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Conference Paper · January 2005

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Fundamental Components of the Gameplay Experience: Analysing Immersion

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ABSTRACT

This paper presents a gameplay experience model, assesses its potential as a tool for research and presents some directions for future work. The presented model was born from observations among game-playing children and their non-player parents, which directed us to have a closer look at the complex nature of gameplay experience. Our research led into a heuristic gameplay experience model that identifies some of the key components and processes that are relevant in the experience of gameplay, with a particular focus on immersion. The model includes three components: sensory, challenge-based and imaginative immersion (SCI-model). The classification was assessed with self-evaluation questionnaires filled in by informants who played different popular games. It was found that the gameplay experiences related to these games did indeed differ as expected in terms of the identified three immersion components.

Keywords

gameplay, experience, immersion

INTRODUCTION: PLAYERS, EXPERIENCES AND FUN

There has been a relative boom of games research that has focused on the definition and ontology of games, but its complementary part, that of research into the gameplay experience has not been adopted by academics in a similar manner. This is partly due to the disciplinary tilt among the current generation of ludologists: a background in either art, literary or media studies, or in the applied field of game design, naturally leads to research in which the game, rather than the player, is the focus of attention. Yet, the essence of a game is rooted in its interactive nature, and there is no game without a player. The act of playing a game is where the rules embedded into the game's structure start operating, and its program code starts having an effect on cultural and social, as well as artistic and commercial realities. If we want to understand what a game is, we need to understand what happens in the act of playing, and we need to understand the player

Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play.

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and the experience of gameplay. In this paper we discuss the ways in which the gameplay experience can be conceptualised, provide a model that organises some of its fundamental components, and conclude with an assessment of the model with some directions for further research.

Human experiences in virtual environments and games are made of the same elements that all other experiences consist of, and the gameplay experience can be defined as an ensemble made up of the player's sensations, thoughts, feelings, actions and meaning-making in a gameplay setting. Thus it is not a property or a direct cause of certain elements of a game but something that emerges in a unique interaction process between the game and the player. This has also led to suggestions that games are actually more like artefacts than media [15]. Players do not just engage in ready-made gameplay but also actively take part in the construction of these experiences: they bring their desires, anticipations and previous experiences with them, and interpret and reflect the experience in that light. For example, a certain gameplay session might be interpreted as fun, challenging and victorious until one hears that a friend of hers made a better record effortlessly, after which it might be reinterpreted more like a waste of time. Experiences are also largely context dependent: the same activity can be interpreted as highly pleasant in some contexts but possibly unattractive in other kinds of settings [2]. The social context is central in gameplay experiences, which was also illustrated by the example above.

Looking at the discourses of current digital game cultures, 'gameplay' is used to describe the essential but elusive quality that defines the character of a game as a game, the quality of its 'gameness'. In their book on game design, Rollings and Adams decline to define the concept, because, according to them, gameplay is "the result of a large number of contributing elements" [26]. Yet, anyone who plays games long enough will form their own conception of bad or good gameplay on the basis of their experience. This experience is informed by multiple significant game elements, which can be very different in games from different genres, as well as by the abilities and preferences of the players. This starting point can further be illustrated by a quote from Chris Crawford:

I suggest that this elusive trait [game play] is derived from the combination of pace and cognitive effort required by the game. Games like TEMPEST have a demonic pace while games like BATTLEZONE have far more deliberate pace. Despite this difference, both games have good game play, for the pace is appropriate to the cognitive demands of the game. [4]

This definition actually translates gameplay into a particular balanced relation between the level of challenge and the abilities of the player. Challenge consists of two main dimensions, the challenge of speed or 'pace' and 'cognitive challenges'. The quality of gameplay is good when these challenges are in balance with each other, and what the appropriate balance is obviously depends on the abilities of the player. On the other hand, one of the most influential theories of fun and creative action, the flow theory by Mihaly Csikszentmihalyi [6], identifies the 'flow state' as a particular successful balance of the perceived level of challenge and the skills of the person. In this highly intensive state, one is fully absorbed within the activity, and one often loses one's sense of time and gains powerful gratification. Digital games are generally excellent in providing opportunities for flow-like experiences since the challenges they present are often gradually becoming more demanding and thus players end up acting at the limits of their skills.

In addition, the feedback given to the player is immediate. The activity of playing a game is a goal in itself.

People play games for the experience that can only be achieved by engaging in the gameplay. In other words, a game's value proposition is in how it might make its players think and feel [19] and 'fun' is the ultimate emotional state that they expect to experience as a consequence of playing [1]. Expectations and enjoyment are shaped by the schemas that players have. A player can for example recognize the genre of a game by observing various genre-typical details and then use her schema of that genre to interpret those details. [8] Brown and Cairns [3] have noted that players choose games they play according to their mood, and it is to be expected that people especially seek games that elicit optimal emotional responses or response patterns [25]. Thus, when choosing to play a certain game, one might anticipate it to create certain types of experiences.

However, fun and pleasure are complex concepts. Playing games does not always feel fun: on the contrary, it quite often appears to be stressful and frustrating. Experiences that are usually classed as unpleasant can be experienced as pleasurable in certain contexts [7]. So, what makes e.g. failing fun? Klimmt [17] has applied Zillmann's excitation transfer theory and proposed that the suspense, anxiety and physical arousal elicited by playing are interpreted as positive feelings because players anticipate a resolution and a closure such as winning the game or completing the task. When players manage to cope with a given situation successfully, the arousal is turned into euphoria, and the players experience this kind of cycles of suspense and relief as pleasurable. Klimmt has constructed a three-level model of the enjoyment of playing digital games, the first level of which consists of the interactive input-output loops, the second of cyclic feelings of suspense and relief, and the third is related to the fascination of a temporary escape into another world.

Grodal [13] regards digital games as a distinctive medium because they allow what he calls "the full experiential flow" by linking perceptions, cognitions, and emotions with first-person actions. The player must have and develop certain skills, both motor and cognitive, in order to engage in gameplay. It is widely acknowledged that digital gameplay experiences are based on learning and rehearsing [12, 18], and according to Grodal [13] it is the aesthetic of repetition that characterises pleasures of game playing. In the first encounter with a new game the player experiences unfamiliarity and challenge and starts to explore the game. After enough effort and repetitions the player can get to a point where she masters the game and game playing eventually reaches the point of automation and does not feel so fun any longer. Thus, games can be considered as puzzles that the players try to solve by investigating the game world [23].

When playing games, it is not enough to just sit and watch and possibly activate some cognitive schemas. Instead, the player must become an active participant. When successful, this type of participation leads to strong gameplay experiences that can have particularly powerful hold on the player's actions and attention. This basic character of gameplay becomes even clearer when we study the way immersion is created in playing a game.

IMMERSION AS A COMPONENT OF THE GAMEPLAY EXPERIENCE

Pine and Gillmore [24] have categorised different types of experiences according to two dimensions: participation and connection. The dimension of participation varies from active to

passive participation and the dimension of connection varies from absorption to immersion. Absorption means directing attention to an experience that is brought to mind, whereas immersion means becoming physically or virtually a part of the experience itself. Four realms of experience can be defined with these dimensions: entertainment (absorption and passive participation), educational (absorption and active participation), aesthetic (immersion and passive participation) and escapist (immersion and active participation). In terms of this categorisation, gameplay experiences can be classified as escapist experiences, where in addition to active participation, also immersion plays a central role.

Furthermore, the concept of immersion is widely used in discussing digital games and gameplay experiences. Players, designers and researchers use it as well, but often in an unspecified and vague way without clearly stating to what kind of experiences or phenomena it actually refers to. In media studies, the concept of ‘presence’ has been used with an aim to assess the so-called ‘immersivity’ of the system. There are different ways to define the sense of presence, but on the whole, the concept refers to a psychological experience of non-mediation, i.e. the sense of being in a world generated by the computer instead of just using a computer [20]. As immersion can be defined as “the sensation of being surrounded by a completely other reality [...] that takes over all of our attention, our whole perceptual apparatus” [22] immersion and presence do not actually fall very far from each other, and are in fact often used as synonyms. However, since the term ‘presence’ was originally developed in the context of teleoperations [21], it also relies heavily on the metaphor of transportation. In the context of digital games, we prefer using the term ‘immersion’, because it more clearly connotes the mental processes involved in gameplay.

It is often taken for granted that a bigger screen and a better quality of audio equal greater immersion [23]. It is of course likely that the audiovisual implementation of the game has something to do with immersive experiences, but it is by no means the only or even the most significant factor. McMahan [21] has listed three conditions to be met in order to create a sense of immersion in digital games: the conventions of the game matching the user expectations, meaningful things to do for the player, and a consistent game world. Genre fiction encourages players to form hypotheses and expectations and, according to Douglas and Hargadon [8], pleasures of immersion derive from the absorption within a familiar schema. On the other hand, meaningful play as defined by Salen and Zimmerman [27] occurs when the relationships between actions and outcomes are both discernable and integrated. Discernability indicates letting the player know what happens when they take action, and integration means tying those actions and outcomes into the larger context of the game. And just like any manipulation, acting in the game world requires relevant functionality and ways to access this functionality (i.e., usability) [14]. Thus, the audiovisual, functional and structural playability as defined by Järvinen, Heliö and Mäyrä [16] can be seen as prerequisites for gameplay immersion and rewarding gameplay experiences. On a very basic level, it can be argued that it is the basic visual-motor links that enable experiences of immersion even in games in which the graphics are not very impressive [13, 17]. The increasing demand on working memory also seems to increase immersion [13]. For example, increase in the difficulty level may cause increase in the feeling of presence [25].

Brown and Cairns [3] have presented a classification that categorises immersion into gameplay in three levels of involvement. Ranging from ‘engagement’, via ‘engrossment’ to ‘total immersion’, their model is useful in pointing out how the amount of involvement may fluctuate.

But this approach nevertheless fails to adequately respond to the qualitative differences between different modes of involvement; which is apparent also in the clear individual preferences different players have in different game types or genres. Brown and Cairns [3] see total immersion as a synonym for presence. They agree that immersion seems to have many common features with flow experiences. However, in the context of digital games flow-like phenomena seem only to be fleeting experiences, which in turn suggests that they are something different from flow as traditionally conceived. Thus, the flow-like experiences related to gameplay could be called ‘micro-flow’ [2] or ‘gameflow’ [16], for example.

Funk, Pasold and Baumgardner [11] have created a gameplay experience questionnaire in order to investigate the effects of exposure to fantasy violence. They developed a measure that concentrates on what they call ‘psychological absorption’, but it does not differentiate between different kinds of gameplay experiences even though the theoretical model presented suggests that there are at least two kinds of experiences: absorption and flow. We argue that in order to understand what games and playing fundamentally are, we need to be able to make qualitative distinctions between the key components of the gameplay experience, and also relate them to various characteristics of games and players. In this paper we approach immersion as one of the key components of the gameplay experience and analyse its different aspects.

The AtTRACTIONS of Digital Games

The starting point of our research was the twofold perspective we gained in 2003 while interviewing Finnish children who actively played digital games alongside with their parents, who mostly did not play such games themselves [9]. The parents expressed concern because they thought that their children became emotionally too intensely immersed, or too involved with the game fiction, while playing. They agreed with the common conception that it was particularly the realistic and high-quality graphics and audio of contemporary games that explained the immersive powers. On the contrary, the children thought that the emotional immersion and involvement in fiction was typically stronger for them while reading a good book or while watching a movie. They emphasised the role of the characters and storylines in this kind of an experience, while they also acknowledged often becoming immersed in games, but in different ways than in literature or cinema, in the case of which emotional identification or engrossment was more common for them than in games.

Well, you immerse yourself more into a book, I think. I don't know many reasons for that, but at least I lose myself more into books than in games. In games I usually only just play, or then I sort of follow the plot, but in books it is kind of more exciting, because the plot is having the main part, and in games the main part is moving things yourself and such, in games the plot is just secondary. (Boy, 12 years.)

When discussing games, children stated that the main difference between games and novels or movies was the games’ interactivity: the opportunity to make decisions, take actions and have an effect on the gameplay. Some of them also considered this to be the most immersive aspect of games.

In movies I do not identify with the main character at all. I just watch what he does. But in a book, if I read about the actions of some main character, then I identify with him as I would be the character myself. Or at least I immerse myself more into it. But in a game

you immerse into it most of all, because you actually do things with that guy, with that character, most of all. (Boy, 11 years.)

Another thing that clearly separated children's experiences with games from their experiences with books and movies was the social quality of gameplay. Children often played together with their friends and siblings and games were notable discussion topics on schoolyards etc.

When in it [a book] you can go and figure with your own brain like, ok, now it [the character] is doing this and that. [...] Yes it [a game] is a bit different, as you can say to your friend that hey, look this is doing this and that, but in books you cannot really, because you are not reading with your friend. (Girl, 10 years.)

As we were curious about these different ways of perceiving game "immersion", we studied the responses further and analysed the children's accounts of playing games and the different holding powers they had recognized in games in order to shed some light on the structure of the experience. In the light of the interviews, the pleasures of gameplay derive from several different sources [10]; see Figure 1.

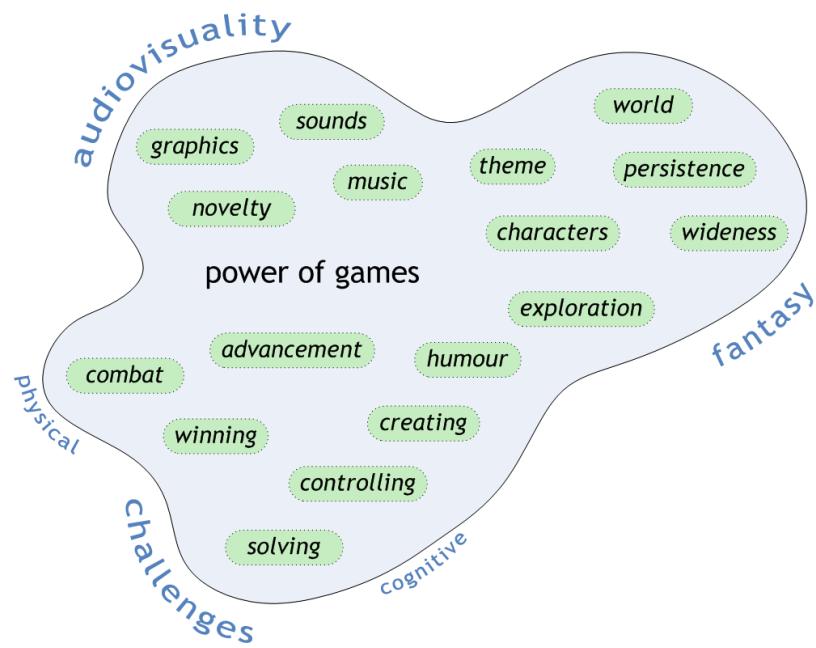


Figure 1: Elements related to pleasurable gameplay experiences that emerged in the interviews with the children [10].

According to the children, the **audiovisual quality and style** was one of the central aspects of good digital games. For example, good-looking graphics could make the game more appealing, and well-functioning camera angles were associated with good playability. However, children perceived game aesthetics in different ways. Some of them especially liked cartoon style graphics, whereas others felt they were too childish and preferred as realistic looking graphical style as possible.

Children also analysed the various ways in which the **level of challenge** was balanced in games quite carefully. The pleasure derived from playing was strongly related to experiences of succeeding and advancing, and uncertainty of the final outcome was an important factor in the overall suspense of playing. The challenges of gameplay seemed to be related to two different domains: to sensomotor abilities such as using the controls and reacting fast, and, secondly to the cognitive challenges. Even though pure puzzle games were not very popular, children liked games in which problem solving was an integral part of the storyline or adventure of the game.

Thirdly, children considered **imaginary world and fantasy** to be central in many games. For them the game characters, worlds and storylines were central elements of the games they liked to play. One important aspect of the imaginary worlds was that children could do things in them that were not possible or even acceptable in their everyday lives, for example beating up a policeman or having two children living in a big house without any adults. After analysing these observations, we followed the principles of grounded theory approach to create a theory that accounted for the findings.

A Gameplay Experience Model

Our research suggests that the gameplay experience and immersion into a game are multidimensional phenomena. The issue here is not that parents would have drawn the wrong conclusions while observing their child's playing, or that the children themselves would not be able to understand their own immersion experiences. Rather, the answer is that immersion is a many-faceted phenomenon with different aspects that can appear and be emphasised differently in the individual cases of different games and players.

In the gameplay experience model presented here (abbreviated as SCI-model, on the basis of its key components; see Figure 2), gameplay is represented as interaction between a particular kind of a game and a particular kind of a game player. Our model is a heuristic representation of key elements that structure the gameplay experience. It is not intended to constitute a comprehensive analysis, but rather designed to guide attention to the complex dynamics that are involved in the interaction between a player and a game. The complex internal organisation of a "game" and a "player" are particularly left schematic here, as the focus is on the consciousness structured by the interplay, rather than on an analysis of games or players in themselves. The gameplay experience can be perceived as a temporal experience, in which finally the interpretation made by the player takes into account also other information such as peer influence, game reviews and other frames of socio-cultural reference.

The first dimension of a gameplay experience that we distinguish is the **sensory immersion** related to the audiovisual execution of games. This is something that even those with less experience with games – like the parents of the children that were interviewed – can recognize: digital games have evolved into audiovisually impressive, three-dimensional and stereophonic worlds that surround their players in a very comprehensive manner. Large screens close to player's face and powerful sounds easily overpower the sensory information coming from the real world, and the player becomes entirely focused on the game world and its stimuli.

Another form of immersion that is particularly central for games, as they are fundamentally based on interaction, is **challenge-based immersion**. This is the feeling of immersion that is at its most powerful when one is able to achieve a satisfying balance of challenges and abilities.

Challenges can be related to motor skills or mental skills such as strategic thinking or logical problem solving, but they usually involve both to some degree.

In several contemporary games also the worlds, characters and story elements have become very central, even if the game would not be classifiable as an actual role-playing game. We call this dimension of game experience in which one becomes absorbed with the stories and the world, or begins to feel for or identify with a game character, **imaginative immersion**. This is the area in which the game offers the player a chance to use her imagination, empathise with the characters, or just enjoy the fantasy of the game.

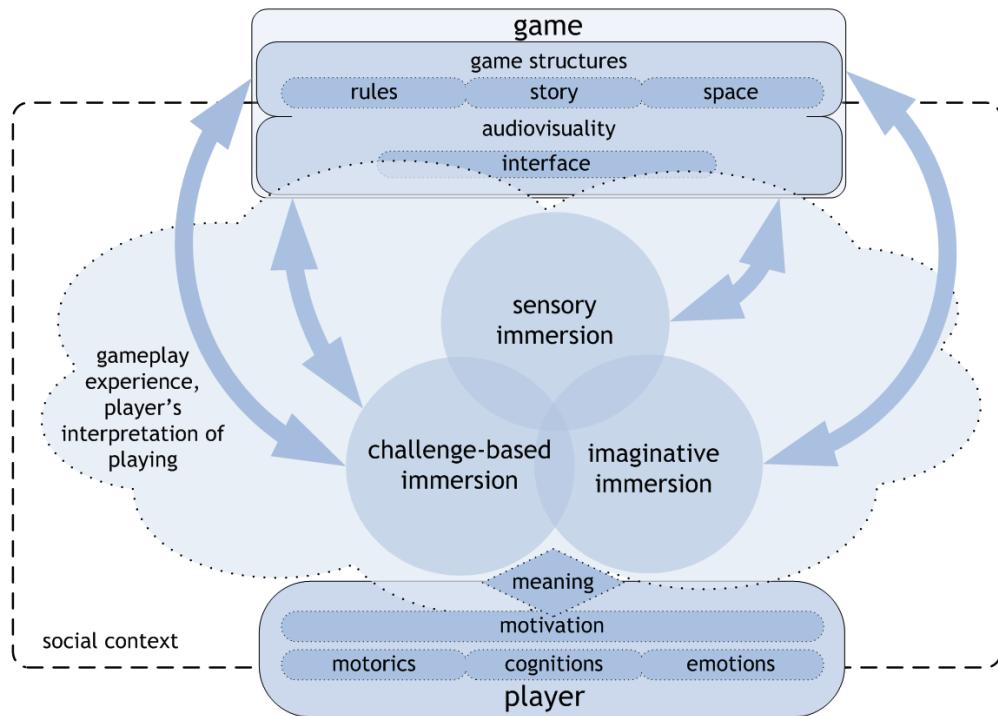


Figure 2: SCI-model identifies the three key dimensions of immersion that are related to several other fundamental components, which have a role in the formation of the gameplay experience.

For example, multi-sensory virtual reality environments such as CAVE [5], or just a simple screensaver, could provide the purest form of sensory immersion, while the experience of imaginative immersion would be most prominent when one becomes absorbed into a good novel. Movies would combine both of these. But challenge-based immersion has an essential role in digital games since the gameplay requires active participation: players are constantly faced with both mental and physical challenges that keep them playing. Since many contemporary digital games have richer audiovisual and narrative content than for example classic *Tetris*, these three dimensions of immersion usually mix and overlap in many ways. In other words, the factors that potentially contribute to imaginative immersion (e.g. characters, world, and storyline) are also apparent in the interaction design (e.g. goal structures) and the audiovisual design (how goals, characters and the world are represented and perceived) of well-integrated game designs.

The overall significance of a game for a player can be greater than the sum of its parts. In our model ‘meaning’ is the part through which a player makes sense of her play experience and constructs her interpretation of the game against the backdrop of the various personal and social contexts of her life. Thus it relates to the traditions of pragmatics, phenomenology and cultural studies as much as to that of semiotics or psychology in a conceptual sense. The contexts of a gameplay experience also include factors such as who the player is (in terms of the rich complexities of personal histories), what kind of previous experience she has with this game or game genre, and how cultural and social factors affect the role games have in her life in more general terms. In addition, situational contexts can have a decisive role in structuring the experience: Who is the game played with? Is there a specific reason to play this game right at that moment? Is the player playing to vent frustrations, for example, or is the significance of this gameplay in the shared moments with friends? All these various contextual factors have their distinctive roles in the interpretation of an experience and are therefore included in the model.

THE GAMEPLAY EXPERIENCE MODEL IN PRACTICE

After creating the model, we were interested to find out how the different aspects of immersion actually appear in contemporary digital games. We constructed a questionnaire that initially consisted of thirty statements addressing the three aspects of gameplay immersion and responses given on a 5-point Likert scale. In March 2005 we invited players of certain popular games to evaluate their experiences of these games. The respondents were recruited from among thousand Finnish participants that had filled in another game-related online questionnaire. The games were chosen on a two-fold basis: on the one hand we had to pick games that were played among the informants and on the other hand we tried to cover as wide a range of different kinds of game genres as possible. The games and the amount of the completed gameplay experience self-evaluation questionnaires are shown in Table 1.

Table 1: The distribution of the completed gameplay experience self-evaluation questionnaires into different digital games.

World of Warcraft	35
Half-Life 2	34
Grand Theft Auto: San Andreas	25
Halo 2	21
Civilization III	19
The Sims 2	18
Star Wars: Knights of the Old Republic II: Sith Lords	16
Rome: Total War	15
Flatout	13
Pro Evolution Soccer 4	13
Nethack	11
Neverwinter Nights	7
NHL 2005	7
TOTAL	234

There were 193 respondents altogether, but since some of them evaluated two different games, the total amount of completed gameplay experience self-evaluation questionnaires was 234. Almost all of the respondents were males (91 %), *The Sims 2* being the only exception with 61 % of the responses given by females. The age of the respondents varied between 12 and 40 years

(mean 21.5 years). The platform used for playing was a PC computer in 71 % of the cases, but *Halo 2* was played only on Xbox and *Grand Theft Auto: San Andreas* only on PlayStation 2. In the majority of the cases the game was played as a single-player game (75 %), but *World of Warcraft* was played as a multiplayer game on the Internet. In a few cases the game was played as a multiplayer game in which the players also shared physical location.

After examining the correlations between the thirty questionnaire items with explorative factor analysis, some of the statements were eliminated so that the number of items was reduced to eighteen. The scale of sensory immersion consisted of four statements related to the capturing of senses done by the game (e.g. “The sounds of game overran the other sounds from the environment”), the scale of challenge-based immersion of seven statements addressing the orientation to goals and flow-like experiences (e.g. “The game challenged me to strive to the limits of my abilities”), and the scale of imaginative immersion included seven statements that measured how involved the player and her imagination were with the game (e.g. “I identified with how the game characters felt in different situations”). Cronbach’s alphas for this sample were .70, .74 and .82 respectively.

It is not possible to go through the results in great detail here, and again we emphasize that the main goal was to develop and validate our model. In that respect, the first obvious finding when looking at the data is that the immersion levels in the examined games were overall quite high so that no game with almost non-existent immersion experience was found. This is an understandable consequence of the fact that our informants were analysing gameplay experiences from games that were their personal favourites. It would no doubt be possible to obtain results also from the different end of the spectrum if random or less-favoured games and not so enthusiastic players would be examined. Nevertheless, the results appear to support the SCI-model and the questionnaire derived from it.

Comparing games that fall to the opposite ends of the scales is illuminating. The sensory immersion is experienced as particularly strong in *Half-Life 2* and lowest at *Nethack*, as we expected. The role of audiovisual technology is clear: the sensory experience provided by an old game from an ASCII graphics era appears distinctly different from that provided by the latest three-dimensional game engines.

The situation is different as we turn to the results from the analysis of challenge-based immersion. Here *Nethack* is the game that acquired the top score, followed by *Civilization III*, *Rome: Total War* and *Pro Evolution Soccer 4*. These games are interesting also in the sense that they probably provide players with distinctly different kind of challenges: *Nethack* with those of a seemingly simple dungeon game that actually provides players with an endless supply of complex puzzles linked to randomly generated items and interactions, *Civilization III* and *Rome: Total War* with the predominantly strategic challenges in warfare and empire-building scenarios, and *Pro Evolution Soccer 4* testing players’ reactions and coordination skills at a faster speed. The lowest challenge-based immersion rating of the examined games was that of *The Sims 2*, which can be related to its non-competitive and toy-like basic character.

Imaginative immersion, the third component of the model, is at its strongest in role-playing games and plot-driven adventure games, again confirming expectations how the scale should operate. *Star Wars: Knights of the Old Republic 2*, *Half-Life 2* and *Neverwinter Nights* lead the statistics, with *Pro Evolution Soccer 4*, the rally game *Flatout* and strategy games *Civilization III* and *Rome: Total War* inhabiting the other end of the scale. The result is logical since games with characters and storylines provide players with more possibilities to identify with something in the game and use their imagination.

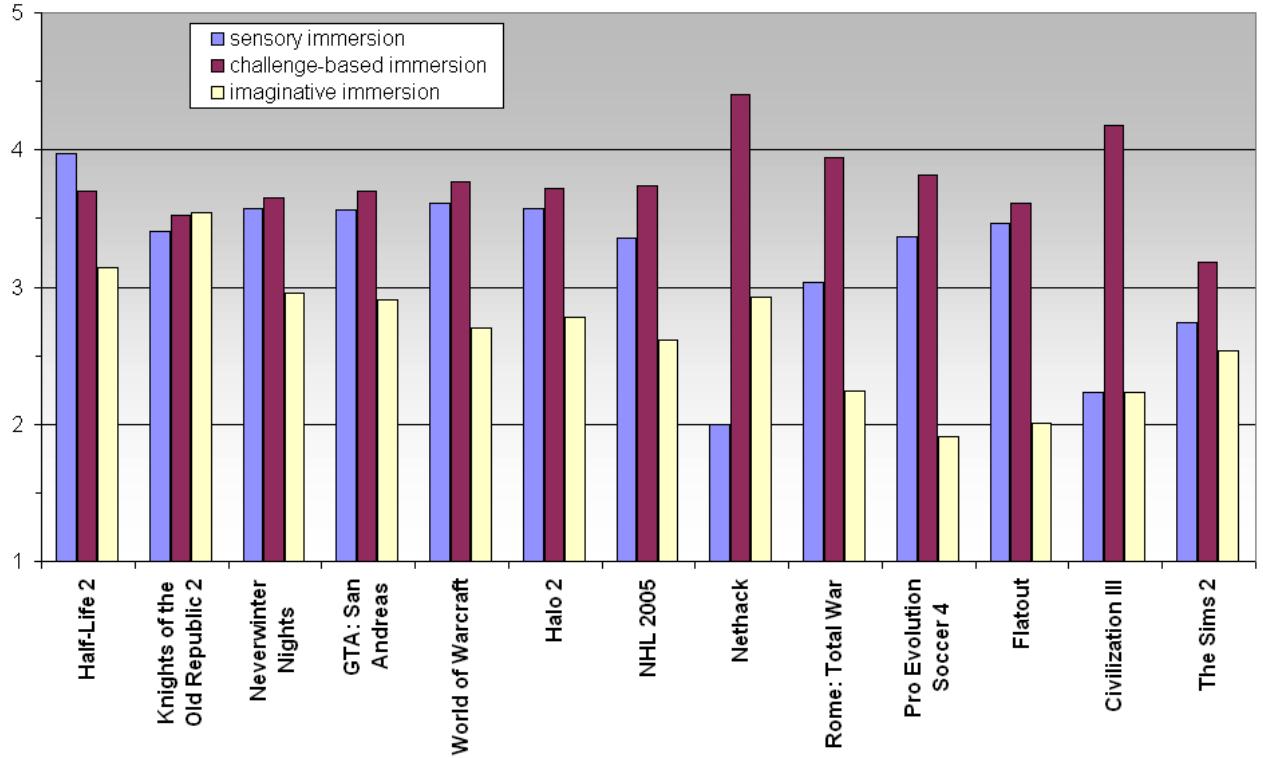


Figure 3: The average amount of each immersion type reported by the players in different digital games. The total amount of immersion reported is highest on the left hand side.

There are several interesting aspects of the results that invite further research. Summing up mean values of all the three components of gameplay immersion, *Half-Life 2* appears to be the overall strongest game in immersing its players. On the other end, the experience of playing *The Sims 2* is apparently not felt as immersive. But it would be mistake to claim *Half-Life 2* to be a better game than *The Sims 2* on this basis. It may well be that the more ‘casual’ character of *The Sims 2* gameplay is one of the reasons behind its appeal for these particular players. *The Sims 2* was also the only one of the examined games with a notable amount of female respondents, but the relatively low evaluation of immersion is not related to the gender of the informants, since females gave overall higher evaluations to the immersion in that game than men.

CONCLUSIONS AND FUTURE WORK

*To each and every one of the above “explanations” it might well be objected: “So far so good, but what actually is the fun of playing? Why does the baby crow with pleasure? Why does the gambler lose himself in his passion? Why is a huge crowd roused to frenzy by a football match?” This intensity of, and absorption in, play finds no explanation in biological analysis. Yet in this intensity, this absorption, this power of maddening, lies the very essence, the primordial quality of play. – Johan Huizinga, *Homo Ludens*.*

This research has been driven by a desire to understand better the nature of gameplay experience. In the existing research, which we synthesised in the beginning of this paper, there proved to be several useful observations and conceptualisations that address or can be applied into the study of gameplay. Nevertheless, there is a need for a game-specific model that would take the diversity of contemporary digital games into account, and that would address its full complexity. We have presented one version of such model in this paper, while also acknowledging the need for further research.

In the future we will test and fine-tune the questionnaire further, and also look into the applicability of the model for evaluation of gameplay characteristics both within a controlled environment, and as a part of pervasive gameplay experience evaluation. The games examined here represent only a fraction of the variety of games. For such purposes new applications of the model will be needed, as well as further extensions of the evaluation criteria to include dimensions of experience relevant to game types that are not played with a personal computer or game console and television screen. It is also necessary to broaden the conception and evaluation of gameplay experiences to include all the other components presented in the model besides immersion. For example, what is the role of emotions, social contexts and players’ expectations and interpretations, and how do the different aspects of gameplay immersion link to the characteristics of the player and features of the game?

In a sense, this research has at this point opened more questions than it is able to answer. For example, it would be highly relevant and important to examine further the role of social and cultural contexts for the gameplay experience. Do the pre-existing expectations and experiences with related games determine the gameplay experience with a new one, and to what degree? And finally, what are the exact interrelationships and relative weights of the components included in our model? It might also be possible that game players are able to switch from one attitude or repertoire of game playing into another one, and the gameplay experience will vary on the basis of such “eyeglasses” or filters. How much does the situational context really affect the way games are experienced? As usual in research, when new knowledge is created, also new horizons into the unknown and unexplored are opened up.

ACKNOWLEDGEMENTS

This research is made in conjunction with several research projects in the Hypermedia Laboratory of the University of Tampere: *Children as the Actors of Game Cultures, Design and Research Environment for Lottery Games of the Future*, and *Mobile Content Communities*. We wish to thank all partners in these projects. We also thank all those children and adults who took part in the interviews and/or completed the questionnaires. Special thanks to Satu Heliö, and to Markus Montola for his comments on the content, and Suvi Mäkelä on the language of this paper.

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