MS6400 Games Dissertation

HOW CAN DIFFERENT TYPES OF REWARDS IN ROLE-PLAYING GAMES CONTRIBUTE TO CREATING PLAYER'S IMMERSION?

by

Nina Alvir

University of East London

BA (Hons) Computer Games Design: Story Development

15th June 2020

ABSTRACT

This paper describes a conducted research on how different types of rewards can contribute to creating player's immersion, a meaningful connection between the player and the game, which is considered to be one of the biggest influences on creating a memorable player experience. The issue of defining game rewards, their taxonomy, purpose and use is explored through closely examining the similar topics in games literature and other recent research papers. The psychological approach towards games and their rewards systems is also discussed to find out what motivates players to engage and enjoy their in-game experiences. This research's methodology consisted of collecting quantitative data from the post-game questionnaire and qualitative data from the participants' vocal feedback recorded while they were playing a customised artefact where they received different types of rewards. The gathered data was analysed by two different criteria for measuring an element of immersion in video games, IJsselsteijn's et al. (2013) *The Game Experience Questionnaire* and Sweetser and Wyeth's (2005) *GameFlow* theory. From both qualitative and quantitative data's results, the research's thesis was positively supported. The thesis argued that the game rewards are far more comprehensive than what the current game literature defines and like all other game systems, their purpose must be thriving to achieve meaningful player experience. This thesis is heavily influenced by the works of Schell (2015) and Costikyan (2002) who define games as machines which create experiences created by the interplay of numerous game systems, therefore not a single game system could create the experience on its own. That is why the element of immersion is closely examined in this research; a deep and effortless involvement creates meaning, and rewards, besides being design tools to reinforce behaviours (Phillips *et al.,* 2015) or to motivate or stimulate disappointment (Wang & Sun's, 2011), are meant to become tools for creating immersive experience.

Table of Contents

INTRODUCTION

Whether players gathered coins for higher scores or defeated monsters for better swords, they were either intrinsically or extrinsically motivated to complete a task within a video game. Meaning they were either voluntary motivated for the intentions of self-enjoyment during that particular action (intrinsic motivation) or engaged the particular action just because it would lead to receiving a reward (extrinsic motivation). In one way or another, game designers have used reward systems as a core pillar within their games for many years. In many contemporary video games, rewards are being used as social tools for growing communities, or as flow tools for stimulating satisfying experiences, achievements, and other pleasures which many known psychological theories have tried to elaborate, so designers could apply them to their games and create the desired player experience. The goal of this research is to examine the current taxonomy and purposes of video game rewards, but also to look beyond that scope and consider rewards as narrative tools which engineer an environment for players' immersion, meaningful and effortless involvement in the game world. This research explores how designing a stage for such powerful attachment towards the game can create a positive and memorable player experience not only during the playthrough but also long after that. From this standpoint, it should be a vital goal of every game, especially of role-playing genres, to achieve such captivating design.

LITERATURE REVIEW

Defining Video Game Rewards

Although rewards are generally accepted as one of the most imperative aspects of video games, video game scholars are still struggling to find their universal definition. Many recent studies of video game rewards discuss a divisive problem of defining their ambiguous taxonomy. This research needs to comprehend how video game rewards are defined and categorized to fully comprehend how they are affecting players.

Wang and Sun's (2011) research describes rewards as mechanisms which act on players' either intrinsic or extrinsic motivations as stimulators or as compensation for disappointment. According to their thesis, there are at least four reward characteristics (social value, the effect on gameplay, suitability for collection and review, and time requirement) which can explain how rewards influence on different types of players. Furthermore, these characteristics also describe how players utilize rewards in four different ways; to advance in-game progress, to review and thus feel a sense of accomplishment, to reflect on their achievements within their communities, and to gain a chance of cooperation or competition within the limits of their game. Since the utilization of rewards heavily depends on types of rewards and genres of games, the authors proposed eight forms of rewards in video games – score systems, experience points, item granting systems, collective resources, achievement systems, feedback messages, plot animations and pictures, and unlocking mechanisms. Even though this research is perhaps one of the most recent and elaborate attempts to comprehend the complexity and intention of video game rewards, the authors did not expand nor redefine the actual categorisation of four main types of rewards (access, facility, sustenance, and glory), originally purposed by Neil and Jana Hallford within their book *Sword and Circuitry: A Designer's Guide to Computer Role-playing Games* (2001).

While the Hallford's reward taxonomy is focused within the role-playing genre, Salen & Zimmerman (2004) state that it is widely accepted and adopted within other genres of video games. Phillips *et al.* (2015) argued that Hallford's taxonomy lacked a formal definition and thus to avoid future ambiguity they defined video game rewards as positive returns that serve to reinforce the players' behaviour. With that definition in mind and through a focus group which consisted of videogame experts, they managed to refine the former four Hallford and Hallford's categories of rewards and establish two more – rewards of praise and rewards of sensory feedback. Through a revision of 915 reward instances, the researchers concluded their taxonomy was applicable and dependable for future analysis of different types of video game rewards and their effects on player experience. With their redefined taxonomy of video game rewards, the authors improved the overall understanding of

rewards' function within the game design, therefore highlighted how the impact of different types of rewards on players can produce the desired player experience. Understanding that there are various types of rewards which are each used to provoke a different emotion, will help establish a clear taxonomy for this research and assist in choosing which reward types will most accurately argue key points of this thesis since not all types of rewards will be able to be implemented in the initial testing.

Psychological Approach Towards Games

Wang and Sun (2011) state that to define rewards and measure their influence on player experience, researchers had to consider how players approach games, and the rewards that are available to them. There are many psychological theories about what drives people to play games, such as Bartle's (1990) classification of four-player types (explorers, achievers, socializers and killers), which derives from a player's behaviour within the game. Another example is Ryan's *el at.* (2006) self-determination theory which explains that people are attracted to games because they offer a sense of autonomy (having conscious volition), sense of competence (being challenged and receive feedback on actions), and sense of relatedness (emotionally connecting with others). These are all very valuable theories which help game designers understand what players require from their games. However, one theory which perhaps demonstrates a player-game relationship in the most elaborate way is the Mechanics, Dynamics, and Aesthetics (MDA) framework (Hunicke et al., 2004). It distinguishes three main components of games, which players perceive during the playthrough (rules, systems, experience) and draws their parallels which designers create during the design process (mechanics, dynamics, aesthetics). According to Hunicke, LeBlanc and Zubek, aesthetics (evoked player emotions when interacting with the game systems) in video games come in at least eight forms; sensation, fantasy, narrative, challenge, fellowship, discovery, expression, and submission. With their taxonomy of "aesthetic goals" which each video game possesses in some number, the authors thoughtfully pointed out how the players recognise games and thus enjoy their gameplay, which delivered a greater understanding of how game design is meant to influence the player experience.

When it comes to rewards in general, there is always a distinction between two main types of motivation – intrinsic and extrinsic. The difference between these two types varies depending on how a person discerns and obtains a reward (Cameron & Pierce, 1994). Although all rewards may be considered extrinsic (acting just for the sake of the reward), in video games specifically, many rewards are intrinsic because they offer a certain satisfaction during the process of obtaining the reward, which may be more valuable to the players than the reward itself (Ryan et al., 2006). In a wider perspective, if players are willingly playing a game to experience its gameplay for their

entertainment, it can be said that intrinsic motivation is the reason people play games (Ryan et al., 2006). Looking at games as intrinsically motivating experience and having a greater understanding of how players perceive different genres of games are very important aspects of this research because the dependent variable (players' immersion) is closely connected to the players' ability to intrinsically experience the gameplay.

Purpose of Rewards in Video Games

Even though there are many different psychological and design-related factors which define video game rewards and their taxonomy, the fundamental function of rewards in video games is far easier to interpret. It is closely related to the overall goal of a video game itself, which Salen and Zimmerman (2004) labelled as meaningful play. They describe the meaningful play as on occurrence when outcomes of a player's actions are discernible (distinctly noticeable by the player) and integrated (they change the gameplay in some way, either in a short or long term). Rewards in games are one of the main ways designers communicate with the players, guide them through the gameplay, and create a growing cognitive and emotional relationships between the players and the game. Consequently, rewards are used to achieve pleasure and enjoyment in games, or according to Mihaly Csikszentmihalyi, an optimal experience. According to Csikszentmihalyi (1990), enjoyment happens when a person has overstepped the boundaries of prior expectations, gone beyond the actions which were unconsciously predetermined and accomplished something unexpected. To be able to feel enjoyment, there are seven characteristics which need to be satisfied: tasks with a reasonable chance of competition, clear goals, immediate feedback, deep but effortless involvement, sense of control over actions, no concern for the self, and alteration of the concept of time. Wang & Sun (2011) state that rewards alone, if they are designed thoughtfully, can actualize some of these enjoyment characteristics, such as clear goals, immediate feedback, and tasks with a reasonable chance of completion since rewards offer tools for finding a balance between the skills needed and obstacles presented to the players in the game world.

Moreover, when rewards in video games are intertwined with a player's agency within the limits of the game's narrative, no matter how illusory it may be (Stang, 2019), it can heavily influence on other enjoyment characteristics, such as a sense of control over the action, but more specifically, deep but effortless involvement. Since video games can be considered as a form of symbiosis between the developers and players, or as Costikyan (2002) states, "*a collaboration between the developers and the players, a journey of mutual discovery, a democratic art form in which the shape of the game is created by the artist, but the experience of the game is created by the player*", player's immersion is a fundamental goal of every game design. The connection between reward's purpose and meaningful play is a fundamental relationship which is being explored in this research.

Each discussed source explains a key factor of this research. Foremost, the established definition and taxonomy of video game rewards offer a greater insight into how designers are using different types of rewards in their games to provoke a diverse player experience. Subsequently, the psychological approach towards games clarifies how players perceive games, thereby highlight how players utilize rewards for their benefit. Lastly, defining reward's purpose and integrating it into an overall goal of the majority of games, helps understand how rewards can contribute to creating the optimal experience, which is an integral element of this research's thesis.

METHODOLOGY

This research explores how different types of rewards can be used as design tools which contribute to generating players' immersion in the game's story and thus create a memorable and rewarding experience. More specifically, this research's thesis is examined in the role-playing genre because it is known to be structured to invoke numerous and various player experiences (Hunicke et al., 2004), which means that multiple types of rewards can be offered to the participants. To respect the scope of this research, the types of rewards which are particularly chosen to provoke players' immersion are rewards of facility and rewards of access. These types of rewards are both characterized by giving players the information about the state of their in-game journey, which is closely related to game's storyline, from both narrative and mechanical perspective because game mechanics also teach the players what is possible in the game world, therefore tell a story within the actions available. Additionally, the reward of sustenance is present in the artefact, mostly for balancing the level of difficulty, but its effect was also measured through the post-questionnaire questions.

The overall methodological approach for this research was a mixture of qualitative and quantitative data. The reason for this is that it is hard to measure player experience in forms of numbers, so to validate the collected data, the player experience was measured with both techniques. The underlining step was looking for participants who already played some type of role-playing games because the experienced participants should have an easier time playing the artefact, spot different types of rewards, and more likely understand the typical structure of role-playing games.

The next step was gathering information about the participants' preferred playstyle. Although there are various psychological theories which differently define types of video game players, the one most beneficial for this research was Bartle's (1990) category of four-player types – killers, achievers, explorers and socializers. Even though it derives from multiplayer online games, the classification is based on players' preferred behaviour within the game, so it can be applied to other genres, such as single-player games. The theory was convenient for this research because it is based on a character theory which defines players' in-game preferences but also helps clarify which elements of game design are premeditated to appeal to a particular audience. Since this research's thesis applies to all types of players, therefore claims that all players can, if not equally, then certainly to the similar extent, be immersed into the game's narrative. For this reason, the gathered data about player types were used to remove the assumption that only players who are more inclined to enjoy game's storyline through exploration or socialisation rather than action or achievement (or the other way around), will experience immersion.

The main test of this research was presented in a form of a customised artefact in which statistical data, such as duration of each playthrough and qualitative data, such as participants' gameplay experience, which was prompted through thinking out loud method, was recorded. The participants were offered to use two different combat behaviours (alongside the standard movement mechanics) to see if the player agency has an impact on creating the player's immersion. The approximate time needed to complete the artefact from the start to the end was constructed by the participant number zero whose aim was to finish the game without being immersed in the story, therefore, only to test the difficulty of the puzzles. Afterwards, each participant's duration of play was compared to participant zero's time. This comparison was used to support the assumption that more immersed players will usually play the game longer. As previously mentioned, qualitative data in the form of participants' vocal feedback during the playthrough was aligned with the quantitative data collected from the post-questionnaire to prove the validity of this research.

In the last step, participants were asked to fill out a customised online questionnaire regarding their game experience during the artefact's playthrough. The answers were collected through a quantitative method which was adapted from IJsselsteijn's et al. (2013) *The Game Experience Questionnaire*. The authors' research was used as a fundamental measurement of player experience of the artefact since it assesses game experience on seven components, such as immersion and flow, which are both core elements of this research. To advocate the validity of gathered data, the questionnaire results were also compared to Sweetser and Wyeth's (2005) *GameFlow* criteria for measuring player enjoyment in games, more specifically, to the criteria for the element of immersion. The results of this data were an essential part of concluding whether different types of rewards in the artefact contributed to creating player's immersion or not.

Pre-test: Online Questionnaire (The Bartle Test of Gamer Psychology)

As mentioned before, the questionnaire was created according to Bartle's (1990) taxonomy of four-player types based on the player's preferred behaviour within the game. The four characters are killers (players who play with a competitive attitude and love challenges), achievers (players who prefer collecting various cosmetic in-game items or gain higher social titles for the benefit of glory), explorers (players who love exploring the game world and feel like they are a part of the story), and socializers (players who rather enjoy the social aspects of games, such as interacting with other players). The questionnaire was self-administered which made it easier to distribute, and it was adapted entirely for the participants' needs since they can fulfil it at their own pace, without feeling the pressure from any outside source (Bryman, 2015). The disadvantages of the self-administrated questionnaire (no clarification of the questions, a risk of missing data and risk of lower response rate), were all answered with the student researcher's presence during the time the questionnaire

was being fulfilled by each participant. The pre-test online questionnaire was available for the participants through an online link.

Main Test: Customized Digital Artefact

For the main test, the participants played a customized artefact which consisted of only one level. Before the participants' gameplay was recorded with the Open Broadcast Software while they were sharing their screens through the Discord call, they were given a short introduction document about the artefact. The document possessed the information about the main goal, controls and functionality of some gameplay features, such as switches and movable boxes, and informed the participants that there was no time limit to complete the artefact and that the student researcher could only reply to the technical issues they may encounter, therefore the participants had to find solutions to the puzzles on their own.

During the playthrough, the participants experienced a short story set in the fantasy world which they explored in a 2D environment. The cutscenes were displayed similarly like in the comics, through the set of images displaying on the screen with short descriptions relating to each matching image. There were five different areas in total, through which participants had to navigate to reach the end.

By completing simple obstacles (small object-manipulation and/or reaction and timing puzzles, and two different types of combat encounters), the participants received rewards and progressed further through the story. They received a reward of the facility, which came in a form of new ability power and new equipment. With their newly acquired special abilities and equipment, the participants were able to use new combat abilities. Another type of reward that was available in the artefact was a reward of access, in a form of unlocking mechanisms and cutscenes. For example, the participants needed to find a switch to open locked doors to unlock new areas. Lastly, the reward of sustenance was present in the form of health pick up to increase the chance of participants' survivability and to reduce the chance of frustration and disappointment by dying.

The purpose of this artefact was to slowly introduce the game's narrative and at the same time offer of two different types of rewards, which should have interested players to a point where to they felt immersed and invested in the game's story. At the start of each playtesting session, participants were asked to think out loud as they were playing the artefact. During this time, participants vocal feedback and actual gameplay progress was recorded.

Post-test: Customized Online Questionnaire

Since it is very hard to analyse and statistically compare exactly how much are players feeling immersed into a game, quantitative data was gathered through a customized questionnaire heavily influenced by IJsselsteijn's et al. (2013) *The Game Experience Questionnaire* which uses an emotional scale from 0-4 (zero meaning did not feel at all, and four meaning feeling extremely) and evaluates game experience (during and after finishing playing) as scores on seven parts: immersion, flow, competence, positive and negative affect, tension, and challenges.

The questionnaire was split into two sections. In the first, the participants were noting down their number which they received from the student researcher (the number was used to track the total number of participants undertaking this research). They were also declaring whether they ever played any kind of single-player, role-playing game or not, and they were confirming their player type results from the pre-test questionnaire.

The second section consisted of a set of two questions. The first question was formed through a linear graph in which the participants were declaring how they felt about the artefact on the emotional scale taken from IJsselsteijn's et al. (2013) *The Game Experience Questionnaire*. This set of questions consisted of four components and fifteen items. The focused components were sensory and imaginative immersion, flow, positive affect and negative affect. The items were listed in the particular order:

1) I felt content.
2) I was interested in the game's story.
3) I was fully occupied with the game.
4) I felt good.
5) It was aesthetically pleasing.
6) I forgot everything around me.
7) I felt imaginative.
8) I felt bored.
9) I felt that I could explore things.
10) I lost track of time.
11) I found it impressive.
12) I found it tiresome.
13) I was deeply concentrated in the game.
14) It felt like a rich experience.
15) I lost connection with the outside world.

The items for each component were the following: sensory and imaginative immersion (items 2, 5, 7, 9, 11, 14), flow (items 3, 6, 10, 13, 15), positive affect (items 1 and 4), and negative affect (item 8 and 12). All component scores were computed as the average value of their items.

The second question in the second section of the post-questionnaire was asking participants to try to determine which rewards influenced their experience the most. Their predetermined choices were the following:

1) Finding solutions to the puzzles

2) Unlocking new areas

3) Learning about the story (through cutscenes/images)

4) Unlocking new abilities (sword attack and magic ability)

5) Maintaining positive health (collecting pickup for restoring missing health)

6) The mixture of all or some actions mentioned from the above

This question was asked to gather data about how different rewards, either on their own or all together, influenced participants' experience.

As said before, IJsselsteijn's et al. (2013) *The Game Experience Questionnaire* measures game experience on seven components. The components which were removed from this questionnaire were competence, tension/annoyance and challenge. These aspects of the game experience were out of the scope of this research and were not required to make necessary conclusions about the focus of this research. Positive and negative affect components were kept (but reduced in items) to allow players to judge the quality of the artefact and have variables which can represent it, so later on it could be seen whether the quality of the artefact structure influenced on the players' experience or not.

The questionnaire was also influenced by Sweetser and Wyeth's (2005) *GameFlow* criteria for measuring player enjoyment in games. Their model adapts Csikszentmihalyi's (1990) flow theory to the context of games and presents criteria for each element of enjoyment (concentration, challenge, player skills, control, clear goals, feedback, immersion, and social interaction). To further validate the collected data, components of sensory and imaginative immersion and flow (with their corresponding items) were implemented in the *GameFlow* criteria to determine if the participants' experience matched the criteria for immersion.

The results of this questionnaire were compared to the qualitative data gathered through thinking out loud method which provided a deeper insight into players' experience during the artefact's playthrough.

THE END OF PREVIEW (38 PAGES MORE)

FULL DOCUMENT AVAILABLE UPON REQUEST

BIBLIOGRAPHY

Bartle, R. (1996) 'Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs', in *Journal of MUD Research*. Available at: http://mud.co.uk/richard/hcds.htm#1 (Accessed: 5th February 2018)

Bryman, A. (2016) 'Ethics and Politics in Social Research', in *Social Research Methods*. Oxford: University Press, pp. 121-146.

Cameron, J. & Pierce W.D. (1994) 'Reinforcement, Reward, and Intrinsic Motivation: A Meta-analysis' in *Review of Educational Research*, pp. 363-423. Available at: https://pdfs.semanticscholar.org/7e72/2db75db274f10fca81b1bbb2bd9ef468a984.pdf?_ga=2.89353051.1323424500.1591694397-1844482988.1591694397 (Accessed: 15th November 2019)

Costikyan, G. (2002) 'I Have No Words, and I Must Design: Toward a Critical Vocabulary for Games', in *Computer Games and Digital Cultures Conference Proceedings.* Available at: http://www.digra.org/wp-content/uploads/digital-library/05164.51146.pdf (Accessed: 8th October 2017)

Csikszentmihalyi, M. (1990) Flow: The Psychology of Optimal Experience. New York: Harper & Row. Available at: https://www.researchgate.net/publication/224927532_Flow_The_Psychology_of_Optimal_Experience (Accessed: 5th February 2018)

Hallford, N. & Hallford, J. (2001) Swords and Circuitry: A Designer's Guide to Computer Role-playing Games. Premier Press.

Hunicke, R., LeBlanc, M. & Zubek, R. (2004) 'MDA: A Formal Approach to Game Design and Game Research', in *Game Developers Conference*, 2004. Available at: https://users.cs.northwestern.edu/~hunicke/MDA.pdf (Accessed: 5th February 2018)

IJsselsteijn, W.A., De Kort, Y.A.W. & Poels, K. (2013) The Game Experience Questionnaire. Eindhoven: Technische Universiteit Eindhoven. Available at: https://pure.tue.nl/ws/files/21666907/Game_Experience_Questionnaire_English.pdf (Accessed: 8th November 2019)

Matthewbarr.co.uk. (2020) Take the Bartle Test. [Online] Available at: https://matthewbarr.co.uk/bartle/ (Accessed at: 15th November 2019)

Phillips, C., Johnson, D., Wyeth, P., Hides, L. & Klarkowski, M. (2015) 'Redefining Videogame Reward Types', in *Proceedings of the Annual Meeting of the Australian Special Interest Group for Computer Human Interaction* (pp. 83-91). Available at: https://www.researchgate.net/publication/301450500_Redefining_Videogame_Reward_Types (Accessed: 15th November 2019)

Ryan, R.M., Rigby, C.S. & Przybylski, A. (2006) 'The Motivational Pull of Video Games: A Self-determination Theory Approach', in *Motivation and Emotion*, pp. 344-360. Available at: https://selfdeterminationtheory.org/SDT/documents/2006_RyanRigbyPrzybylski_MandE.pdf (Accessed: 9th November 2019)

Salen, K. & Zimmerman, E. (2004) 'Meaningful Play', in *Rules of Play: Game Design Fundamentals*. Cambridge: MIT Press, pp. 31-37.

Schnell, J. (2015) 'Chapter Seventeen: One Kind of Experience Is the Story', in *The Art of Game Design: A Book of Lenses*. Boca Raton: CRC Press, pp.296-300.

Stang, S. (2019) '"This Action Will Have Consequences": Interactivity and Player Agency', in *Game Studies*, 19(1). Available at: http://gamestudies.org/1901/articles/stang (Accessed: 8th November 2019)

Sweetser, P. & Wyeth, P. (2005) 'GameFlow: A Model for Evaluating Player Enjoyment in Games', in *Computers in Entertainment,* 3(3). Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.97.480&rep=rep1&type=pdf (5th February 2018)

Wang, H. & Sun, C.T. (2011) 'Game Reward Systems: Gaming Experiences and Social Meanings', in *DiGRA Conference*. Available at: http://www.digra.org/wp-content/uploads/digital-library/11310.20247.pdf (Accessed: 8th November 2019)