

# The Player Engagement Process – An Exploration of Continuation Desire in Digital Games

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## **ABSTRACT**

Engagement is an essential element of the player experience, and the concept is described in various ways in the literature. To gain a more detailed comprehension of this multifaceted concept, and in order to better understand what aspects can be used to evaluate engaging game play and to design engaging user experiences, this study investigates one dimension of player engagement by empirically identifying the components associated with the desire to continue playing. Based on a description of the characteristics of player engagement, a series of surveys were developed to discover the components, categories and triggers involved in this process. By applying grounded theory to the analysis of the responses, a process-oriented player engagement framework was developed and four main components consisting of objectives, activities, accomplishments and affects as well as the corresponding categories of engagement, disengagement and their triggers – were identified and rank-ordered.

## **Keywords**

Player engagement, continuation desire, player experience, motivation, play studies

## **INTRODUCTION**

Successful computer games have remarkable capability to draw people in (Jennett et al. 2008), they glue people to the game (Rigby and Ryan 2011) and they make people want to keep playing (Brown and Cairns 2004). By their very nature, good games need to be engaging, so game designers use this knowledge to create great game experiences. It is not enough to motivate a player to begin playing – if the engagement is not sustained, the player will not keep playing. The main objective of this study is to explore the aspect of continuation desire as experienced from players' perspectives in order to acquire further understanding of the multifaceted concept of player engagement in digital games. The focus is thus to investigate empirically what it is that triggers player engagement and makes players want to continue playing, what they do while they have the desire to continue and which emotions, affect and experiences the desire to continue generate among players.

The fundamental triggers in games that cause players to experience engagement (and disengagement) while playing were identified by conducting a qualitative survey (n=41). Through grounded theory the responses were analysed and used to develop a process-oriented player engagement framework consisting of objectives, activities,

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accomplishments and affect. The findings suggest that the affective elements of player engagement that are generally used to explain engagement are a result of the continuation desire aspect. In order to exemplify one application of the findings, the categories of the components were finally rank-ordered (n=131).

The findings are furthermore intended to be used to categorise player engagement, determine the engaging elements of a game or an interactive application, examine player experiences and analyse game characteristics based on the components, categories and triggers of player engagement.

## **RELATED WORK**

The experience of playing digital games has been studied in great detail both theoretically and empirically, and is described as a multidimensional and multilayered construct (Poels et al. 2007). Player engagement is one dimension of the experience of playing games and can be related to a multitude of concepts such as Flow (Csikszentmihalyi 1991; Chen 2007), Gameflow (Sweetser and Wyeth 2005), Presence (Lombard and Ditton 1997; Tamborini and Skalski 2006), Immersion (McMahan 2003; Brown and Cairns 2004; Ermi and Mäyrä 2005; Jennett et al. 2008), Pleasure (e.g. Costello and Edmonds 2009), Motivation (Yee 2006; Przybylski et al. 2010; Rigby and Ryan 2011), Enjoyment (Klimmt 2003; IJsselsteijn et al. 2008a) and Fun (e.g. Koster 2004).

Due to the many and various explications of these concepts, there is also a difference in terms of how engagement is understood and used when investigating player experiences. Lombard and Ditton (1997) include engagement as one aspect of the “psychological immersion” component of “presence as immersion”, which occurs when users encounter and become “involved, absorbed, engaged and engrossed” in mediated experiences (p.5). McMahan (2003) offers another explanation by stating, “To be so engaged with a game that a player reaches a level of near-obsessiveness is sometimes referred to as deep play” (p. 69). According to McMahan, this state of mind can become a way of assessing engagement so that “the term deep play [in video games] is a measure of a player’s level of engagement” (ibid).

In order to better understand how players engage with videogames, Jennett et al. (2008) focus on the concept of immersion by investigating their subjective experiences. According to their research, immersion is primarily a result of a good gaming experience and is thus critical to game enjoyment. While being immersed, *almost* all attention is focused on the game, because the players can still be “immersed in the game to some extent but they are not immersed to the exclusion of all else and therefore not in flow”. (p. 642). Furthermore, “immersion is evidently a precursor for flow because that sense of being so involved that nothing else matters is practically a colloquial definition of immersion” (p. 642). It is moreover described as an experience in one moment in time, and based on earlier grounded theory findings by Brown and Cairns (2004) immersion can be graded through three levels of involvement, namely engagement, engrossment and total immersion.

In the Brown and Cairns study (2004), engagement is defined as the lowest level of involvement which must be experienced before the player can become engrossed or totally immersed. A player should invest time, effort and attention while playing and must be interested in the game by overcoming barriers of player preference and learning of the controls in order to become engaged: “An engaged gamer is interested in the game and wants to keep playing” (p.1299). When the game directly affects the player’s

emotions, he or she can furthermore become engrossed, as there should be “[...] a high level of emotional investment in the game. This investment makes people want to keep playing [...]” (Ibid.).

Ermi and Mäyrä (2005) also investigate immersion and describe three dimensions in their gameplay experience model: sensory, challenge-based and imaginative immersion (SCI). Imaginative immersion occurs when players become absorbed with the world and stories, or begin to empathise or identify with game characters. Sensory immersion is associated with the audiovisual elements of games and challenge-based immersion is concerned with the balance of challenges and abilities.

Engagement has also been associated with enjoyment. Klimmt (2003) investigates why players begin, sustain and repeat playing and addresses the question of why playing digital games is so enjoyable by proposing a conceptual model. The model consists of three key dimensions of game enjoyment: 1) the experience of ‘effectance’ or the immediacy of feedback to the player, 2) repeated cycles of suspense and relief, curiosity and an increase in self-esteem and 3) the fascination of becoming part of an alternative reality and playing a new role in simulations of spatial environments and/or interesting narratives. According to Klimmt, “enjoyment is the reason for players to begin, sustain, and repeat exposure to digital games” (p 247).

Another elemental property of games which is also related to engagement is the possibility of playing and Brown and Vaughan (2009) propose that a central element of the concept of play is the desire to continue: “Play provides a continuation desire. We desire to keep doing it, and the pleasure of the experience drives that desire. We find ways to keep doing it. If something threatens to stop the fun, we improvise new rules or conditions so that the play doesn’t have to end. And when it is over, we want to do it again” (p. 18).

Several studies have investigated the overall player experience. Poels et al. (2007) explored the feelings and experiences people have when they play digital games by focusing on what occasions gamers typically start gaming, what they experience or feel while gaming and what they experience after gaming. Based on these findings and theoretical analyses of player experiences, Ijsselstein et al. (2008b) developed the Game Experience Questionnaire (GEQ), designed to quantify player experience through dimensions of immersion, flow, competence, positive and negative affect, tension, challenge and social presence. Van den Hoogen et al. (2008) used the in-game version of the GEQ questionnaire (iGEQ) to acquire data about players’ experiences during gameplay by exploring the dimensions of positive affect, boredom, frustration, flow, challenge, immersion and competence.

Other studies focus specifically on quantifying a player’s engagement. For example, Mayes and Cotton (2001) propose a construct, labelled “engagement”, that determines the quality of a video game experience. The concept is conceived based on the “outcome that is desired most by game developers: an enjoyable game” (ibid. p 692). The authors define engagement as “how fun, involving, and motivating a task is” (ibid.) and introduce an “Engagement Questionnaire” (EQ) intended to investigate five dimensions of engagement (interest, authenticity, curiosity, involvement and fidelity) which are thought to influence a player’s level of engagement while playing a digital game. Brockmyer et al. (2009) furthermore propose the Game Engagement Questionnaire (GEQ), developed to quantify the subjective experience of deep engagement, which, according to the

authors, is a combination of immersion, presence, flow, and absorption and that “the term ‘engagement’ will be used as a generic indicator of game involvement” (Ibid., p.624).

Finally, a number of studies are concerned with the overall motivational aspects of games. Przybylski et al. (2010) and Rigby and Ryan (2011) explain that the underlying reasons as to why people play, and how digital games can motivate sustained engagement, are due to their ability to satisfy fundamental psychological needs for competence, autonomy (freedom of choice based on personal interests) and relatedness (interaction with others).

The diversity of explanations regarding related concepts, the variety of definitions and the different empirical investigations associated with player experience and engagement illustrate the complex nature of the concept of engagement. In order to narrow the focus, the following section will present an explication of player engagement, which will be used as a foundation for exploring continuation desire and the process of becoming engaged while playing.

### **CHARACTERISTICS OF PLAYER ENGAGEMENT**

First of all, in order to distinguish between motivation and player engagement, it should be noted that the concept of motivation in this study is related to the reasons why people *begin to play* and why players are “lured into” a game and start playing. The concept of player engagement is concerned with aspects related to the playing situation and focuses on what makes people want to *continue playing* and what it is that “hooks” players so much that they want to keep playing. A player could, for instance, be motivated to begin playing due to boredom, but it is not until the player becomes excited and wants to continue playing that engagement is experienced.

In the current study, player engagement is understood as the level of continuation desire experienced in-game, during play or over a longer period of time, when players dedicate themselves to coming back and playing a game again and again. Player engagement is initiated by a player’s individual motivation to begin playing and is driven by continuation desire, which can result in perseverance, determination and tenacity. Player engagement is furthermore related to a range of emotions (enjoyment, fun, satisfaction, etc.) and experiences (e.g. the feeling being immersed, present or in flow) which may or may not be part of a player’s experience of engagement, depending on both the player and the type of game played.

These characteristics will be used as a foundation to develop surveys intended to identify the triggers and components of player engagement in the following investigation.

### **METHOD**

In order to conduct a detailed exploration of the continuation desire aspect of player engagement in digital games, information about this aspect was gathered. The investigation consisted of one main and two extra data collection surveys, all concerned with general gaming experiences, in order to discover as many different triggers of player engagement and disengagement as possible. Furthermore, open-ended questions were administered to avoid biasing respondents with predefined answers and categories based on theoretical investigations.

The main survey was used to develop the player engagement process framework. Media technology university students, who were interested in game design and had varying

levels of game playing experience, were recruited and instructed via email to answer questions in an online survey application. The questionnaire was based on the explication of player engagement and consisted of questions concerned with demographic issues, gaming habits and the following questions: “What in a game motivates you to play?” “What in a game makes you want to continue playing?” and “What in a game makes you want to come back to play?” In order to identify the triggers of disengagement, the question “What in a game does not make you want to continue playing?” was added. Finally, satisfaction was chosen as an example of emotional releases in the question “What in a game gives you satisfaction?”

### **Participants**

In total, 33 males (80%) and 8 females (20%) responded to the first survey (n=41). The average age was 23.5 years (range: 21-41 years). The respondents from this survey reported that the average time played per week was 9 hours, they played an average of two different games per week and 51% considered themselves gamers. A total of 7% were not playing games at the time of the survey. The answers indicated that the desire to continue playing occurred on a regular basis, exemplified by 95% of the respondents “wanting to keep playing” a “few times” (32%) or “many times” (63%). In addition, it was evidenced that playing can be a satisfying experience, as all respondents had experienced satisfaction either “a few times” (32%) or “many times” (68%) while playing.

### **Results and Analysis**

The responses from the first data collection resulted in 205 answers related to the five questions based on the characteristics of player engagement. The answers were cleaned up initially by rejecting useless answers, for example empty or incomprehensible responses, or too broad answers like “I keep playing because of the gameplay”. The answers were then separated into 312 statements. Grounded theory was used, as described in (Charmaz 2006), in order to identify the components and categories of player engagement, so the statements were organised and initially coded to extract the triggers of player engagement. The identified triggers were then checked further for reoccurring instances through focused coding, and finally grouped into 95 initial categories. The initial categories were then evaluated for similarities and grouped into 33 tentative categories with corresponding properties. These 33 categories were then reduced further to 18 conceptual categories in yet another iteration. For example, the statement “Being able to battle others” described a source of engagement that fitted into the conceptual category termed “Socializing”, since this category covered the activity of playing with others which could be triggered by competition, communities, communication, camaraderie, performing and cooperation.

The conceptual categories were finally structured into four main components – Objectives, Activities, Accomplishments and Affects. Each of the components consequently consists of the conceptual categories, all of which support continuation desire and player engagement: Objectives – intrinsic or extrinsic; Activities – interfacing, socializing, solving, sensing, experiencing the story and characters, exploring, experimenting, creating and destroying; Accomplishment – achievement, completion and progression; and finally Affect – positive, negative and absorption.



## THE CATEGORIES OF PLAYER ENGAGEMENT

In order to corroborate the components of the framework, as well as to identify any categories additional to those identified in the first survey, two extra data collection surveys were conducted. The second survey was concerned with another group of media technology and game design students (n=42), and in the third survey different types of respondent were recruited from various online game forums (gamespot.com, gamesforum.com and neoseeker.com; n=48). These extra surveys used two questions from the first investigation: “What in a game makes you want to continue playing?” and “What in a game does not make you want to continue playing?” They were conducted online, and basic demographic data about respondents were gathered as well. However, these data were not used in this study, as it is the intention to carry out a quantitative investigation of different target groups and games based on the identified components and categories of player engagement in future research. Focused coding was used to analyse the responses and no further components or categories were identified in the additional two surveys.

In the following, the characteristics of the four components and the corresponding categories of player engagement will be described. Examples of triggers which initiate player engagement in each category, as well as triggers of disengagement, will also be presented. All the identified triggers were derived from the answers from all three surveys, and sample representative answer statements are included to exemplify the findings. It should be noted, that the responses indicate that players can be engaged by different categories at the same time.

### Objectives

The objectives component is concerned with what a player wants and the game-related triggers that motivate the player to continue playing. The responses include several examples indicating that players are engaged through two distinct categories of objectives.

*Extrinsic* objectives are extrinsically motivated goals set up by the game, e.g. challenges, quests, collecting a certain amount of items or something that has to be overcome within a limited time scale.

*Intrinsic* objectives are intrinsically motivated, self-defined goals made up by the player, for example when a game includes elements which enable players to define their own objectives. One respondent explains that one way of gaining satisfaction when playing is “reaching a self-made goal, e.g. expanding a city to a certain size in SimCity”.

Each individual game sets up a variety of extrinsic objectives, and all players make up a multitude of intrinsic objectives. This diversity of objectives is illustrated when respondents state: “I want to...” followed by examples of various triggers: “... overcome a challenge”, “... beat someone”, “... hit something”, “... avoid everything”, “... finish building something”, etc.

The intrinsic and extrinsic objectives are thus the fundamental categories of player engagement, and the responses suggest that one reason for players’ desire to continue is that they want to keep playing until the objectives are accomplished, as stated here by one respondent: “A new goal to achieve, [gives] constant motivation”.

## **Activities**

The component of activities is concerned with what players *want to do* in order to reach an objective. The responses indicate that an activity can be performed in-game, out of the game and within the mind and/or with the body. The responses also illustrate that players perform various categories of activities as a means of accomplishing objectives.

### ***Solving***

The category of solving is describing activities, where players become engaged in using their mental faculties to solve intellectual challenges and puzzles, develop strategies, devise tactics and solve problems when they are motivated by intellectual challenges. As one respondent states: “[I get motivated when the game is] challenging my brain with puzzles”. Another respondent wants to keep playing when he is performing the activity: “Using my brain...” in order to reach his objective, namely “... to outsmart my opponent”. Respondents additionally mention that they become disengaged when puzzles are too hard or too easy or if the intellectual challenges are repetitive and trivial.

### ***Sensing***

Most games are mediated via both audio and visual (and in some cases haptic) elements. The category of sensory engagement makes players want to continue to play because they want to experience the audio (sounds, soundscapes and music), visuals (graphics and animated elements) and aesthetics as well as the atmosphere. Experiencing the audiovisual elements can be enough to keep players engaged, as one respondent states: “[I keep playing] to see every part of a visually and audibly compelling game [...]”. Badly designed or boring visuals, audio or settings, as well as an audiovisual interface that is not well designed, are elements which on the other hand can prompt respondents to stop playing.

### ***Interfacing***

The Interfacing category is concerned with the control of the game and the physical actions that players carry out in order to reach their objectives. This ranges from simple keyboard tapping to full body movement in “exergames” or “movement games” played through the Xbox 360 Kinect, the Playstation Move or the Nintendo Wii-mote systems. One example of player engagement through interfacing comes from a female respondent, who states that she keeps playing because she simply wants to move: “When I play Wii Fit and want to be active”. Player engagement through Interfacing can also be triggered by mimicking/replicating actions and also covers voice input and other input devices (e.g. in singing and band games). Respondents mention that they do not want to continue playing a game when the controls or the input interface are badly designed or when the control of the game is not easily accessible.

### ***Exploration***

When players are engaged in exploratory activities they are motivated by objectives concerned with exploring the game’s elements, the world and the setting, seeking variety, discovering novel elements in the game or encountering the unexpected. As one participant states: “[I am motivated by] the feeling that there are new experiences waiting for me on the horizon”. Players can become disengaged while exploring if they get stuck, when they *have* to find collectibles or when it takes too long time to get somewhere.

### ***Experimentation***

The possibilities of modifying a game, customising elements or characters or playing with the possibilities of the game mechanics can trigger players into engaging in



experimentation. They can, for example, experiment by playing different roles, use new tactics or try out different scenarios. As one respondent states: “In the game Minecraft [...] there is no story, no end, nothing else but experimenting [...]”.

### *Creation*

When a game supports user-generated content and opportunities to build or create new elements, players can feel engaged to such an extent that they return to play purely because it challenges their desire for creation, as stated in this example: “[I want to come back to play because I am] creating my own levels for fun” (in Little Big Planet”).

### *Destruction*

Many recent games are focused on the destruction of structures and objects, while elimination and killing opponents are central to many games. These possibilities engage players to keep playing due to activities related to destruction. For example, as one respondent states, “Games that allow you to destroy things are very entertaining [...] A good example is Just Cause 2. You are able to destroy nearly everything in this game”. However, some respondents also become disengaged when there is not enough variation in the destructive activities, as stated by the same respondent here: “Most of the time, it’s very entertaining blowing everything you see up, but after a while the game begins to lack substance and the wish to play it decreases”.

### *Experiencing the Story*

Another category of player engagement activities involves players experiencing the story while being motivated by objectives concerned with finding out how the storyline develops and progresses, how the plot thickens or what the different chapters contain. Examples of triggers for this type of engagement are the anticipation of what will happen and being curious about how the story evolves: “[I keep playing] because of the story and that I want to see what happens next”. Respondents’ answers differ a lot concerning the story, as some do not want to keep playing when there is too much story, if the story is boring or bad or if there is no story at all.

### *Experiencing the Characters*

Some respondents also want to continue playing because they want to develop and play with their characters; they want to experience how their characters evolve, what happens to them, how to affect them and how they interact with the world and other characters. Players can become disengaged when they are not satisfied with characters in a game, for example when an unintelligent AI controls the characters.

### *Socializing*

The category of social engagement involves the social activities of playing, i.e. when sharing the experience of playing with others becomes an objective in itself. Players who feel engaged while playing with others at home on a console that supports multiple players, or with friends online via Wi-Fi or LAN, report that they return to play because the game stimulates friendship, camaraderie and the social element. As one respondent puts it: “[I come back to play] if [I am] able to battle others”. Other players keep playing because they want to take part in game-related communities and cooperate in teams: “I like team-play, tactics and communities – often more than the actual game”. Performing well or helping someone can also engage players because these activities earn the respect of peers.

Communication between players may also motivate players to keep playing, for example when they compare their achievements, brag about their skills or desire to be better than others are at playing the game: “[I keep playing when I am] getting closer to the goal of being in the top 100”. Chatting or writing about their experiences in the game or outside the game can also encourage continued play: “[I get satisfaction when] people are writing articles about you and your clan in some hot news [...]”.

Competing with others is an activity that is triggered by, for example, racing and fighting and is usually closely related to socializing where the results of a competition are compared. If there is too much competition in a multiplayer game, or when the competition is unbalanced, some respondents can also become frustrated and may choose to disengage. Some respondents do not even want to play a game when there is no multiplayer option.

### **Accomplishments**

The accomplishment component is concerned with what happens when an objective is accomplished and is related to the end results of players’ activities towards the objectives. The responses can be divided into categories of achievement, progression and completion.

#### *Achievements*

Respondents answer that they keep playing when they want to achieve or get something – such as items, equipment special artefacts, points, access keys to new levels, unlocking special abilities, etc. For example, one respondent keeps playing when he has “the chance to achieve things and unlock new abilities/items”. If there are no achievements or payoffs to strive for in a game, some respondents state that they become disengaged.

#### *Progression*

The category of progression includes the desire to get better equipment, advance to a higher level or improve abilities in general. One respondent wants to continue to play when he is “[...] getting better gear, completing tougher parts of the game [...]”. In addition, players will keep playing for as long as the game manages to keep them engaged by measuring advancement in terms of, for example, points, score, levels, stats, experience points, Xbox Gamerscore and/or Steam achievement points. Other triggers of progression are the desire to master a game to perfection, i.e. improving the ability to adapt to variations of the basic rules of the game and the process of learning the basic rules, patterns, possibilities and limitations: “[I want to come back to play because] the number of items and game mechanics were few but what you could do with them was plentiful. You could always be a bit more precise, faster, better positioned on the map, etc. (in Quake 3).”

When there is too much repetition, no variation, trivial and predictable elements and no progression, some respondents do not want to keep playing.

#### *Completion*

Another accomplishment consists of game elements that motivate a player by setting up challenges, obstacles, encounters and similar objectives in order to get something done, complete something or finish it fully. This type of engagement is also caused by a player’s desire to overcome in-game, AI-controlled opponents such as end-level bosses and other entities or to compete against non-player characters. Players also choose to continue playing because they feel a need to complete tasks, quests, raids, levels and

missions, overcome a challenge, avoid something, simply survive or complete a puzzle, solve a riddle or finish anything that can be accomplished.

Perseverance is an important trait for players engaged by the completion category: “As I am a perfectionist, it gives me great pleasure and satisfaction to achieve an optional goal. I always try to get a 100% killing rate of all enemy units, even though I only have to destroy their buildings, for instance”. Some players keep playing because they want closure, i.e. to explore all the challenges that the game world presents or to find answers to all questions: “[I come back to play when I have] a sense of not being finished, either due to a failure to explore the story or world fully, or having failed to defeat a particular challenge”. Generally speaking, players return to play as long as they are motivated to complete the challenges offered by the game, and as long as there are more interesting elements to complete. Respondents, on the other hand, become disengaged when the difficulty level of a given challenge is too high or too low a challenge, when there are no challenges to overcome or if there is no balance between challenges and skills. When there is nothing at stake, and if completing something is too hard, respondents also do not want to keep playing.

### **Affect**

The affect component is concerned with the emotions players experience when performing activities and/or accomplishing something.

#### *Positive affect*

The positive affect is an important category of engagement, as the respondents included a variety of positive emotions in their responses: enjoyment, fulfillment, success, victorious, excitement, curiosity, anticipation, surprise, satisfaction, relaxation, relief, empathy, the feeling of fun (e.g. through humour), suspense, tension and excitement (e.g. in order to avoid boredom). Some players actively seek out game experiences that may result in arousal or specific physiological reactions, for example when they want to be relieved of stress or want to experience an adrenaline rush: “[A game gives me satisfaction when] getting out of impossible situations. Getting from A to B in lightning speed. Adrenalin gets me pumped [and] creates a warm feeling in my cheeks”. Empathetic reactions may also occur if a player develops feelings for in-game characters or starts to care about something in the game world: “[I get satisfied] when I feel that my character/role has made a difference [...]”.

#### *Negative affect*

The respondents mentioned many sources of disengagement related to negative affect. If a game is uninteresting, boring, frustrating, dissatisfying, not logical, too simple, meaningless, annoying, unforgiving, wastes the player’s time, if it can be completed too quickly or is too time consuming and simply not fun, it may also result in disengagement. Furthermore games which do not appeal to the respondent, are too mainstream, the wrong genre, or create too much time pressure can make some respondents stop playing.

However, a negative affect can also become a trigger for sustained engagement, as in this example, where one respondent keeps playing even when becoming frustrated: “Sometimes [I] play casual puzzle games, and when it doesn’t work for me I get angry and play until I solve the puzzle”. Furthermore, even though a task can be boring and repetitive to accomplish (e.g. when “grinding”), a player might still be engaged due to the desire to continue in order to progress.

### ***Absorption***

Feeling absorbed in a game is related to the concepts of flow, immersion and presence. Becoming immersed or experiencing presence is reported, for example, when a player feels that she is in another place (mediated by the game) and wishes to go there again and again to escape from the real world: “[I am motivated to play when I can experience] completely different worlds that I can immerse into”. Another respondent experiences how engagement can lead to self-presence and is motivated by a desire to become so absorbed in the game that he “becomes” the main protagonist of the game: “[I want to keep playing] whenever you stop thinking it is a game that you are playing, and instead your mind and the game melt together. Like in God of War, you no longer play Kratos, but you become Kratos”. Some respondents mention that they might even become disengaged if there is a lack of immersion in the game.

The responses indicate that all three categories of affect can become drivers of continuation desire, as some players want to keep playing due to the affect resulting from sustained activities or accomplishments of objectives. The experienced affect stimulates players to make up new, self-defined intrinsic objectives, to accomplish yet another game-defined extrinsic objective or to play again at a later time

This concludes the presentation of the various components and categories of engagement, which now can be compared by rank-ordering.

### **Rank-ordering the Categories of Engagement**

In order to exemplify one application of the framework, and to compare the categories of player engagement, all the responses from the open question “What in a game makes you want to continue playing?” in the three surveys (n=83, students; n=48, game forums) were divided into statements relating to each of the categories of player engagement concerned with the components of activities, accomplishments and affect. The objectives component was not included, as the question concerned with that component was only included in the first survey. All statements (n=310) were then organised into categories, counted and finally rank-ordered. Figure 2 shows how many times the respondents mentioned elements of the various categories in percentage terms.

Although this ranking obviously only gives an indication of the significance of the various categories among the random respondents selected for this study, it does demonstrate that accomplishment overall (36%), experiencing the story (18%), socializing (10%), sensing (9%), exploration (7%) and positive affect (8%) were the most often mentioned categories among this group of respondents.

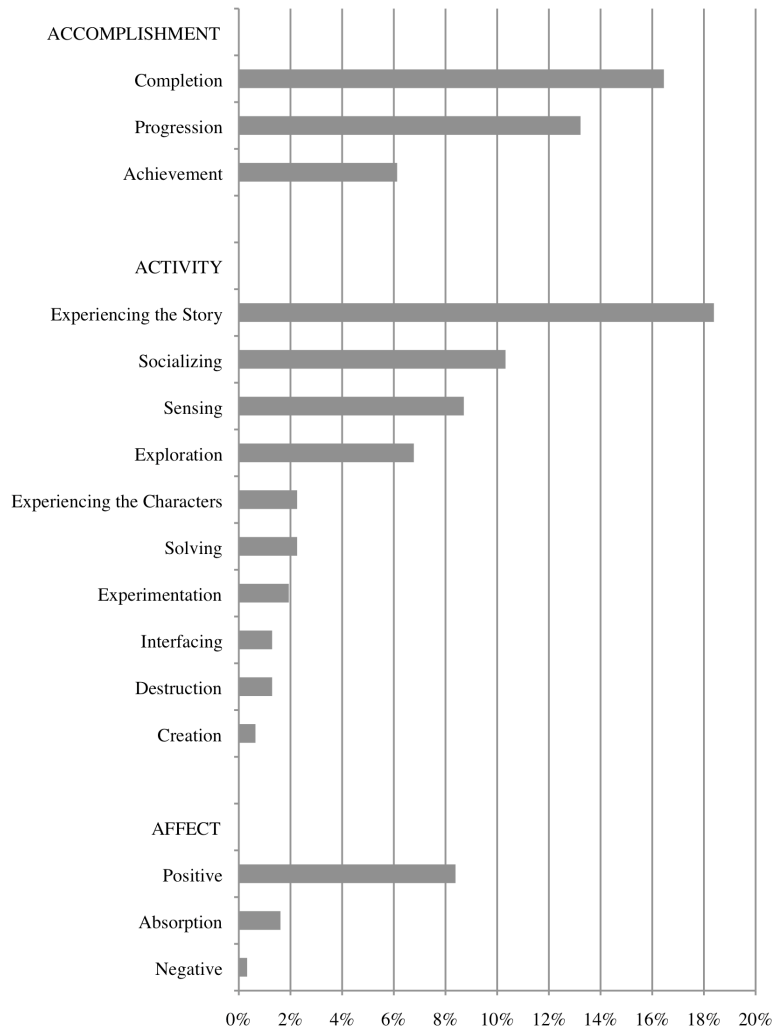


Figure 2. Categories of player engagement rank-ordered; 131 Respondents, 310 Statements.

What in a game makes you want to continue playing?

## DISCUSSION

The purposes of this study were to identify empirically the triggers, components and categories of player engagement and to use these findings to develop a framework of the player engagement process. The suggested framework attempts to explain how engaging player experiences are sustained and how the identified four components and categories of player engagement support the desire to continue playing.

## Limitations

One limitation of the findings in the current study is that it remains to be investigated whether the identified categories of player engagement are valid for other target groups and games. In an earlier investigation of engagement in World of Warcraft (WoW) (Blizzard Entertainment 2004), 419 players responded with 178 answers describing which elements in WoW “[...] engage you, i.e. make you want to continue to play and make you come back for more” (Shelepin 2010). Using focused coding on the relevant answers from that study, no new categories of player engagement were found, which

indicates that those identified in the current study also cover engagement experienced by WoW players.

An examination of other target groups (e.g. female, casual, hardcore or elderly players) and specific games could further validate the categories found in the current study. Additionally, an investigation among game designers into how they design games in order to make people keep playing could furthermore support the findings in the current study. However, the process-oriented framework of player engagement is designed for flexibility and each component could potentially be expanded with add-ons, should the presence of novel categories occur in new target groups or future games.

The exemplified rank-ordering of the categories shows that it is possible to get an indication of the importance of the different categories that make players want to continue to play. However, this is only true for the respondents asked in this study, and further investigations are needed in order to compare a range of target groups as well as game genres. Another limitation of the ranking in the current study is quantification through the interpretation of answers to open-ended questions that might be biased by the researcher, a problem which could be addressed by quantitative surveys using the categories identified in the current study.

### **Comparison with other studies**

Some of the findings share characteristics with other theories, for example the affect category labelled 'absorption', which is strongly related to the concepts of flow, immersion and presence. However, it can be argued that these concepts are insufficient in explaining the complex, multifaceted concept of engagement thoroughly, due to their focus on other player experience elements rather than the triggers of player engagement found in games.

According to the findings and the framework, concepts which are usually used in relation to describing engagement, e.g. immersion, presence, flow, pleasure, fun and enjoyment, are related to the affect component of the framework and are thus *results* of player engagement, indicating that continuation desire is a necessary prerequisite in order to experience these concepts. This is somewhat in line with Brown and Cairns' work (2004), as their findings suggest that engagement is a prerequisite for immersion. The current study also relates to this work inasmuch that to become engaged or engrossed, a player firstly needs to be motivated (by setting up an objective), and then time, effort, attention and emotion must be invested (by performing a range of activities) in order to continue playing (by setting up new objectives after experiencing accomplishment and/or affect).

In general, the player engagement process suggests that without any engagement it is harder or even impossible to experience some of the other concepts mentioned in the literature review such as flow, as also suggested by Jennet et al. (2008). However, even if it can be argued that player engagement might also support the three dimensions of presence (spatial, social and self-presence) mentioned by Tamborini and Skalski (2006), players could experience spatial presence without being engaged, for example when experiencing a realistic, yet uninspiring, virtual environment.

The framework also illustrates that activities can become rewarding in themselves when they result in positive affect. This relationship between activities and affect can be associated with the concept of autotelic activities mentioned in relation to flow by

Csikszentmihalyi (1991), which have a rewarding purpose in themselves and are undertaken purely for the enjoyment of doing so.

The component of affect identified in the current study obviously bears resemblance to the different dimensions of the player experience identified by Poels et al. (2007) and used by IJsselstein et al. (2008b) and Van den Hoogen et al. (2008) to investigate player experiences, because these are concerned with the player's experiences and feelings. However, they could all be argued to become results of engagement or disengagement, and so it would be interesting to add the element of continuation desire in future investigations in order to explore further the player engagement dimension.

The player engagement categories identified in the current study can also be related to other studies. Yee (2006) identifies players' motivations to play Massively-Multiplayer Online Role-Playing Games (MMORPG) and describes three components (achievement, social, and immersion) with ten subcomponents, which all support the player engagement categories. The sub-components of achievement (advancement, mechanics and competition) are related respectively to the categories of progression, solving intellectual problems and the competition aspect of socializing. The social component (socializing, relationship, teamwork) is associated with the category of social activities. Finally, the subcomponents of immersion (discovery, role-playing, customisation and escapism) are related to exploration activities, experiencing the story and characters and the affect of absorption/escapism. However, the player engagement framework includes additional categories (e.g. interfacing and creation) due to the wider range of games investigated. The categories also corroborate the findings from the works of Przybylski et al. (2010) and Rigby and Ryan (2011), as the social category is associated with the need for relatedness, while e.g. exploration, experimentation, creation, and intrinsic objectives are related to the need for autonomy and finally advancement, achievements and interfacing are connected to the need for competence.

The player engagement categories and components also relate to Ermi and Mäyrä's SCI model (2005) whereby sensory immersion can be explained as a result of the activity of being engaged by sensing the game. Challenge-based immersion is an outcome of being engaged by interfacing with the game, solving problems and advancement and completion. The overall suspense caused by uncertainty regarding the outcome (which also is related to challenge-based immersion) is an affect experienced by the player during the performance of activities. Finally, imaginative immersion is related to the activity categories of experiencing the story and the characters, as well as the affect component in the player engagement framework.

Furthermore the player engagement process also supports Klimmt's (2003) view that players start playing, continue to play and return to play because they want to experience enjoyment. Enjoyment (an affect) is the result of becoming engaged while playing and enjoyment is also one reason to become engaged, because the experience of enjoyment can lead to new objectives and activities which results in new enjoyable experiences. However, as can be seen in the findings in the current study, players also begin playing, keep playing and come back to play for additional reasons.

## CONCLUSION

This study has revealed that engagement can be explained as a process whereby players engage in a pursuit of *objectives* (intrinsic or extrinsic) and consequently perform a range of *activities* (interfacing, socializing, solving, sensing, experiencing the story and characters, exploring, experimenting, creating and destroying) in order to *accomplish* objectives (by achievement, progression and completion) and feel *affect* (positive, negative and absorption). Exploring the concept of player engagement by focusing on the continuation desire has been beneficial, and the results show that a number of categories need to be included when investigating the concept. The method proved to be advantageous in investigating the many aspects of engagement, and resulted in new knowledge and a more detailed understanding of the aspect of continuation desire – an understanding that hopefully can inspire future discussions and research on player engagement. The framework proposed in this study, along with the various categories of player engagement, thus lay out the foundation for future work and are intended to be utilised by game developers in designing for engagement, develop new ways of mapping and evaluating player engagement during game play (e.g. Schoenau-Fog 2011), assist scholars in analysing and categorising player engagement in games, as well as inspire the design of novel engaging interactive experiences and learning applications.

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