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# Introducing Human-Centered Research to Game Design

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**Abstract**

This paper introduces a human-centered methodology for innovating gameplay, based on ethnographic principles and participatory design. This methodology was applied in a project for designing game concepts for and *with* senior citizens: the SBox Project. The research started off by observing and probing senior citizens in their 'natural habitat', researching what positive experiences occur in their daily life. These observed passions then became the input for brainstorm sessions. Seniors and researchers generated game-ideas and, consequently, co-designed the selected ideas into game concepts. The results of this methodology are inspiring game concepts, directly grafted on the passions and desires of the senior. But more important than the actual game concepts, we conceived a model of passions in elderly life. This model provides game designers with an understanding of the ingredients that are fundamental to 'meaningful play' in elderly life.

**ACM Classification Keywords**

H.5.2 User Interfaces --- User-Centered Design

**Keywords**

Ethnography, human-centered design, participatory design, game design, elderly

### **Do we need player-centered game design?**

Although rigorous project management is an essential part of game development, as for game design, it seems that games are often regarded as 'art'. A strong responsibility is given to the game designer, whose status equals the one of an artist or movie director [7]. Game designers prefer the tap into their (self-perceived) unlimited creativity and come up with their own ideas [5,14,17], often referred to as the I-methodology [21]. This self-centered design process often results in hard-core gamers designing for hard-core gamers, or to put it in other words: 'boys' designing for 'boys' [8]. As the game sector is looking to gain maturity and a larger target group [13,19] there is a clear need for a more inclusive, more mature approach. However, combining the I-methodology with the fact that the game industry is mainly populated by male, Western designers, the difficulties are obvious when trying to develop games aimed at a wider audience [12,16]. As a result, a widespread critique is prevailing that there is little innovation in gameplay and that the game industry has difficulties in addressing non-traditional player groups. [6].

### **User-centered design in games**

User-centered design (UCD) has been introduced to game development and gained rapid success [15], with a strong emphasis on user evaluation and user testing of a game. Most of these UCD techniques are used fairly late in the design cycle, at a time when most of the decisions have already been made by the game designer and his team, such as the type of story, the leading character, the setting of the game, the rules, the rewards, etc. Essential factors that shape the gameplay are already defined and are not to be changed at that point. Plenty of decisions that should

be fed by user research in a user-centered design process are left to the imagination of the game designer.

It is of great importance to bring UCD techniques upfront in the design cycle of a computer game. The next logical step is to incorporate user research techniques at the beginning of the design process. The importance of early user research has been indicated in the human computer interaction (HCI) community by protagonists such as Alan Cooper, Karen Holtzblatt or Jeanette Blomberg [1,3,9] who state that good design starts with a deep understanding of whom you are designing for. In order to understand your user, to discover unarticulated needs and desires, you need to go out and actively see the user in his natural setting. Today ethnographic user research is seen as an essential element in innovative product design [2,10,20]. A similar mindset is necessary in game design. To innovate gameplay and to enhance the playability of a game, the player should be understood thoroughly and the same contextual questions need to be answered.

### **Human-centered game design: Placing playability in context**

Players bring their own context to games, and this context expands the gaming skills or previous gaming expertise of a player. In fact, this is the focal point of the research project. Playability is never an absolute fact but will change from individual to individual, and from social group to social group. Salen & Zimmerman make the same point in Rules of Play: "*players bring in a great deal of the outside world, their expectations, their likes and dislikes, social relationships and so on... In this sense, it is impossible to ignore the fact that games are open, a reflection of who play them*". [18]

## Sbox Project

We deemed human-centered design necessary to innovate gameplay for a senior audience. Therefore, we conceived the Sbox project, designing game concepts for and with senior citizens.

The research activities encompass two different steps: the project started out with an ethnographic inquiry of senior citizens. Consequently, seniors and researchers brainstormed for ideas and converted selected ideas into game concepts.

## Senior participants

Ten senior citizens (seven male and three female) participated in the research project. The age varied from sixty-eight to eighty years. The following requirements were defined: "The senior should lead an active and healthy life. He or she should have a sufficient degree of self-dependence. He or she should be in good mental health." All seniors are living in Flanders (Belgium).

## Phase 1. Ethnographic inquiries

We started out by conducting an ethnographic inquiry. During the time span of one week, seniors were observed, interviewed and 'probed' at their homes. The first day of the week, the researcher visited the home of the senior citizen and explained the project. Seniors were then asked to record all 'enjoyable activities' or passions. It was stressed that a passion is something that makes the time fly, but really can be anything. Seniors were asked to write down all passions on post-it notes and stick these notes in a passion logbook and take photographs of any artifacts, surroundings or people related to these passions.



**figure1.** One page out of passion logbook (left) and a heart shaped post-it note on a newspaper (right)

After two days the researcher paid a second visit to the home of the senior. During this visit he or she reviewed the passions that were noted by the senior during the previous two days, using the post-it notes in the logbook and in the environment as input for discussion. If possible 'show & tells' of the passions were asked for.

The third and final visit occurred at the end of the research week. Again the passions were reviewed and discussed. Different factors that were important for a better understanding of these passions were analyzed: What is the nature of the passion? What exactly makes it enjoyable? How is that passion situated in time and space? Are other people involved? Are there necessary artifacts for the passion? Is there technology that facilitates the passion? What are ways to improve that passion?

On this last day, we also asked the senior to create a top five of the most important passions to him or her. It was not only interesting to find out which passions made up the top five but also *why* one passion was chosen over another. This gave a list of 50 passions in elderly life.

## Phase 2. Participatory design

Approximately one month after the ethnographic inquiry we started with the participatory design sessions. For this phase, we constructed design teams consisting of one researcher and one senior citizen. A social scientist and an interaction designer were present to moderate and facilitate the design processes.



Seniors and researchers first brainstormed for possible ideas inspired by a small contextual story. In total 399 ideas were generated. Not surprisingly, many of the passions that were listed in the top five during the ethnographic inquiries also ended up as ideas on the wall during this brainstorm. After the idea generation phase, the teams evaluated them on their attractiveness. In the end, each team chose one idea to elaborate upon. This idea was then co-designed into a game concept. Design teams were also encouraged to create paper prototypes and visualize their vision. For each of the 10 teams, the end result of this participatory design process was a 'game design (concept) document' and if possible a paper prototype.

## Passions in Elderly Life?

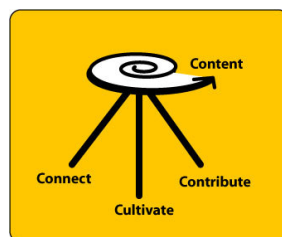
When defining passions we consciously chose a broad and vague definition as not to place mental delimiters on the information provided by seniors. Similarly, during the participatory design sessions we defined a game broadly as electronic entertainment as not to rule any innovative ideas. However, a consequence of this broad approach was that the passions mentioned by the seniors were very divergent and hard to process by one approach.

From the ethnographic inquiries, we knew that seniors spend a lot of time on activities such as playing cards, solving puzzles, watching television, etc. But when listing a top five of passions, these activities fell short and did not show up. Neither did they make it into brainstormed ideas. Instead, seniors often mentioned people, values or complex passions that combined different aspect (*my wife, playing cards with my partner, visiting lonely people, organizing events for the club, preparing the trip of a senior movement, etc.*).

We found out that most passions are layered with meanings and should be interpreted carefully. It is only when exploring the passion with the help of the ethnographic inquiries that the true meaning can be understood, e.g. one senior listed 'Tai Chi' as her passion, because of her explanation we understood that she really meant spending time with her friends and not the actual sport.

In order to transform an activity into a passion, apparently, our participants were looking for more than sheer enjoyment of the activity.

### A model to understand passions



Therefore, we conceived a model that does not only take into account the actual activity (**content**) but addresses the other layers that we found to be of importance.

#### Layer 1: Connect

Most passions are about being connected. In first instance to the significant other, children, grandchildren and friends. In addition, seniors often stress being connected to society. Six out of the ten game concepts are explicitly multiplayer games. One senior even objected to the project because he felt that computer games were threatening this connectedness: *"We don't need computer games to isolate us further. Whatever game we think of, it is always better to play it together in real life with real people."*

#### Layer 2: Cultivate

Cultivating oneself is still highly valued, personal growth is clearly what seniors are aiming for.

Therefore, there is a keen interest in following workshops, listening to guest speakers, cultural travels, reading non-fiction, etc. five out of the ten games were about educating one self or the other players.

#### Layer 3: Contribute

Finally, we found that it was often stressed that one should contribute to society. Our participants wanted to make themselves useful, and listed passions such as watching over grandchildren, visiting lonely or disabled people, managing the administration of an organization, etc. One of the games that was thought of by a senior was called 'the good deed' game. Another game was explicitly designed for those seniors whose immobility was isolating them, whereby designing the game was a good deed in itself.

### Conclusions

Using a human-centered methodology based on ethnographic inquiries and participatory design, game researchers discovered the necessary ingredients to create meaningful play in elderly life. Important aspects such as the type of activities that are considered enjoyable, the amount of time spent on passions, during which part of the day, in which social setting, at what location, etc. were understood. Maybe even more important than the actual activities and designed game concepts, we derived a model of how to turn an enjoyable activity into a passion. The ingredients of innovative gameplay for this generation of senior citizens should not only focus on the content but also incorporate aspects that allow for connecting people, cultivating personal growth and contributing to society. We believe this insight will help to innovate future game design for the target audience.

### Future work

A confirmation of this methodology and the model of passions is necessary on a broader scale. As only ten seniors participated in the study, it is still a small sample to draw final conclusions. Furthermore, the seniors in this sample were relatively well educated. This is also an aspect that must be taken into account when looking for generalization of the research results. In conclusion, we wonder if our model of passions is restricted to this generation of Flemish seniors only. Can this methodology and model of passions be transferred to any audience?

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