

" It is always a lot of fun! "

Exploring Dimensions of Digital Game Experience using Focus Group Methodology

Karolien Poels
Eindhoven University of Technology
Game Experience Lab, HTI Group
Den Dolech 2, 5600 MB, Eindhoven
The Netherlands
k.poels@tue.nl

Yvonne de Kort
Eindhoven University of Technology
Game Experience Lab, HTI Group
Den Dolech 2, 5600 MB, Eindhoven
The Netherlands
y.a.w.d.kort@tue.nl

Wijnand IJsselsteijn
Eindhoven University of Technology
Game Experience Lab, HTI Group
Den Dolech 2, 5600 MB, Eindhoven
The Netherlands
w.a.ijsselsteijn@tue.nl

ABSTRACT

This paper focuses on digital game experience: the feelings and experiences people have when they play digital games. Digital game experience is not a one-dimensional concept. Great variety exists in game genres and game players, and game experiences will differ accordingly. To date, game experience is studied in a rather fragmented way. As such, the field still lacks a common vocabulary and a shared taxonomy of the different dimensions of game experience. In this paper we describe a focus group study and present a tentative, but comprehensive categorisation of game experience. Focus groups with various types of gamers were organised to capture a full first-hand account of game experiences and second, findings were discussed in an expert meeting in which empirical findings were consolidated with existing theoretical findings. The categorisation bears relevance for both game theorists and game developers wanting to get to the heart of digital game experience.

Categories and Subject Descriptors

[J.4 SOCIAL AND BEHAVIORAL SCIENCES]

General Terms

Design, Human Factors

Keywords

Digital game experiences, focus group methodology, categorisation, emotions

1. INTRODUCTION

It is impossible to come up with a single word or concept that embraces what people feel or experience when playing digital games. For example, people can have great *fun* when playing virtual tennis on the Nintendo Wii console, whereas feelings of *frustration* can also come into play when people continuously hit the ball out. Some people enjoy playing online MMORPG's like World of Warcraft which render the player into a *immersive state* by getting him or her fully drawn into a fantasy world. Others prefer social games like the quiz game Buzz or the karaoke game Singstar which are oriented towards pure amusement, and *enjoyment in a social context*. Given this variety in game genres and game players, game experience has to be studied as a multi-dimensional and multi-layered concept.

In spite of the rise in academic game research, the actual experience of playing digital games still is underrepresented in the gaming literature. Existing studies on game experience have mostly focused on a single dimension of game experience, such as flow [14] or immersion [5; 3]. As such, current literature on game experience is fragmented. We summarise some recent studies below.

Sweetser and Wyeth [14] adapted the *flow* concept [4] into a game 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 [14] argument of equating flow to game enjoyment might be limited. First, game enjoyment represents a broader set of experiences besides flow. Second, their argument is still tenuous since they did not study how and whether players actually experience more flow in highly rated games.

Emri and Mäyrä [5] studied *immersion* in the game world as experienced while playing. More concretely, they proposed a model consisting of three different components of immersion: sensory, challenge-based and imaginative immersion (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 structure of the game.

Brown and Cairns [3] developed a slightly different view on what immersion in a gaming context means. They performed a number of in-depth interviews with gamers to find out what they mean when they talk about immersion. They analysed their data using grounded theory, and found that to most players, immersion describes the degree of involvement within a game. Accordingly, Brown and Cairns [3] describe 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.

Klimmt [8] proposes that 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 in to an alternative reality*, or a fictional world.

Notwithstanding the fact that the studies cited above provide significant input when deliberating on a comprehensive categorisation of game experience, they do miss a shared vocabulary or common understanding of digital game experience. Moreover, in our opinion, current studies have overlooked two critical dimensions of game experience. First, digital gaming often takes place in *social contexts* (e.g., game competitions between friends or online gaming). Previous studies have already suggested that the specific nature of a social context may significantly influence players' game experience [2]. We think this area needs further exploration. Second, current game experience studies do not devote much attention to negative game experiences. However, *negative experiences* such as in-game frustration [6] or tension are presumably essential in order for the overall game experience to work.

One of the main challenges facing the gaming research community is a lack of a coherent and fine-grained set of methods and tools that enable the measurement of entertainment experiences in a sensitive, reliable and valid manner. We therefore see the need to develop a self-report measure of game experience, covering the broad spectrum of experiences induced by digital games [7]. However, it is impossible to develop such an instrument without a comprehensive conceptualisation of game experience that can serve as a framework for formulating self-report items.

In the present study, we take a qualitative and exploratory approach in investigating the full account of digital game experiences. We employ focus group methodology which in itself is an innovative approach to study game related behaviour. To the best of our knowledge, within academic gaming literature the application of focus group methodology has been limited. We only found two other focus group studies [2; 13]. Bracken et al. [2] used focus group methodology to investigate whether online gamers experience different types of presence like spatial, social, and co-presence. Their results clearly illustrate that all three types of presence sensations are applicable to online gaming. Further, Miller et al. [13] applied focus groups to explore female preferences for specific types of game designs. Given the diversity of individual differences with respect to play styles [1] or motivations to play games [15], focus groups can provide in-depth, contextual, and motivational insights into the specific experiences of different types of gamers.

The objective of our study was twofold. First, we wanted to get a

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Conference '04, Month 1–2, 2004, City, State, Country.
Copyright 2004 ACM 1-58113-000-0/00/0004...\$5.00.

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-conceptualisations of game experience. Focus groups further enabled us to explore differences in game experiences according to player type, game genre, and context of play. We addressed both in-game and post-game experience. Second, we aimed at unravelling the different dimensions of game experience and develop a categorisation. We discussed theoretical and empirical findings in an expert meeting and consolidated these into a categorisation of digital game experience.

2. FOCUS GROUPS

2.1 Focus group methodology

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 [11]. In practice, focus group methodology typically involves a series of group interviews about a given topic or phenomenon guided by a moderator.

One of the major strengths of focus group methodology is its *exploratory nature*. Focus groups enable the researcher to get to know their target audience in detail without the need for a priori assumptions or research questions. Moreover, focus groups can serve as a source of new ideas and hypotheses [12]. 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. Related to this, focus group methodology lends itself for *interpretation* of the experiences and thoughts reported by the target audience. As such, it enables researchers to get a clearer view on the *why* of behaviour [11].

2.2 Procedure

We organized four focus groups with gamers. The composition of the focus groups differed according to several variables such as game frequency, age, and occupational status. Two focus groups (FG1 and FG2) included infrequent gamers (i.e., people who game at least once a month), two focus groups (FG3 and FG4) consisted of frequent gamers (i.e., people who game at least once a week). Participants' ages ranged from 19 to 37 years. FG1 had five participants of which two were female. FG2 consisted of three male participants. FG3 and FG4 both had four male participants. 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. Each focus group took about 90 minutes and participants were rewarded 10 € for their participation.

The focus groups were structured in the following way:

Introductory round: First, 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 game 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. Participants had to write down these experiences on Post-It notes. We also asked them to indicate their most favourite game and the game they had played last. After this, all Post-It's 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. Accordingly, the three core question were fixed but 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?, (2) What do you experience or feel *while* gaming? (i.e., in-game experiences), (3) What do you experience or how do you feel *after* gaming? (i.e., post-game experiences) The moderator further probed the experiences that were reported by each participant individually. Additional Post-It's were used when new experiences were mentioned.

Group task: At the end of the group discussion participants were asked to cluster and rank all game experiences that were reported on the Post It 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 aided us in structuring the diversity of experiences mentioned by the participants.

All focus group interviews were recorded and transcribed.

2.3 Results

The results section is structured according to the three core questions that were posed in the group discussion.

2.3.1.1.1 Question 1: On what occasions do you typically start gaming?

The occasions in which participants typically start gaming varied considerably. A substantial amount of them reported that they started playing a game as a pastime to overcome boredom.

...when I am feeling bored or when I don't feel like studying... (Female participant, FG1, 21 years)¹

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

Related to this, participants said that they often started gaming upon coming home after a stressful day, mostly school or work related. Playing games helped them 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 anymore, I can do what I choose and what I like... (male participant, FG4, 31 years)

Another occasion 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)

One female participant reported a combination of the social and the boredom occasion.

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)

Some of the more frequent gamers reported that they played 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 play short games when feeling bored or after a busy day. In contrast, long games are 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 (MMORPG) 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 First Person Shooter (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 organising competitions between friends. These activities are planned weeks beforehand.

A couple of times a year, we organise "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)

2.3.1.1.2 Question 2: What do you experience or feel while gaming?

¹ All citations were translated from Dutch.

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).

Experiences of fun were often related to **game immersion**. This means, the participants mentioned experiences like 'loosing connection with the outside world', 'forgetting everything around you', and 'being fully occupied with the game'.

Feeling happy is linked with loosing 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 realising what happens outside that world. (Male participant, FG4, 34 years)

Other experiences were more closely linked to **imaginative immersion**. For example, 'being creative', 'exploring the game world'. One of the female participants linked these experiences to the fun factor:

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)

When the more frequent gamers reported on the 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 MMORPG it is all about the atmosphere and the beautiful scenes. You get yourself fully drawn in. (Male participant, FG3, 29 years)

Some participants reported that they were not interested in being immersed in a fantasy world, but they said they enjoyed the freedom to explore a game world, 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 simply driving through all the streets in the game. (Male participant, FG4, 34 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 was 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 clear resemblance to the concept of **flow**.

"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 loose: 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).

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)

Conversely, 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)

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 participants, 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, FG2, 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 in 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)

2.3.1.1.3 Question 3: What do you experience after gaming?

With regard to experiences after gaming, results were mixed. Most of the participants said that 'time had gone by faster than expected'.

I often start gaming on Saturday, right after I wake up, around 10 in the morning. It often happens that my wife gets back from work at six in the evening and that I am still there in my boxer shorts, without having eaten anything during that day. For me, it feels like only half an hour has passed. (Male participant, FG4, 34 years)

When probing whether this led to feelings of **regret** or **satisfaction**, the answers varied according to personal and situational factors. Frequent gamers were quite unanimous with respect to their experiences after game play. In general, they did not see it as a waste of time and often had the feeling of having done something really useful. Only in very specific situations they reported the experience of **disappointment** or **regret**.

If I play online games I never experience it as a waste of time. When you are cooperating in a team and one member gives up, it is a pity. Then I feel disappointed. (Male participant, FG3, 23 years)

Gaming is never a waste of time. Watching TV is much more a waste of time, because it is more passive, you are not involved in what happens. (Male participant, FG3, 28 years)

...Only if you have been gaming for quite a long time and you did not achieve anything, I often regret having spent so much time on it. Especially when I have more urgent things to do. (Male participant, FG3, 29 years)

For less frequent gamers, regret depended on the situation in which they played the game. More concretely, **regret** or **bad feelings** were greater if the game play had restrained them from doing more urgent or more useful activities.

I often feel bad if I wasted my time with playing a game. However, if it is a lazy Saturday afternoon and you have nothing better to do it doesn't matter. Then I even find it useful to play a game. (Female participant, FG1, 21 years)

Sometimes when you are studying and you take a short break, you forget the time and then you feel bad that you have wasted your precious time at playing stupid games. (Female participant, FG1, 21 years)

If the weather is nice, then I regret that I didn't spend my time outside. I find it a pity then. However, I did have fun, so it is not that bad after all. (Male participant, FG2, 28 years)

Some participants reported that they anticipated those negative experiences. For example, one participant explicitly stated that he only quit gaming when he was in a favourable position. This way, he reported, he always has a good feeling after gaming. Another participant said he would not start gaming when he had more urgent things to do. Yet another mentioned only playing short games in order to prevent that he would spend his whole evening playing games.

3. TOWARDS A COMPREHENSIVE CATEGORISATION OF DIGITAL GAME EXPERIENCE

After the focus groups we organised an expert meeting that was aimed at combining knowledge and insights gathered from both theoretical findings and focus group explorations, and consolidating these into a tentative model of game experience.

Five game researchers participated in this meeting. These included psychologists and experts on measurement development as well as the state of the art in theories of game experience (two females, three males). Two of them are very frequent gamers themselves, the remaining three should be labelled infrequent gamers. This provided a solid base for determining the tentative core dimensions of digital game experience.

The expert meeting started with an individual and personal reflection of each researcher on what they saw as important game experiences (both in-game and post-game experiences). Similar to

the procedure of the focus groups, the experts wrote these down on Post-Its. Subsequently, memos were added based on theoretical considerations and the results from the focus group meetings. We then engaged in an interactive and iterative session, organising all Post-Its on a whiteboard, according to centrality and similarity, thus creating a comprehensive categorisation of game experience dimensions. Our final categorisation is presented in the table below.

Table 1. A comprehensive categorisation of digital game experience

Dimension	In-game experiences	Post-game experiences
ENJOYMENT	<i>fun, amusement, pleasure, relaxation</i>	<i>energised, satisfaction, relaxation</i>
FLOW	<i>concentration, absorption, detachment</i>	<i>jetlag, lost track of time, alienation</i>
IMAGINATIVE IMMERSION	<i>absorbed in the story, empathy, identification</i>	<i>returning to the real world</i>
SENSORY IMMERSION	<i>presence</i>	<i>returning to the real world</i>
SUSPENSE	<i>challenge, tension, pressure, hope, anxiety, thrill</i>	<i>release, relief, exhausted, euphoria</i>
COMPETENCE	<i>pride, euphoria, accomplishment</i>	<i>pride, euphoria, accomplishment, satisfaction</i>
NEGATIVE AFFECT	<i>frustration, disappointment, irritation, anger</i>	<i>regret, guilt, disappointment, anger, revenge</i>
CONTROL	<i>autonomy, power, freedom</i>	<i>power, status</i>
SOCIAL PRESENCE	<i>enjoyment with others, being connected with others, empathy, cooperation</i>	<i>accomplishment in a team, bonding</i>

Aiming to stay as close as possible to gamers' first-hand experiences, we distilled most dimensions directly from the focus groups, except for suspense. The word 'suspense' itself was not used by the gamers in our focus groups. However, suspense is studied in current game literature as an important component of game enjoyment [9]. Moreover, experiences typically involving suspense (e.g., tension, pressure, relief, etc.) were often mentioned. Hence, we choose the term Suspense for these experiences.

We distinguished between imaginative and sensory immersion. Although sensory immersion was not explicitly reported in our focus groups, it did surface in earlier interviews with gamers [2; 5], and does appear to be different from the experiences reported under imaginative immersion. Since our goal was to arrive at a

comprehensive categorisation, it was decided to add this component.

4. DISCUSSION AND CONCLUSION

We presented a study on digital game experience in which we combined theoretical considerations with game experiences surfaced through focus groups. This qualitative and exploratory approach has several advantages. We were able to hear and study first-hand game experiences, expressed by the 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. In contrast to existing, fragmented literature, this study presented a more complete overview of how it feels to play digital games. Moreover, we summarised our findings into a tentative but comprehensive categorisation.

We are fully aware that our categorisation is still tentative and 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 categorisation as it stands now bears relevance for both game theorists and game developers. Concretely, we are currently employing this categorisation as a frame of reference in the development of a self-report measures of game experiences, comprising the Game Experience Questionnaire (GEQ) [7], and the Social Presence in Gaming Questionnaire [10]. Additionally, we envision applications of this categorisation in experimental game experience studies. For example, if specific dimensions need to be manipulated, our categorisation can aid in determining which concrete experiences or feelings must be focused upon. This categorisation can also serve as a starting point or inspiration source in developing a shared understanding and vocabulary of different game experience dimensions. As we discussed earlier, current gaming literature still lacks a common conceptualisation of game experience. 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 categorisation as a tool or a checklist to design games that are able to evoke a rich spectrum of game experiences. The verbalisations of gamers, cited in our result section, can provide game developers with interesting insights in how and when gamers feel and experience certain emotions as they engage in playing games. An ultimate application for game developers would be to design games in which the game content can be dynamically changed depending on the player's experiences. This could lead to an exiting new genre of experientially adaptive games.

To summarise, digital game experience is a multi-dimensional and multi-layered concept. Actual game experiences range from very broad positive and negative emotions to experiences that are more specifically related to play or to fantasy and alternative realities. First-hand feelings, as we explored in this paper, enabled us to

make a categorisation of dimensions of digital game experience which form the heart of playing digital games.

5. ACKNOWLEDGEMENTS

We gratefully acknowledge financial support from the European Commission's Framework 6 IST programme. In particular, the work reported here has been supported by the FUGA project (part of the IST – New and Emerging Science and Technology programme) and the Games@Large project (part of the IST – Networked Audio-Visual Systems and Home Platforms programme). We thank Brian Gajadhar for his assistance in running part of the focus groups.

6. REFERENCES

- [1] Bartle, R.A. (1996). Hearts, clubs, diamonds and spades: players who suit MUDs. <http://www.mud.co.uk/richard/hcds.html>.
- [2] Bracken, C.C., Lange, R.L., and Denny, J. (2005). Online video games and gamers' sensations of spatial, social, and co-presence. Proceedings of the annual FuturePlay conference
- [3] Brown, E. and Cairns, P. (2004). A grounded investigation of game immersion. ACM CHI 2004, 1297-1300.
- [4] Csikszentmihalyi, M. (1990). Flow. The Psychology of Optimal Experience. New York: Harper & Row.
- [5] Ermi, L. and Mäyrä, F. (2005). Fundamental components of the gameplay experience: Analysing immersion. In: S. de Castell & J. Jenson (eds.), Changing Views: Worlds in Play. Selected papers of the 2005 Digital Games Research Association's Second International Conference.
- [6] Gilleade, K.M. and Dix, A. (2004). Using frustration in the design of adaptive videogames. ACM ACE 2004, 228-232.
- [7] IJsselsteijn, W.A., de Kort, Y.A.W., & Poels, K. (in preparation). Development of the Game Experience Questionnaire (GEQ).
- [8] Klimmt, C. (2003). Dimensions and determinants of the enjoyment of playing digital games: a three-level model. In: Copier, M., and Raessens, J. (Eds.), Level up: Digital games research conference. Utrecht University, Faculty of Arts.
- [9] Klimmt, C. , Rizzo, A.S., Vorderer, P., Koch, J., and Fischer, T. (2007). 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.
- [10] De Kort, Y.A.W., IJsselsteijn, W.A., & Poels, K. (submitted). Digital Gaming Devices as Social Presence Technology: Development of the Social Presence in Gaming Questionnaire (SPGQ).
- [11] Lunt, P. & Livingstone, S. (1996). Rethinking the focus group in media and communications research. Journal of Communication, 46(2), 79-98.
- [12] Merton, R.K. (1987). The focused interview and focus groups: continuities and discontinuities. Public Opinion Quarterly, 51, 550-556.
- [13] Miller, L. et al. (1996). Female participants' Preferences in Software Design: Insights from a Focus Group. Interpersonal Computing and Technology, 4(2), 27-36.
- [14] Sweetser, P & Wyeth, P. (2005). GameFlow: A model for evaluating player enjoyment in games. ACM Computers in Entertainment, 3 (3), 1-24.
- [15] Yee, N. (2002). *Facets: 5 motivation factors for why people*