen both in the qualitative and quantitative findings—is detrimental for a variety of reasons. First, the qualitative descriptions are reflective of involuntary and potentially unhealthy relationships with the rewards. It seems like completion of engagement rewards feels necessary for those players, which is in line with the quantitative results suggesting that *enticed ER interaction* was associated with externally regulated motivation and obsessive passion. Thus, these rewards might be associated with more detrimental motivation regulations [17] and passion orientations [51, 66, 84].

Second, this could be bad for the image of game companies. Players might perceive these rewards as intentionally ill-designed, manipulating, and aimed at generating *"addict-like behaviour"* (P16). Therefore, the implementation of such rewards could result in a worse image by reinforcing the idea that game developers are evil, greedy corporations that have only profit in mind. Earlier work has explored *Dark Patterns* [16, 39, 40], i.e., design patterns that aim to generate value without the user's best interest in mind [39]. Zagal et al. [105] suggested various design patterns in games that might be considered dark patterns, comprising concepts that are similar. For instance, they describe "playing by appointment" as a concept that uses time-constraints: "If a crop is not harvested within a certain time period after it is ready, it withers and loses its value" [105]. Such descriptions are applicable to engagement rewards, i.e., enforcing a time-restriction to entice players to engage. This conceptualization suggests that engagement rewards may similarly be perceived as intentionally designed without the user's best interest as a goal. As such, it is important that developers carefully consider the characteristics of engagement rewards to avoid such connotations.

Third, players who would like to reduce their playtime or stop playing games (e.g., because they overdo games) might have more trouble to do so, if they feel obligated to just quickly login to get a reward. As a result, these reward mechanics could be associated with potential harmful effects associated with problematic gaming, including a range of harms to our physical (e.g., sleep deprivation, day-night reversal, malnutrition/dehydration), psychological (e.g., depression, anxiety), and vocational (e.g., impaired work and academic performance) wellbeing [19, 38, 68, 72, 78]. This potential harm of engagement rewards is parallel to discussions around other game features like lootboxes or booster packs in collectible card games, which have been under scrutiny for similarities with gambling [32, 103, 106]. Future work would be beneficial to examine such topics more specifically.

While we cannot assess causation due to our study design (cf. Limitations), it seems likely that engagement rewards *do* facilitate positive experiences because participants also described engagements rewards in such a way. Thus, while we require more research on this topic, it seems

plausible that engagement rewards can be beneficial for those players who interact naturally with them, while they might not provide the same benefits—and might even be detrimental—for those players who are not intrinsically motivated to play but nudged to play the game just for sake of the rewards.

5.2 Implications for Design

Grounded in our findings, and particularly the four themes, we propose design recommendations for engagement rewards that build on their benefits while avoiding some of their pitfalls.

Decrease The Potential of Missing Out. Our results suggest that one major pitfall of engagement rewards is their potential for negative experiences when players miss out, especially on rare, restricted, or limited rewards, e.g., knowing that one cannot get the cosmetic they desperately wanted because they could not login due to a long work day. If games implement such rewards, experiences of missing out can be avoided by providing additional ways to acquire rewards at a later point. Potential ways to enable this include separate ways to acquire the rewards, such as with mastery tracks, or by revisiting events. For instance, Guild Wars 2 uses an event that makes older but now restricted content available again for free [44]. This not only decreases the potential of missing out but could also provide motivation for players who did not play the game at all during the first periods when rewards were available. Such a system was also explicitly suggested by P190: *"It's frustrating when I'm too busy in real life to 'grind' for limited time rewards! Every now and then I miss out on something that I'd really like to have and that seems unfair. It'd be nice if limited time events would repeat eventually (even if only once a year or so) to give players another chance at these items."* Of note, Guild Wars 2 also made the content available for people who logged into the game in specific periods, highlighting an additional challenge. In a way, reintroducing such rewards might then lead to the similar negative results (e.g., feelings of missing out again) if not introduced with the same caution. Other options to decrease the downsides of missing out include compensatory rewards for days when players did not acquire engagement rewards, using streak systems that *do not* reset on missing a day (*Guild Wars 2* already uses such a system), and letting rewards accumulate (e.g., having multiple slots for rewards that players can claim when they login).

In addition to providing these ways to acquire rewards, it is also important to communicate this to the players. Players need to know that they will be able to acquire such rewards another time to not have experiences of missing out. Then, the negative experience of missing out could be avoided.

Use Engagement Rewards As Optional Bonuses To Facilitate Positive Player Experience. While we warn of potential pitfalls, we do not argue completely against the use of engagement rewards. Generally, our findings about the positive effects of engagement rewards are evidence that it makes sense to use them in games. If players interact with them naturally, they can provide positive outcomes like enjoyment, accomplishments, and fun. Thus, it makes sense to implement them as bonuses that provide goodies that players can acquire when they would play anyways. They can provide a sense of accomplishment and incentives to try out different play styles that players might like. They may even enable intrinsic motivation to play and thus serve their purpose of increasing engagement and logins. For that purpose, it is important that they are considered optional and not obligatory. One major pitfall were experiences associated with the *"The Obligation to Play"* theme. Participants felt like these rewards were necessary for playing the game. This in itself may be detrimental for a healthy attitude towards these rewards and the games that use them. For that purpose, we argue that it is important to decrease the perceived obligation to complete them. First, this can be facilitated by decreasing the potential of missing out (see earlier recommendation), which means that players do not feel obligated to play to avoid missing out. Second, we argue that such rewards should not be coupled to gated gameplay, e.g., progression in the game and

live/energy systems. By decoupling rewards from these systems, players do not have to acquire the rewards for playing the game and therefore may consider them as beneficial and not obligatory. This way, the players' relationship and interaction with these rewards would be more natural and healthy.

Use Engagement Rewards to Facilitate Play for Free-to-Play Players. Many games restrict playtime (e.g., with life or energy system), collection (e.g., cards in collectible card games), or content (e.g., additional regions or characters). Such systems are important for the monetization of games, which often rely on some players who are willing to pay (cf. whales [34]) while other players play games as free-to-play. These players are also important to provide healthy game communities (e.g., a large enough player base). As a result, there are apparent incentives for developers to keep free-to-play players engaged.

One major benefit of engagement rewards was that they *enabled* play for free-to-play players. For them, these small goodies allowed them build their collections (e.g., acquiring single cards one at a time) or to play more without paying (e.g., by restoring lives). As a result, we suggest that games would benefit particularly from those engagement rewards that provide small benefits for free-to-play players, if developers elect not to decouple rewards from such gates in general (see earlier recommendation). Several participants had positive opinions about rewards that allowed them to acquire content that usually was only available as paid content, which was seen as positive because it made them feel like they can play the game on par with others.

5.2.1 The Clash Between Facilitating Engagement Naturally and Engaging to Play. We acknowledge that these design recommendations do counteract some developers' goals, e.g., the desire to provide limited rewards that should entice players to spend money, which is an important aspect of monetization. However, it is important to note that the negative effects on experience might be detrimental enough that providing these rewards at a later stage can be beneficial for developers in the long run when it keeps players motivated for a longer period, in contrast to situations when players feel crushed by missing out on a limited reward that they desperately wanted but had no more way of acquiring. Further, we argue that it is the responsibility of game developers to contribute to environments that enable healthy play behaviours, i.e., with decreased potential for problematic gaming but such that is in harmony with one's life.

5.3 Limitations & Future Work

Our analysis is grounded in the players' descriptions of their experiences with engagement rewards. This might not necessarily capture the design intentions of these features. We argue that these experiential accounts are important from a player experience and games user research perspective, as they capture how the actual experience might differ from design intentions. However, this also highlights two opportunities for further research: First, there is potential to investigate various types of engagement rewards and compare how they affect experiences, similar to earlier work that classified general videogame reward types [81, 82]. Our data also comprises a wide variety of different types of engagement rewards that should be investigated to understand if different types of engagement rewards are associated with different experiences. Second, it would be valuable to analyze rewards from the designer's perspective. While our data is not well suited for such analyses (e.g., only capturing a subset of the experience by considering the subjective experiences), this would allow a more comprehensive picture of how rewards are *designed and implemented* and ultimately *experienced* by players.

We used a guided recall approach that has been used successfully in earlier work about game experiences [11, 35, 53]. However, it is possible that the participants' descriptions do not fully cover how they experience engagement rewards *while* playing. We argue that our approach is

particularly suited for examining engagement rewards and how players experience them in their lives, e.g., thinking about the daily login they have to do while answering our survey. However, there is potential for future work that studies the players' experience with engagement rewards while playing.

The survey approach we used relies on self-reported data that can be subject to limitations like social desirability biases [62] and problems of accurately capturing play behaviours (cf. discussions about accuracy of self-reports for social media use [50]). Thus, this research could be complemented by other forms of data. In this context, it seems promising to investigate in-game interaction data, including how much players interact with and acquire engagement rewards and how this is related to their play behaviour and experience.

The survey's question about experience when missing out on rewards may have biased participants, potentially resulting in an overestimation of the severity. However, we developed this question to explicitly explore this experience. Future work could more neutrally explore experiences of missing out on engagement rewards.

Initial coding was conducted by a single coder, while reliability and validity was ensured by continuously discussing codes and themes with the other author. However, other researchers may interpret data somewhat differently.

As a cross-sectional survey, we cannot assess causation for quantitative data. For instance, our findings show that *natural ER interaction* had a positive association with intrinsic motivation. However, this data does not allow insights into causality, i.e., whether intrinsically motivated players interact more with engagement rewards naturally or whether natural interaction with engagement rewards leads to more intrinsic motivation. Future experimental work would be beneficial to investigate causality.

6 CONCLUSION

In this paper, we presented research about *engagement rewards*, i.e., time-based rewards that aim to entice players to play games, such as daily login bonuses, holiday events, and limited-time quests. We conducted a mixed-methods study, in which 178 participants provided qualitative and quantitative data about their experience with such rewards. Our findings suggest that there is variety in how players experience engagement rewards. For many players, these rewards were associated with positive experiences such as enjoyment, motivation, and a sense of achievement, and their natural completion was associated with intrinsic motivation and harmonious passion. In contrast, these rewards could also be detrimental by eliciting negative experiences when players miss out and could even be perceived as an obligation to play. Players' tendency to acquire rewards just for sake of the rewards was associated with more externally regulated motivation, more amotivation, and more obsessive passion for play. These findings shed light on how widely used reward mechanics are experienced by players. In addition, we contribute three design recommendations (*"Decrease The Potential of Missing Out"*, *"Use Engagement Rewards As Optional Bonuses To Facilitate Positive Player Experience"*, and *"Use Engagement Rewards to Facilitate Play for Free-to-Play Players"*), aiming to provide the beneficial effects of engagement rewards while tackling problematic design aspects that could lead to the negative effects. Our findings provide evidence that widely used reward mechanics may be perceived in ways that are unintended by game developers—potentially as detrimental or even exploitative—despite being developed with the best intentions. With this, we contribute to more positive reward mechanics that are beneficial, more enjoyable, and perhaps even healthier for players.

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