

IDENTIFICATION AND CATEGORIZATION OF DIGITAL GAME EXPERIENCES: A QUALITATIVE STUDY INTEGRATING THEORETICAL INSIGHTS AND PLAYER PERSPECTIVES

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Digital game experience is not a one-dimensional concept. Great variety exists in game genres and players, and game experiences will differ accordingly. To date, game experience is studied in a differentiated way, meaning that most studies focus on one specific game experience dimension. The objective of our study was twofold. First, we wanted to obtain a comprehensive picture of first-hand experiences of playing digital games. We conducted six focus group interviews including different types of gamers with the aim of eliciting a wide array of lay-conceptualizations of game experience. Second, we aimed to develop a categorization of game experience dimensions. This was established by discussing and integrating theoretical and empirical findings. Our categorization revealed nine dimensions: enjoyment, flow, imaginative immersion, sensory immersion, suspense, competence, tension, control and social presence. This categorization has relevance for both game scholars and game developers wanting to get to the heart of digital game experience.

KEYWORDS

digital games, focus group methodology, game experiences, player research

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Everybody who has ever played a game or has watched other people play will undoubtedly agree that playing games does not leave people unaffected. Be it the joy or pride when you beat your friend in a game of virtual tennis, the suspense you feel when fighting in a first-person shooter (FPS), or the experience of being immersed in the story of a role-playing game (RPG), playing games has the potential to evoke a wide array of experiences. It is impossible to come up with a single word or concept that embraces what people feel or experience when playing digital games. In addition, the gaming industry has developed a wide range of games and gaming devices, targeted at different ages and gender groups, and at gamers with various play styles and player motivations (see Bartle, 1996; Sherry et al., 2006; Yee, 2002, 2006). Given this variety in game genres and individual differences between players, game experience has to be studied as a multi-dimensional concept.

A substantial part of academic research to date has focused on the *effects* of gaming on cognition and behaviours. For example, a large number of studies investigated the interplay between playing violent games and aggressive behaviour (Anderson, 2004; Carnegie and Anderson, 2005; Sherry, 2001) or desensitization with regard to real-life violence (Carnagey et al., 2007). Other studies have emphasized positive effects of gaming, such as visual attention skills (Green and Bavelier, 2003) or social bonding with friends (Colwell et al., 1995). Furthermore, a significant number of studies have focused on the *use* of digital games and *motivations* for playing digital games (Yee, 2006). These studies employed a variety of theoretical approaches, such as uses and gratification theory (Sherry et al., 2006), self-determination theory (Ryan et al., 2006) and selective exposure theory (Bryant and Davis, 2006). The actual *experience* of playing digital games has also attracted substantial interest in academic gaming literature. However, since game experience in itself is a complex phenomenon, current studies have mostly focused on a single dimension of game experience, for example enjoyment (Klimmt, 2003), flow (Sherry, 2004; Sweetser and Wyeth, 2005), immersion (Brown and Cairns, 2004; Ermi and Mäyrä, 2005) or effectance and control (Klimmt et al., 2007a). Consequently, there already exists considerable conceptual knowledge about each concept separately.

Moreover, most game experience dimensions mentioned in current gaming literature originate from other, related disciplines such as Human Technology Interaction (HTI), Virtual Reality (VR), Computer Mediated Communication (CMC), or positive psychology. Also, these experiences are often tested in experimental settings where game play is manipulated and steered into a certain intensity of a particular game experience. We summarize recent studies below. The main objective of this article is then to put these experiences to the test, employing a more bottom-up approach by letting gamers freely deliberate and articulate their emotions and experiences while playing digital games. As such, this study approaches the topic from a broad perspective, taking into account the multiple experiences concurrently.

Related Work on Digital Game Experience

Playing digital games is an increasingly popular form of media entertainment, of which enjoyment is one of the core experience dimensions (Vorderer et al., 2004, 2006). Klimmt (2003) proposed that digital game enjoyment is based on three experiential factors: experience of *effectance* or immediate feedback to the player as a causal agent, cyclic feelings of *suspense and relief*, and the *fascination from being drawn into an alternative reality* or a fictional world. Klimmt et al. (2007a) empirically demonstrated that the experience of effectance is an important factor of game enjoyment. Their research further showed that the experience of *control* in a game had a more complex, non-linear relation to overall game enjoyment. They suggested that players strive to control a game but that the struggle for control, which is actually the *challenge* of a game, can also make playing enjoyable. Subsequent studies by Klimmt et al. (2009) also showed suspense to be a driver of game enjoyment.

The experience of being drawn into an alternative reality is often referred to as *immersion* (Calleja, 2011; Murray, 1998). Emri and Mäyrä (2005) studied immersion in a digital game context and proposed a model describing how it is experienced while people are playing. More concretely, their model consists of three different components of immersion: sensory, challenge-based and imaginative immersion (the SCI model). *Sensory immersion* refers to the multi-sensory properties of a game – the extent to which the surface features of a game have a perceptual impact on the user. *Challenge-based immersion* involves immersion in the cognitive and motor aspects of the game that are needed to meet the challenges the game poses. Finally, *imaginative immersion* refers to the immersion within the imaginary fantasy world created through the game, and depends on the richness of the narrative of the game. Brown and Cairns (2004) developed a somewhat different view on what immersion in a gaming context means. They carried out a number of in-depth interviews with gamers to find out what they mean when they talk about immersion and analysed their data using grounded theory. Their results showed that, for most players, immersion equals the degree of involvement within a game. Accordingly, Brown and Cairns (2004)

described a progression of three stages of immersion, indicating increasing levels of involvement: engagement, engrossment and total immersion (or presence). The level of immersion appears to depend on the path of time and is controlled by barriers that need to be removed before the next level of immersion can be experienced. Jennet et al. (2008) conceptualized immersion in a slightly different way. According to these authors, immersion differs from other engaging game experiences, such as flow, presence and cognitive absorption. They consider immersion as the so-called *prosaic experience* of engaging with a digital game. This implies that immersion happens if a person gets drawn into a game. Although immersion contributes to having a good game experience, it does not necessarily mean that the player has an optimal or fulfilling experience (Jennet et al., 2008).

In contrast, an experience that does indicate an optimal experience, is *flow* (Csikszentmihalyi, 1990). This concept stems from the field of positive psychology and was originally conceived to describe extremely positive ‘peak’ experiences in daily life (e.g. playing music, rock climbing, playing chess). Csikszentmihalyi (1990) described flow as a state in which skills and challenges are perfectly balanced, leading to an optimal experience and involving high levels of cognitive absorption or deep concentration. Furthermore, flow makes people forget about themselves and become totally immersed in the activity (Csikszentmihalyi, 1990). Flow is a prominent concept when deliberating about digital game experience (Keller and Bless, 2008; Sherry, 2004) as the specific nature of digital games matches closely with that of activities that Csikszentmihalyi (1990) outlined to be typically conducive to a state of flow. These are (a) having clear and concrete goals, (b) enabling actions that can be adjusted according to skill level or capabilities, (c) providing feedback on the score reached or the progress made and (d) possessing visual and auditory information or cues that can aid concentration and impede distraction (Sherry, 2004). Sweetser and Wyeth (2005) applied the concept of flow in a game enjoyment context. They propose a model of game design heuristics structured by the concept of flow and argue that each element of flow (e.g. concentration, challenge, skills, etc.) contributes to game enjoyment. They provided tentative evidence for their model by showing that highly rated video games scored better in terms of their game-flow characteristics compared to games that had received low ratings. Although we agree that flow is an important dimension of game experience, we think Sweetser and Wyeth’s (2005) argument that flow can be equated to game enjoyment might be limited. First, game enjoyment represents a broader set of experiences besides flow (e.g. Klimmt’s studies on effectance, control and suspense). Second, their argument is still tenuous since they did not study whether and how players actually experience more flow in highly rated games. A more recent experimental study by Weibel et al. (2008), in which flow was studied in relation to playing against a computer-controlled agent or a human-controlled avatar showed, however, that flow was an important mediator of game enjoyment.

It is important to note, in this respect, that a state of flow is rare in everyday life – the exception rather than the rule. As noted above, the balance or perceived fit between challenge and skills is central to the experience of flow. If challenges imposed by a digital game outpace the skills the gamer possesses, frustration will most likely be experienced. On the other hand, if a gamer's skills are too developed in comparison with the challenges imposed by a digital game, the experience of boredom will presumably occur. Both boredom and frustration are potential negative experiences that occur in a digital game context. Strangely enough, current game research does not devote much explicit attention to these negative game experiences. However, *negative experiences* such as frustration or tension (Gilleade and Dix, 2004) indisputably contribute to the challenge of a game and are presumably essential in order for the overall game experience to work. Consequently, a lot of successful games are designed to gradually evolve from negative emotions in the face of challenge to positive emotional experiences, such as flow, when the skills are in balance, and the challenge is overcome (Keeker et al., 2004; Ravaja et al., 2004). In a similar vein, Bryant and Davis (2006) have argued that gamers strive to maximize their pleasure, which often inevitably includes that they sacrifice immediate gratification for the greater enjoyment that awaits them as soon as they master the next level. Jennet et al. (2008) further mentioned that the experience of immersion during game play also involved negative emotions such as *uneasiness* or *anxiety*. On the other hand, one of their experiments showed that non-immersive games induced a negative experience of *boredom*.

One factor that is often presented as impeding the experience of flow or immersion in a game is the presence of other people, both as bystanders or as co-players (Sweetser and Wyeth, 2005). Ironically, digital gaming frequently takes place in *social contexts* and *social motivations* are important reasons why people become involved in game play (Jansz and Martens, 2005; Jansz and Tanis, 2007; Williams, 2006). Many games come with a multi-player mode, leading to competitive or collaborative play between co-located or online friends. De Kort and Jsselsteijn (2008) argue that social, physical and media settings have an important impact on the particular experience of playing with others. Some studies have already shown that the specific nature of a social context may significantly influence players' game experience (Bracken et al., 2005; de Kort et al., 2007; Gajadhar et al., 2008; Lim and Lee, 2009; Ravaja et al., 2006). These findings were linked to the experience of *social presence*, a concept that stems from CMC literature and is defined as 'the sense of being with another' (Biocca et al., 2001). Gajadhar et al. (2008) illustrated that social presence mediated the effect of social setting on player experience and concluded that the presence of others enriches game experiences rather than being a disturbing factor for the experience of flow, a notion that was also supported by the above-mentioned study of Weibel et al. (2008).

Notwithstanding the fact that the game experience studies cited above have all made significant contributions to the field of digital gaming research, the question remains as to how prominent specific experiences are during typical, everyday sessions of game play, how different experiences are interrelated, and how they are dependent on specific contexts, modalities and different type of players.

Study Objectives

The objective of our study was twofold. First, we wanted to get a full account of first-hand experiences of gaming. We conducted focus group interviews with different types of gamers with the aim of obtaining a wide array of lay-conceptualizations of game experience. Focus group methodology is a qualitative research tool that is frequently used in social sciences to explore people's meanings, ways of understanding or experiences of a complex phenomenon (Lunt and Livingstone, 1996; Merton, 1987). One of the major strengths of focus group methodology is its *exploratory nature*. Further, focus groups are very useful in providing *context and depth*. Besides observing experiences and thoughts, the moderator can probe in order to acquire relevant background information (e.g. about motivations, contexts) on these experiences and thoughts. Given the diversity of individual differences with respect to play styles (Bartle, 1996) or motivations to play games (Yee, 2002, 2006), focus groups can provide in-depth, contextual and motivational insights into the specific experiences of different types of gamers. Focus groups thus enabled us to explore differences in game experiences according to player type, game genre and context of play. Second, we wanted to unravel the different dimensions of game experience and develop a categorization. This was established by discussing theoretical and empirical findings and consolidating these into a categorization of digital game experience.

Method

Participants

We organized six focus groups (FG1–FG6) with three to five participants each ($N = 19$). We recruited participants through the participants' database from the Human Technology Interaction group of Eindhoven University of Technology. The comparatively low number of participants allowed us to devote a maximum amount of time to letting them articulate their personal experiences with playing digital games. The composition of the focus groups differed according to several variables such as gender, age, occupational status and gaming frequency (i.e. *frequent gamers* or people who game at least once a week and *infrequent gamers* or people who game at least once a month; see Table 1). FG1 had five participants of whom two were female. FG2 consisted of three male participants. FG3 and FG4 both had four male participants. FG5 had two male and two female participants. FG6 had three female participants. Participants' ages ranged from 19 to 37 years. With respect to professional status, FG1 and FG2 consisted of

undergraduate students, FG3 included both undergraduate and graduate students, FG4 was composed of working people over 30 years of age. FG5 also consisted of working people, aged 28–32 years. FG6 had both undergraduates and one job-seeking participant. Two focus groups (FG1 and FG2) included infrequent gamers, two focus groups (FG3 and FG4) consisted of frequent gamers and two focus groups (FG5 and FG6) had a mix of frequent and infrequent gamers. This combination of uniform and diverse focus group compositions with respect to gender and playing frequency allowed us to compare utterances within and between the different gamer groups.

Table 1 Categorization of digital game experience dimensions with corresponding first-hand descriptions

Game experience dimensions	First-hand descriptions
Enjoyment	fun, amusement, pleasure, relaxation
Flow	full concentration, being in the zone, detachment from the outside world
Imaginative immersion	being absorbed in the story, identification
Sensory immersion	being fully drawn in, enjoying sound and graphics
Suspense	challenge, tension, pressure, hope, anxiety, thrill
Competence	pride, euphoria, accomplishment
Negative affect	frustration, disappointment, irritation, anger
Control	autonomy, power, freedom
Social experiences	enjoyment with others, being connected with others, empathy, cooperation, teasing

Procedure

The focus groups followed a fixed script that was structured in the following way:

Introductory round: The moderator and the assistant moderator presented themselves and gave a brief description of the main goal of the focus groups. More concretely, they explained that the focus group was about digital games and player experience, and participants could freely talk about how they experienced digital gaming. Then participants presented themselves, giving their name, game frequency and the type of games they usually played.

Individual task: We asked each participant to reflect for five minutes on what they considered to be the most prominent game experiences for themselves. We explicated that by 'game experiences' we meant: all kinds of emotions, feelings, or thoughts that come into play while playing games. Participants wrote these

experiences down on sticky notes. We also asked them to indicate their most favourite game and the game they had played most recently. After this, all sticky notes were pasted in the middle of the table to serve as a starting point and inspiration source for the next stage, the group discussion.

Group discussion: The group discussion was the most crucial part of our focus groups. In these group discussions participants could freely talk and interact with each other about their game experiences. The discussion was clustered around three core questions by means of a semi-structured questionnaire. Additional questions could be posed, probing for clarification or more in-depth insights. The three core questions were: (1) On what occasions do you typically start gaming? (probing both motivations and opportunities for game play); (2) What do you experience or feel *while* gaming? (probing in-game experiences); (3) What do you experience or how do you feel *after* gaming? (probing post-game experiences). The moderator further probed the experiences that were reported by each participant individually. Additional sticky notes were used when new experiences were mentioned. Note that in the current article, we only report the findings for in-game experiences. Results on post-game experiences are beyond the scope of this article and are reported elsewhere (Poels et al., 2010).

Group task: At the end of the group discussion participants were asked to cluster and rank all game experiences that were reported on the sticky notes depending on how central they are to gaming in general (i.e. across games). They wrote down all experiences on a large sheet of paper with the most prominent experiences in the centre of the sheet and the less relevant experiences closer to the margins of the sheet. As such, sheets from the different focus groups could be compared and this aided us in structuring the diversity of experiences mentioned by the participants.

Each focus group took about 90 minutes and participants were rewarded with €10 for their participation. All focus group interviews were recorded and transcribed. Citations we report in the results section are all translated from Dutch. Subsequently, transcriptions were subjected to a thematic analysis in which we looked for repeatedly mentioned game motivations, opportunities and experiences.

Results

This results section first describes opportunities and motivations for game play, and then continues with game experiences while playing, the core topic of this focus group study. The results section ends with a description our categorization scheme of digital game experience.

Opportunities and Motivations for Game Play

The occasions on which participants typically start gaming varied considerably. A substantial number of participants reported that they often started gaming upon

coming home after a stressful day at school or work. Playing games helped them to vent their stress and divert their thoughts away from school or work.

If I come home after a busy day and I don't want to do anything else yet, I often play a couple of quick games before I continue with something else. (Male participant, FG1, 20 years)

I start playing a game to de-stress, no duties any more, I can do what I choose and what I like ... (Male participant, FG4, 31 years)

Participants also said that they started playing a game as a pastime to overcome boredom or to fill up free moments.

when I am feeling bored or when I don't feel like studying ... (Female participant, FG1, 21 years)

I game when I feel like gaming, when I don't feel like doing anything else. (Male participant, FG2, 24 years)

Another motivation that they put forward was more social in nature. Some of the participants reported that they often played games when they were with friends, for example, before or after going out.

I rarely game on my own. When I game it is a social event where we sit on the couch, with beer and chips. This usually happens the hours before we go out. (Male participant, FG2, 22 years)

Gaming is chilling with friends, hanging on the couch together. (Female participant, FG5, 30 years)

Some participants reported a combination of both social and the boredom motives.

When we are together with friends and we have a break or when we do not really know what to do, we sometimes play a game together. (Female participant, FG1, 21 years)

When my boyfriend and I take a short break from work, or have nothing else to do, we play on the Wii console. (Female participant, FG6, 29 years)

Some of the more frequent gamers reported an additional occasion that was not mentioned by any of the less frequent gamers. They started to play games in a coordinated way, making appointments with friends and competing with them in a team. For those gamers, the type of game they played differed with each occasion. More concretely, they played short games when feeling bored or after a busy day. In contrast, long games were scheduled and played in teams.

I play FPS games if I have nothing else to do, or World Worms Party. When I play Massive Multi-player Online Role Playing Games (MMORPGs) it happens in a much more coordinated way, you really need to make appointments beforehand. (Male participant, FG3, 23 years)

I game if I want to do something completely different, for example if I come home after work. Most of the time I play a couple of short FPS games, those games you can play at any moment, against anyone. In the evenings, I play longer Real-time Strategy (RTS) games. (Male participant, FG3, 28 years)

Other, more frequent gamers did not report participating in official game competitions, but they mentioned organizing competitions between friends. These activities were planned weeks beforehand. Notably, these organized events seemed to be more recognized by the somewhat older frequent players, who also reported having no (more) time to be involved in the real organized competitions due to responsibilities at home or work.

A couple of times a year, we organize 'game nights' in which we gather with four friends. We then start up our own game competition using various games. We game all night long and our aim is to find who's the best all-round gamer. (Male participant, FG4, 31 years)

Game Experiences while Playing

Almost all participants mentioned *fun*, *amusement* and *relaxation* as most prominent game experiences.

Playing games is fun, it relaxes me, it's my hobby. (Male participant, FG4, 31 years)

However experiences of fun were rarely mentioned on their own. As we illustrate in the next citations, other experiences are often mentioned together with fun. For example, experiences of fun were often related to the concept of immersion, that is, being drawn into a game world. They were linked to escape from reality and getting immersed into a fantasy world. We refer to this as *imaginative immersion*.

For me, feeling happy is linked with losing connection with the outside world. You get yourself fully drawn in. (Male participant, FG1, 22 years)

You get into a different world, you can be there for hours without other things on your mind, without realizing what happens outside that world. (Male participant, FG4, 34 years)

Games make me forget everything, I live in a fantasy world then. I withdraw from reality during game play. (Male participant, FG5, 30 years).

Sound and graphics were also often mentioned in this context as factors that contribute to an immersive game experience. This refers to experiences of *sensory immersion*.

When playing HALO, you are walking on a planet on which you crashed, you don't know where you are and all kinds of strange creatures are surrounding you. The music in the game makes it a thrilling experience. It's like in a thriller movie. (Female participant, FG6, 23 years).

When the more frequent gamers reported on the sensory experience of immersion, they distinguished between different types of games.

FPS games are about beating the opponent and are very demanding. As such, the atmosphere and graphics are less important. With MMORPGs it is all about the atmosphere and the beautiful scenes. You get fully drawn in. (Male participant, FG3, 29 years)

Some participants reported that they were not always interested in being immersed in a fantasy world, but they said they enjoyed the freedom to explore a game world, see what the boundaries are, without specific goals or tasks, or pre-set scripts.

Instead of improving my skills, I often enjoy wandering around in the game world, for example, by just driving through all the streets in the game. (Male participant, FG4, 34 years)

This freedom to explore and to experiment with the game play can also contribute to a feeling of control.

I like it that in games like The Sims you can have your own family and that you can control what happens to them. You can be constructive, but you can also ruin their life. Sometimes the latter is the funniest thing to do. Sims is a bit like ruling your own world. (Female participant, FG6, 24 years)

Other experiences were more closely linked to the creative aspect of being in a fantasy world.

I like it when you get more creative in a game. It is funny when you discover something new, something you did not expect. When you find out something that you were looking for, you feel glad. (Female participant, FG1, 21 years)

It is like making your own movie. (Male participant, FG4, 37 years)

Further, *concentration* and *tension* were mentioned as in-game experiences. Participants reported that these experiences were often related to *challenge* and difficulty of the game. Most participants agreed that concentration and effort are needed in order to perform well in games. Interestingly, some frequent gamers mentioned '*being in the zone*' as a state of full concentration in which *performance* and *competence* are at their best. These descriptions bear resemblance to the concept of *flow* in the sense that they involve a state of optimal performance and concentration.

'The zone' happens when you are fully in the game. A bomb may explode, you don't notice it. The bell may ring a hundred times, you don't hear it. You may be hungry, you don't feel it ... You always hope to get into the zone as quickly as possible. Everything works out at that moment, you cannot lose: I'm there and you die. (Male participant, FG4, 31 years)

Especially for the more frequent gamers, the experience of challenge and tension can turn into *negative experiences* such as, 'irritation', 'disappointment', 'frustration' and even 'anger'. They explicitly reported that frustration and irritation often occur when there is a mismatch between challenge and skills (i.e. if the game is either too easy or too hard). Others added that the challenge is exactly what makes games fun to play.

If a game gets too complicated I am often inclined to turn it off, to quit gaming. There has to be some challenge in the game; I don't like it if it is too easy, but if it is too complex I don't like it either. I get irritated if something doesn't work, I sometimes even get angry. (Male participant, FG3, 23 years)

I often play RTS games against the same person, if we set a high difficulty setting, it gets more challenging. Of course you feel disappointed if it doesn't work and satisfaction if it does work out. I think disappointment relates to the effort you put into the game. (Male participant, FG3, 28 years)

I find it very important that you don't just run through a level. I like it when you have to check everything, look for solutions, curse a bit and ask yourself how you should get through. It should not be too easy. (Female participant, FG6, 24 years)

Along the same lines, some participants reported that negative experiences turn into very positive game experiences.

The frustration you have during game play can have a positive ending. For example, if you have to try a hundred of times in order to cross a very small beam and suddenly you succeed, feelings are extremely positive, you really get euphoric. (Male participant, FG4, 37 years)

When completing a level on which I really struggled, I feel instant happiness. (Female participant, FG5, 30 years)

Notably, frequent gamers who participate in game competitions often distinguished between experiences playing games purely for fun and experiences playing competition games with their team. Particularly, *immersion* and *concentration* seemed to differ between those two types of game play. Interestingly, these gamers reported that they played console games when playing for fun and PC games when competing in serious game competitions.

With MMORPG and FPS you need to sit close to the screen, they are very exacting. If you meet with friends to have some fun together, it's much nicer to lean back on the couch, the game triggers the fun, but it's also about other things then. We have a drink and we chat. The game play is purely for fun. When we play games on the PC it is much more serious, you need to be very concentrated then, and strictly focused on the game. (Male participant, FG3, 29 years)

Also, *negative experiences* are stronger if the game play gets more serious.

Game competitions are dead serious, as serious as a soccer game Holland–Germany. You can really feel aggression, or anger. When you play for fun, it is more informal, having fun is the dominant experience. (Male participant, FG3, 29 years)

A substantial part of the reported game experiences related to gaming in a *social context*. Experiences that are typically mentioned in this context are *competition* and *enjoyment with others*.

Participants reported that competition instigated feelings of 'tension', 'nervousness' and 'teasing one another', while at the same time, they perceived competition as 'fun', 'having a laugh' and 'being connected with others'.

It is always a lot of fun! For example when we play Mario Kart with four friends, there's a lot of friendly banter. It is very funny if one player gets picked on by three others. That enhances the enjoyment you have with others. (Male participant, FG1, 22 years)

Emotions evoked through competition with co-located people were reported as much stronger than emotions through competition with the computer, or through competition with online people. Also, participants reported that they put more effort into the game when they play against co-located friends. Moreover, they said that they experienced more tendencies to take 'revenge'. This was attributed to their physical presence, enabling non-verbal and verbal communication and physical contact.

Playing against the computer is totally different from playing against a friend who sits next to you. You can nudge him, give comments ... (Male participant, FG2, 28 years)

When you play with strangers on the internet, you miss a part of the communication. You cannot figure out whether they play for fun or not. You cannot tease them. (Male participant, FG2, 24 years)

Social experience and *connectedness* between players is extremely important for frequent players who cooperate in a team. Additional experiences that emerge in this specific type and context of game play are – besides the more general experiences of *fun* and *immersion* – *power*, *control*, *thrill* and *satisfaction*.

It is nice to play in a team; we often make a lot of jokes and fun together. The urge to build something evokes pleasure. The feeling of getting more and more power and more control on your environment is also part of the fun; and also that you get more status within your environment. (Male participant, FG3, 29 years)

It is important that you feel that you are one team. For me realism is important so you can fully imagine yourself in the game. It causes more of a thrill. If I experience that I am really someone in the game and for my team, it gives me a feeling of satisfaction. (Male participant, FG3, 26 years)

Categorization of Digital Game Experiences

We combined knowledge and insights gathered from both theoretical findings and focus group explorations, with the aim of consolidating these into a categorization scheme of digital game experience. Most dimensions that we discussed in our literature review also surfaced spontaneously in one way or another during the focus groups. Our final categorization revealed nine specific game experience dimensions (see Table 1). We explain this categorization below.

Overall *enjoyment* is the first dimension of our categorization scheme. Gaming is fun, it is a leisure activity and thus enjoyable. Further, people clearly get drawn into a game; be it by the challenge the game poses, the story it entails or the overwhelming environment it creates (or a combination of these three). *Flow* is the second dimension in our categorization scheme. Similar to what we find in literature (Csikszentmihalyi, 1990; Sweetser and Wyeth; 2005), *flow* has to do with the challenge of a game and involves a state of optimal concentration and performance. With respect to *immersion*, we partly follow Ermi and Mäyrä's SCI model (2005). Concretely, our categorization makes a distinction between *sensory immersion* (i.e. related to the sound and graphics) and *imaginative immersion* (i.e. related to the story of the game). This distinction was also clearly made by participants in our focus

groups. We considered challenge-based immersion to largely overlap with our flow dimension. Related but distinguishable from flow and immersion is the dimension of *suspense*. Although the word *suspense* itself was not explicitly mentioned by the gamers in our focus groups, the experience of suspense has been studied in current game literature as an important component of game enjoyment (Klimmt et al., 2007b). Moreover, experiences typically involving suspense, like tension, pressure, relief, etc., were mentioned by the participants. Hence, we use the term 'suspense' for these experiences and incorporate this dimension in our categorization. Next, we included *competence* as a specific game experience dimension. Games are often goal-directed. The fulfilment of a goal or mastery of a specific skill involve perceived competence, which evokes positive emotions (e.g., pride, euphoria). On the other hand, failing to reach these goals often leads to *negative affect*, such as frustration and anger. *Control* is another dimension in our categorization scheme, referring to the ability to have power over the game world, most frequently mentioned in the context of simulation games. Finally, since experiences related to playing with others were often mentioned within the focus groups, our scheme includes *social experiences* as a game experience dimension.

Discussion and Conclusion

We presented a study on digital game experience in which we combined theoretical considerations with game experiences that surfaced through focus groups. This qualitative and exploratory approach has several advantages. We were able to study first-hand game experiences as they were articulated by gamers themselves. This provided us with a rich and varied set of experiences which enabled us to get a full account of game experience and the dimensions it consists of. Most dimensions of our categorization scheme had been already discussed in existing gaming literature, albeit mostly in a focused, differentiated way. Experiences that are already extensively discussed in current gaming literature, like overall enjoyment, immersion, competence and control (e.g. Ermi and Mäyrä, 2005; Jennet et al, 2008; Klimmt, 2003; Vorderer et al., 2006) were also mentioned as primary experiences throughout our focus groups. Further, flow was mentioned by some players as a positive peak experience, or a state of optimal performance in which all attention is drawn into the game. Given the central place of flow in current game experience literature it is interesting to note that in our study flow was reported as being an exceptional state, not very common for all players. Although still understudied in current gaming literature, a variety of negative experiences did surface through our focus groups. Most typically, frustration and tension when challenges in a game are high and seemingly impossible to overcome, or boredom when a game is too repetitive or too easy for a player. We call for future studies to investigate

the particular nature of these negative experiences in more depth. As recently outlined in social gaming literature (de Kort and IJsselsteijn, 2008; Weibel et al., 2008), the specific nature of playing with or against others, and the accompanying experiences, both positive (connectedness, friendly banter) and negative (disappointment, pressure), were also mentioned in our focus groups.

Building on and contributing to current gaming literature, this study aimed to present a comprehensive overview of how it feels to play digital games. An important contribution of this study was the consolidation of current insights from gaming literature with first-hand verbalizations as expressed by the gamers themselves. Our results indicate that the nature and the intensity of specific digital game experiences relate to several factors such as game setting (single vs. co-located vs. online play), game motivation (e.g. game competitions vs. playing games to kill time), game genre, and other non-game-related variables (e.g. being occupied with daily activities). Besides differences between different types of players, which mainly included frequent versus infrequent players, these experiences also seemed to vary within players, depending on the occasion and the motivation of game play. We did not find specific differences according to gender of the players. This is an interesting finding since a number of studies have addressed gender differences in game play and play styles (Williams et al., 2009). It could be that the overall gender differences found are overruled when taking into account frequency or avidness of play. Further studies are needed to investigate this issue.

We are fully aware that our categorization may not be exhaustive and is also limited in the sense that it only describes dimensions of game experience and does not show how these are interconnected. Further research is needed to corroborate correlational and even causal relationships between the different game experience dimensions. Also, future investigations should focus on the interplay between game experiences and different game genres, player types and player motivations. Ultimately, a comprehensive model of digital game experience including all game experiences and moderating variables can be developed.

Nevertheless, the categorization as it now stands has relevance for both game theorists and game developers. Our categorization can aid in determining which concrete experiences or feelings are relevant in research settings that require experimental manipulations of player experiences. This categorization can also function as a starting point or inspiration source in developing a shared understanding and vocabulary of different game experience dimensions. Current gaming literature still lacks a common conceptualization of game experience (Calvillo-Gamez et al., 2010). We call for further research and cooperation among game researchers, since a shared definition of basic concepts is essential in order for a scientific field to progress.

Game developers can rely on this categorization as a tool or a checklist to design games that are able to evoke a richer spectrum of game experiences. They will further benefit from future advancements and theorizing within the domain of digital game experience, for example, the interplay between different game experience dimensions (e.g. the interplay between flow, challenge and negative affect) or the understanding of a specific game experience for different types of users (e.g. game enjoyment for avid versus casual players).

To summarize, digital game experience is multi-dimensional. Actual game experiences range from very broad positive and negative emotions to experiences that are more specifically related to play, challenge or to fantasy and alternative realities. First-hand articulations of emotions and experiences of digital game play, as explored in this article, enabled us to make a categorization of dimensions of digital game experience which lie at the heart of playing digital games.

REFERENCES

- ANDERSON, C.A. (2004) 'An update on the effects of playing violent video games', *Journal of Adolescence* 27: 113–22.
- BARTLE, R.A. (1996) 'Hearts, clubs, diamonds and spades: players who suit MUDs', available at: <http://www.mud.co.uk/richard/hcde.htm> (accessed May 2007).
- BIOCCA, F., C. Harms and J. Burgoon (2003) 'Toward a more robust theory and measure of social presence: review and suggested criteria', *Presence: Teleoperators & Virtual Environments* 12: 456–80.
- BRACKEN, C.C., R.L. Lange and J. Denny (2005) 'Online video games and gamers' sensations of spatial, social, and co-presence', in *Proceedings of the 2005 FuturePlay Conference*. East Lansing, MI.
- BROWN, E. and P. Cairns (2004) 'A grounded investigation of game immersion', *ACM CHI 2004*: 1297–300.
- BRYANT, J. and J. Davis (2006) 'Selective exposure to video games', in P. Vorderer and J. Bryant (eds) *Playing Video Games – Motives, Responses, and Consequences*, Mahwah, NJ: Lawrence Erlbaum, pp. 181–94.
- CALLEJA, G. (2011) *In-game: From Immersion to Incorporation*, Cambridge, MA: MIT Press.
- CALVILLO-GAMEZ, E.H., P. Cairns and A.L. Cox (2010) 'Assessing the core elements of the gaming experience', in R. Bernhaupt (ed.) *Evaluating User Experiences in Games*, New York: Springer, pp. 47–71.
- CARNAGEY, N.L. and C.A. Anderson (2005) 'The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior', *Psychological Science* 16: 882–9.
- CARNAGEY, N.L., C.A. Anderson and B.J. Bushman (2007) 'The effect of video game violence on desensitization to real-life violence', *Journal of Experimental Social Psychology* 43: 489–96.
- COLWELL, J., C. Grady and S. Rhaiti (1995) 'Computer games, self-esteem, and gratification of needs in adolescents', *Journal of Community and Applied Social Psychology* 5: 195–206.
- CSIKSZENTMIHALYI, M. (1990) *Flow: The Psychology of Optimal Experience*, New York: Harper and Row.
- DE KORT, Y.A.W. and W.A. IJsselsteijn (2008) 'People, places, and play: a research framework for digital game experience in a socio-spatial context', *ACM Computers in Entertainment* April/June.
- DE KORT, Y.A.W., W.A. IJsselsteijn and K. Poels (2007) 'Digital games as social presence technology: development of the social presence in gaming questionnaire', *PRESENCE 2007 Proceedings*, Barcelona, Spain, pp. 195–203.
- ERMI, L. and F. Mäyrä (2005) 'Fundamental components of the gameplay experience: analysing immersion', in S. de Castell and J. Jenson (eds) *Changing Views: Worlds in Play*, Selected papers of the 2005 Digital Games Research Association's Second International Conference. Vancouver, Canada.
- GAJADHAR, B., Y.A.W. de Kort and W.A. IJsselsteijn (2008) 'Shared fun is doubled fun: player enjoyment as a function of social setting', in P. Markopoulos, B. de Ruyter, W. IJsselsteijn and D. Rowland (eds.) *Fun and Games*, New York: Springer, pp. 106–17.
- GILLEADE, K.M. and A. Dix (2004) 'Using frustration in the design of adaptive videogames', *ACM ACE 2004*: 228–232.
- GREEN, C.S. and D. Bavelier (2003) 'Action video games modifies visual selective attention', *Nature* 423: 534–7.
- JANSZ, J. and L. Martens (2005) 'Gaming at a LAN event: the social context of playing video games', *New Media & Society* 7(3): 333–55.
- JANSZ, J. and M. Tanis (2007) 'Appeal of playing online first person shooter games', *Cyberpsychology & Behavior* 10(1): 133–6.
- JENNET, C., A.L. Cox, P. Cairns, S. Dhoparee, A. Epps, T. Tijs et al. (2008) 'Measuring and defining the experience of immersion in games', *International Journal of Human-Computer Studies* 66(9): 641–61.
- KEEKER, K., R. Pagulayan, J. Sykes and N. Lazzaro (2004) 'The untapped world of video games', *ACM CHI 2004*: 1610–11.
- KELLER, J. and H. Bless (2008) 'Flow and regulatory compatibility: an experimental approach to the flow model of intrinsic motivation', *Personality and Social Psychology Bulletin* 34(2): 196–209.
- KLIMMT, C. (2003) 'Dimensions and determinants of the enjoyment of playing digital games: a three-level model', in M. Copier and J. Raessens (eds.) *Level Up: Digital Games Research Conference*, Utrecht: Utrecht University.

KLIMMT, C., T. Hartmann and A. Frey (2007a) 'Effectance and control as determinants of video game enjoyment', *Cyberpsychology & Behavior* 10(6): 845–74.

KLIMMT, C., A.S. Rizzo, P. Vorderer, J. Koch and T. Fischer (2007b) 'Suspense as dimension of video game enjoyment'. Paper presented to the Game Studies special interest group at the annual conference of the International Communication Association, San Francisco, CA.

KLIMMT, C., A. Rizzo, J. Koch and T. Fischer (2009) 'Experimental evidence for suspense as determinant of video game enjoyment', *CyberPsychology and Behavior* 12(1): 29–31.

LIM, S. and J.R. Lee (2009) 'When playing together feels different: effects of task types and social contexts on physiological arousal in multiplayer online gaming contexts', *Cyberpsychology & Behavior* 12(1): 59–61.

LUNT, P. and S. Livingstone (1996) 'Rethinking the focus group in media and communications research', *Journal of Communication* 46(2): 79–98.

MERTON, R.K. (1987) 'The focused interview and focus groups: continuities and discontinuities', *Public Opinion Quarterly* 51: 550–6.

MURRAY, J.H. (1998) *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, Cambridge, MA: MIT Press.

POELS, K., W.A. Ijsselstein, Y.A.W. de Kort and B. Van Iersel (2010) 'Digital games, the aftermath: identification and measurement of post-game experiences', in R. Bernhaupt (ed.) *Evaluating User Experiences in Games*, New York: Springer, pp. 149–64.

RAVAJA, N., M. Salminen, J. Holopainen, T. Saari, J. Laarni and A. Järvinen (2004) 'Emotional response patterns and sense of presence during video games: potential criterion variables for game design', *Proceedings of the Third Nordic Conference on Human-Computer Interaction*, Tampere, Finland, pp. 339–47.

RAVAJA, N., T. Saari, M. Turpeinen, J. Laarni, M. Slamminen and M. Kivikangas (2006) 'Spatial presence and emotions during video game playing: does it matter with whom you play?', *Presence: Teleoperators and Virtual Environments* 15: 381–92.

RYAN, R.M., C.S. Rigby and A. Przybylski (2006) 'The motivational pull of video games: a self-determination theory approach', *Motivation and Emotion* 30: 347–64.

SHERRY, J.L. (2001) 'The effects of violent video games on aggression: a meta-analysis', *Human Communication Research* 30: 361–75.

SHERRY, J.L. (2004) 'Flow and media enjoyment', *Communication Theory* 14(4): 328–47.

SHERRY, J.L., K. Lukas, B. Greenberg and K. Lachlan (2006) 'Video game uses and gratifications as predictors of use and game preference', in P. Vorderer and J. Bryant (eds.) *Playing Video Games – Motives, Responses, and Consequences*, Mahwah, NJ: Lawrence Erlbaum, pp. 213–24.

SWEETSER, P. and P. Wyeth (2005) 'GameFlow: a model for evaluating player enjoyment in games', *ACM Computers in Entertainment* 3(3): 1–24.

VORDERER, P., C. Klimmt and U. Ritterfeld (2004) 'Enjoyment: at the heart of entertainment', *Communication Theory* 14(4): 388–408.

VORDERER, P., J. Bryant, K. Pieper and R. Weber (2006) 'Playing video games as entertainment', in P. Vorderer and J. Bryant (eds.) *Playing Video Games: Motives, Responses, and Consequences*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 1–8.

WEIBEL, D., B. Wissmath, S. Habegger, Y. Steiner and R. Groner (2008) 'Playing online games against computer- vs. human-controlled opponents: effects on presence, flow and enjoyment', *Computers in Human Behavior* 24: 2274–91.

WILLIAMS, D. (2006) 'A brief social history of game play', in P. Vorderer and J. Bryant (eds.) *Playing Video Games: Motives, Responses, and Consequences*, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 197–212.

WILLIAMS D., M. Consalvo, S. Caplan and N. Yee (2009) 'Looking for gender: gender roles and behaviors among online gamers', *Journal of Communication* 59: 700–25.

YEE, N. (2002) *Facets: 5 Motivation Factors for Why People Play MMORPGs*, available at: <http://www.nickyee.com/facets/home.html> (accessed April 2007).

YEE, N. (2006) 'Motivations for play in online games', *Cyberpsychology & Behavior* 9(6): 772–5.