

Meaningful Play in Elderly Life

Bob De Schutter
eMedia, Group T
Vesaliusstraat 13
3000 Louvain, Belgium
CMC, Associatie KU Leuven
Parkstraat 45
3000 Louvain, Belgium
bob.de.schutter@groept.be

Vero Vandenabeele
eMedia, Group T
Vesaliusstraat 13
3000 Louvain, Belgium
CMC, Associatie KU Leuven
Parkstraat 45
3000 Louvain, Belgium
vero@groept.be

In this paper we report on a design research study of meaningful play in elderly life. Using a combination of contextual inquiries and participatory design sessions we researched passions in elderly life and explored attractive game concepts. We conclude that in order to provide meaningful play for elderly citizens, digital games should not only include themes that are associated with elderly life, but more importantly 1) foster connectedness, 2) cultivate oneself and others and 3) contribute to society.

A call for projects to close the digital divide for elderly in society, launched by the Belgian King Baudouin Foundation in October 2005 (Koning Boudewijnstichting, 2005), drew our attention to senior citizens as a potential audience for digital games. The symposium of the foundation indicated that there is a necessity to develop digital media to accommodate an audience of senior citizens. Previous studies have demonstrated that the digital divide is threatening the independence of senior citizens, as modern life has become ever so digital (Leirman, 2005; Moreas, 2007). Elderly citizens did not grow up in today's digital society and many of them have a hard time adapting to and coping with these new circumstances. To lower the digital threshold in using digital media, the foundation launched a call for research projects that enable senior citizens to become active and competent members of a digital society.

A proven approach to foster digital competences is the development of digital games. It has been demonstrated that games can be used effectively to educate and train people (Prensky, 2004; Kirriemuir & McFarlane, 2005; Sandford & Williamson, 2005). Furthermore, digital entertainment is able to develop positive attitudes towards technology, as well as certain skills that are relevant to the information age (Subrahmanyam & Greenfield; 2001 Calvert, 2005). Consequently, digital games can be of value in the attempt to close the digital divide (Cassel & Jenkins, 1998; Martinson, 2002). The first challenge in doing so, however, is to develop games that are accessible and attractive to a senior audience. Unfortunately, game developers are often enticed to tap into their own interests and experiences to design their applica-

tions. This causes problems since the interests and ICT-expertise from these tech-savvy computer specialists are miles apart from average senior citizens. Therefore, this paper rejects the so-called I-methodology (Oudshoorn & Pinch, 2003) and addresses the need for a player-centered design process in which the player is actively researched and included when designing games.

The aim of such a player-centered design process is to understand how and when play becomes meaningful for a specific game audience. Salen & Zimmerman's concept of meaningful play (2003, p.32) as emerging from the relationship between player action and system outcome, can be used to understand how the formal rules of a game should be designed. This definition indicates that every game must generate meaning to its player, in order to become successful. The concept also signifies the larger context of a game; the psychological experience and the cultural surrounding.

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 (Salen & Zimmerman, 2003, p.171).

We accordingly argue that a thorough understanding of seniors, their expectations, their likes and dislikes, social relationships, etc. is essential to designing meaningful play for elderly citizens. A game must relate to its players in order to provide the intrinsic motivation (Malone, 1980), flow (Csikszentmihalyi, 1990) or embodied experiences and projective identities (Gee, 2003; Van Looy: 2006) that can make digital games good learning environments and consequently meet the challenge of the King Baudouin Foundation.

Method

In order to achieve our objective, it was imperative to include the target audience in the design process from the very beginning. We conceived a player-centered design research that included contextual inquiries followed by participatory design sessions. Ten Flemish senior citizens (7 men and 3 women) participated in the research project. The age of our participants varied from 68 to 80 years. Our respondents were not part of the baby-boomer generation, but rather part of the generation that is sometimes called the silent generation due to their virtuous and quiet life (Haman, 2003). The project did not seek out any 'average' kind of senior, but deliberately aimed for active and healthy persons, that wanted to think creatively and contribute to the design process. Nevertheless, this was a critical decision from a design perspective, as this user group is most likely to come up with new and innovative ideas (Knudtzon et al, 2003). To acquire data about the life and interests of senior citizens, the project started with contextual inquiries (Holtzblatt & Jones, 2003). This user research methodology places particular emphasis on the workplace or natural setting where the software (or games) will be used. In case of this project, during the time span of one week, the seniors were observed, interviewed and probed¹ at their homes. The first day of the week, a researcher visited the home of the senior citizen and explained the project. The elderly participants were asked to record all enjoyable activities or passions. It was stressed that a passion is something that makes the time fly, and really makes their life worth living. Seniors were asked to write down all passions on post-it notes and stick these notes in a passion logbook. Furthermore, they were instructed to take photographs of any artifacts, surroundings or people related to their passions. 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. The third and final visit occurred at the end of the research week. The passions were reviewed and discussed once more. In order to achieve a deep understanding of their passions, the participants were asked questions such as "What is the nature of a certain passion?", "What exactly makes this passion enjoyable?", "How is that passion situated in time and space?", "Are other people involved?", "Are there necessary artifacts that facilitate a passion?", "Does the passion require a certain kind of technology?", "What are obstacles to a certain passion?", etc. On this last day, the senior was also asked to create a top five of the most important passions to him or her. To finalize this part of the research, a biography was written which captured the daily life of the senior, along with his or her needs, hopes and dreams. In total, this research phase resulted in ten biographies and fifty passions of elderly life. The contextual inquiries were followed up with participatory design sessions. For this phase, we constructed ten 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.

The seniors and researchers had a brainstorm session to come up with possible ideas, which resulted in a total of 399 ideas on separate post-its. Not surprisingly, many of the passions that were listed in the top five during the contextual 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. Next, the teams wrote down a more accurate description of their game. This document contained information about the game, such as its title, its genre, its goal, its rules, its visual style, its levels, its game play theme, its interface, its artwork, its controls and its characters. The design teams were also encouraged to create paper prototypes and visualize their vision. To do so, each team was provided with colored paper, pencils, markers, modeling clay, post-it notes, scissors, glue, staples, etc. to encourage creative creation of games. For each of the ten teams, the end result of this participatory design process was a 'game concept document' and if possible a paper prototype.

Results

The result of the contextual inquiries research was a list of fifty passions. In defining passions, a broad and vague definition (i.e. a passion is an enjoyable activity) was consciously chosen as to not place mental delimiters on the information provided by seniors. However, a consequence of this broad approach was that the passions mentioned by the seniors were quite divergent and hard to process by one approach. Although the contextual inquiries indicated that most participants did spend a lot of time on activities such as playing cards, solving puzzles, watching television, etc., when listing a top five of passions, these activities fell short and did not make the cut. Neither did these activities make it into the brainstormed ideas and game concepts. Instead of these kinds of rather predictable passions, seniors often mentioned people, values or complex passions that were multidimensional (e.g. "playing cards with my partner", "visiting lonely people", "organizing events for the club", "preparing the trip of a senior movement", "Sunday dinner with grand children", "my daily walk with my partner", etc.). We found out that most passions were layered with meanings and were to be interpreted carefully. In this aspect, the contextual inquiries proved to be vital in capturing the true meaning of each passion. For example, one senior who listed 'Tai Chi' as her passion, but the contextual inquiry revealed that her real passion was spending time with her friends during Tai Chi, instead of the actual sport. Another senior who initially expressed his love for the news, explained that the underlying motive for his passion was to stay in touch with society and be able to talk with friends and family about news items. Yet another senior mentioned biking as his passion and explained that he

¹ Probes are specific artifacts, designed to investigate and obtain information from users when conducting qualitative user research. Examples of probes can be digital cameras, postcards, diaries, drawings, etc.

Table 1

The ten game concepts

1. Home Theatre (HuisToneel)
Direct your own theatre piece, choose the lyrics, direct the actors, design the stage, etc
2. Going to the sea (Wij gaan naar zee)
Be the captain of your ship together with 5 other crew members and get everyone alive and kicking off the boat.
3. Chef Cook (Meesterkok)
Become a master in cooking under the guidance of this fun cook, he knows your ingredients and proposes fun recipes.
4. Memories (Herkenningspunten)
As the quizmaster of this fun quiz, you ask question about the memoirs of your family life.
5. Who am I (Ra, ra, wie ben ik)
Imitate a historical figure, your grand children will guess who you are.
6. Travel game (Spelend Reizen)
Travel to any place on a virtual tourbus with real friends, and test your knowledge in a quiz.
7. The Pigeon Game (Duivenspel)
Follow your own pigeon on screen and place your bets.
8. Petanque
Play the French Jeux de boules game in your own living room with other friends.
9. CityTrip (Stedentocht)
Explore new exhibits and cultural activities in different cities.
10. Fashion designer (Eigen mode)
Dress your friend on line.

did not enjoy his passion as a result of the physical exercise. Instead, his love for biking was all about feeling united with the world.

Similarly, the game concepts were surprisingly rich² in their unpolished form. The aim of the participatory design sessions was to include users and social contexts into the design process to ensure that meaningful play would come out of the design sessions. These sessions narrowed the interpretation of each chosen passion, and transformed them into games or electronic entertainment. Similarly to the passions, the game concepts were no straightforward digital adaptations of already existing puzzle or card games. Instead, game concepts were layered with different themes and game play styles, and could interest a non-senior audience as well. The games ranged from interactive cookbooks with humoristic agents, virtual cultural travels and sport simulations to role-playing games and family quizzes.

But most important, almost all games were about being connected to the significant other, children, grandchildren and friends. In addition, seniors often stressed being connected to society in general. Six out of the ten game concepts were explicitly designed as multi-player games. One senior even objected to the project because he felt that computer games were threatening this connectedness: "We dont need computer games to isolate us further. Whatever game we think of or what ever game we eventually design, it will always

be better to play together in real life with real people." Even activities that were not about spending time with others, such as following the news or physical exercise, were upon careful analysis via the contextual inquiries, about being connected with society at large.

Furthermore, seniors required that games should have a purpose or value, which meant that there should be some educational or cultural benefit (five out of ten games were about educating the player). Cultivating oneself or others was highly valued, personal growth was clearly what the participating seniors were after. There was a keen interest in following workshops, listening to guest speakers, cultural travels, reading non-fiction, etc. Also in activities such as watching television of reading, there is a stress on learning and personal enrichment. When talking about physical condition, there is less a stress on sports as competitive and more on staying in good shape, thus cultivating the body. Especially valued was being able to pass on knowledge or wisdom to younger generations. Consequently, five out of ten games were about educating oneself or the other players.

Finally, 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. The same concern was addressed during the participatory design. One of the first games designed by a senior was literally 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.

After this stage we understood that although the actual passions and game concepts were divergent, the underlying values that were addressed appeared to be very similar. Our respondents emphasized social connectedness, personal growth and that there should be a contribution to society. We derived a model that focused on important aspects of elderly life and aimed at providing meaningful play for our seniors. To understand what makes gaming meaningful for the senior audience, a passion model was conceived. This model does not only take into account the actual activity (core), but also addresses the underlying layers: connectedness, cultivation and contribution.

Activity: Core. These are the actual activities or passions, listed during the contextual inquiries and brainstorming, such as playing cards, literature, solving word puzzles, watching television, listening to a speaker, walking, gardening, etc. These activities can form the theme of a game, such as cultural quiz, a card game or gardening game. But more important is to understand the underlying meaning of these passions, i.e. the layers that are added to the actual activities.

Connect. Most passions and games are about being connected to the significant other, children, grandchildren and friends. In addition, seniors often stress being connected

² For a detailed discussion of the game concepts and the passions or for a more in-depth discussion of the methodology, we refer to <http://sbox.groept.be>.

to society. Therefore, games should clearly emphasize this connectedness, e.g. via multiplayer options, extra forums, themes about family members, etc.

Cultivate. Cultivating oneself or others is important, no game should be without the possibility of gaining knowledge. Games that allow seniors to share their wisdom with other players are particularly interesting, e.g. allowing seniors to add content to a game, quizzing, etc.

Contribute. Games should in a larger context try to contribute to society. Games that help people ahead and aim at creating a better world are sought after.

Discussion

We acknowledge that a confirmation of this 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 conclusions. Furthermore, these seniors were consciously instead of randomly selected. We aimed for active and healthy persons that wanted to think creatively and contribute to the design process. This approach is accepted within participatory design research (Knudtzon, 2003) but might be questioned from a social science point of view. Still, our results are in line of developmental psychological theory. Erikson's theory (1950; in Berk, 2003, p. 584) associates late adulthood with the conflict between ego integrity versus despair. To achieve ego integrity, one needs to come to terms with his or her life. Consequently, seniors who arrive at this sense of achievement and integrity will feel satisfied and complete. We argue that the concept of ego integrity explains the passions that were outlined in our passions model (i.e. to be connected, to cultivate themselves, and to contribute to society). The concepts of connectedness to an extended family and contribution to society are part of the pursuit of ego integrity, as the capacity to view one's life in the larger context ... contributes to the serenity and contentment that accompany integrity (Berk, 2003). On the other hand, cultivating oneself in order to answer life's questions corresponds with the idea of attaining a feeling of satisfaction about one's achievements in life en route of ego integrity.

We believe that future work should investigate how the passion model complements and interacts with other frameworks on media use that are more common in communication science, especially the Uses & Gratifications (U&G) paradigm (Katz, Blumler, Gurevitch, 1973; Rosengren, 1974). How does qualitative U&G research relate to the findings of our player-centered methodology? To what extent can user passions be understood as user gratifications? And at large scale, to what extent can a design research methodology contribute to communication science and vice versa?

Conclusion

The contextual inquiries provided detailed insight in what constitutes a passion and the context of these passions, which formed a valuable input for game ideas during brainstorm sessions. The participatory design led to creative and

non-stereotypical game concepts that, although they lacked detailed gameplay, surprised the researchers. Furthermore, this player-centered methodology allowed us to define a passion model that helps to address underlying values that are important to meaningful play for this audience.

The ingredients of gameplay for senior citizens should not only focus on the activity itself but also incorporate aspects that allow for connecting people, cultivating personal growth and contributing to society. We believe this insight will help create successful future game designs for the target audience and ensure 'meaningful play' in elderly life.

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