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# Elderly clients' experiences of playing a video-game

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**Laurea University of Applied Sciences**  
Otaniemi

## Elderly clients' experiences of playing a video-game

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Video-games have become more prevalent among all age-groups during the past few decades. The purpose of this thesis is to describe elderly clients' experiences of playing a video-game. The research was conducted at a private nursing home and the participants were gathered from an activity group attending at the nursing home.

The theoretical framework of this thesis has been build up upon literature elucidating the topic of the thesis, as well as previous studies on the topic. Literature search was carried out to provide evidence for the significance and relevance of the study. Existing research indicated that elderly are more reserved towards video-games than any other age-group.

Qualitative research method was implemented via gaming sessions and an unstructured focus group interview of six (6) elderly participants. An inductive analysis method was used to analyse the data.

The findings showed that elderly experienced various challenges with playing video-games. Many of these challenges could be associated with age-related physical and cognitive impairment.

It was recommended for the future studies of a similar kind, that the video-games chosen should be as easy as possible to accommodate for the challenges the elderly face as they engage into this new experience.

Sopanen Jouni

**Ikäihmisten kokemuksia videopelin pelaamisesta**

Vuosi **2015**

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Videopelien suosio on lisääntynyt kaikkien ikäryhmien keskuudessa viimeisten vuosikymmenien aikana. Tämän opinnäytetyön tarkoituksena on kartoittaa ikäihmisten kokemuksia videopelin pelaamisesta. Tutkimus suoritettiin yksityisessä palvelutalossa ja osallistujat kerättiin aktiivisuusryhmästä joka kokoontuu palvelutalolla viikottain.

Teoreettinen viitekehys on rakennettu aihetta valaisevasta kirjallisuudesta, sekä aikaisemmista aiheesta tehdystä tutkimuksista. Kirjallisuuskatsaus toteutettiin tutkimuksen merkityksen sekä oleellisuuden osoittamiseksi. Olemassaoleva tutkimustieto osoitti että ikäihmiset ovat muita ikäryhmiä varautuneempia videopelejä kohtaan.

Laadullinen tutkimus toteutettiin järjestämällä pelisessiot sekä avoin ryhmähaastattelu kuudelle (6) osallistujalle. Induktiivista sisältöanalyysiä käytettiin tulosten analysoitiin.

Löydökset osoittivat että ikäihmiset kokevat haasteita liittyen videopelien pelaamiseen. Monet näistä haasteista liittyvät iän tuomiin fyysisiin ja kognitiivisiin vaikeuksiin.

Olisi suositeltavaa että tulevissa vastaanaisissa tutkimuksessa käytettäisiin vaikeusasteeltaan mahdollisimman helpoja videopelejä jotta pelaamiseen liittyvät ikäihmisten kohtaamat haasteet helpottuisivat.

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## 1 Introduction

The video game industry has grown significantly since it's birth in the early 70s. According to the Entertainment Software Association (ESA, 2014): "Today, interactive entertainment software companies generate more than \$21.5 billion in U.S. sales and directly and indirectly employ more than 146,000 Americans."

As video-games have become more prevalent in modern culture, the industry has expanded its audience. Video-games are not merely played by adolescents but by people from all ages (Entertainment Software Rating Board, 2010). There have not been many games specifically designed for the elderly, even though the latter comprise a large demographic of potential customers for the video-game industry. Little research has been done on the potential beneficial effects video-games could have fighting the cognitive impairment brought by aging. Even less research has been conducted on the attitudes and experiences of the elderly regarding video-games. Lastly, the vast majority of research has focused on the elderly who do not suffer from a form of dementia.

At the moment, there are no signs that the growth in the popularity of video games will decelerate. On the contrary, as future generations will be increasingly accustomed to video-games, due to their increasing prevalence as a form of media, it is likely that video-games continue becoming increasingly popular among all age groups, including the elderly population. The purpose of this thesis is to describe elderly clients' experiences of playing a video-game.

### 1.1 Significance of the study

There are two social factors that make the topic of this study both relevant and significant. One is the ageing of the population, that is taking place on a global scale and is occurring the fastest in developing countries. According to projections, the number of people who are 60 or over, is expected to "more than double" by the year 2050 (United Nations, 2013). If these projections hold true, alongside with the decreased fertility rates, the elderly will comprise a significant amount of the total population in the future. The second factor is the (ever increasing) prevalence of video-games in modern culture. The growth of the video-game industry has been rapid: From a small industry born in 1970s, to an industry that is rivalling other major entertainment industries, such as the music industry and the film industry, in revenues (see ESA's Essential Facts, 2015 for review). In common terms, video-games have become "main-stream" as a form of entertainment, and projections indicate that this growth will continue in the future (ESA, 2014). As video-games have become more prevalent, some companies have realized that there is an opportunity of expanding the audience of video-gamers. Most notably of these companies, Nintendo has always emphasized the "non-

hardcore” gaming audiences in their marketing strategy. Games such as Brain Age© are catered for gamers of all ages.

However, according the existing research (which is scarce), the elderly may be the most challenging demographic to be reached by the video-game companies. Regarding attitudes, older age-groups are more reserved when it comes to video-games than the younger generations (McClure, 1985). Older age-groups have expressed lack of interest, cost, lack of knowledge about video-games and the lack of perceived need, to be the main reasons of not owning a video-game (Belchior, 2007). As the attitudes and experiences of the elderly regarding video-games have not been subject to much research, this study might provide useful data for video-game industries.

Another perspective, that is significant in relation to the topic of the study, is the rehabilitative perspective regarding the potential health benefits, that may be gained by playing video-games - especially in relation to age-related cognitive impairment. Engaging in mentally stimulating activities has been associated with positive health outcomes, both mental and physical (Baltes,.. 2006). Indeed, there is evidence suggesting that playing video-games can enhance cognitive functioning (Sosa, 2012). Although the research examining the efficacy of video-games, as tools of improving the cognitive functioning in elderly, is scant, positive links have been found in relation to such activity and cognitive performance (Basak et al., 2008; Dustman et al., 1992; Farris et al., 1994). Playing video-games has also been linked with an improvement on emotional well-being (Goldstein et al., 1997). Video games have even demonstrated potential for physical rehabilitation in the elderly, via accessories such as the Wii Fit© (Broadbent et al., 2014). There is even evidence suggesting that the cognitive improvements, that have been reported in relation to video-game-playing, are significant enough to be measured in the brain (Kühn et. al., 2014). The elderly with more active social lives are more healthy (Smith et al., 1999; Stine-Morrow et al., 2006) and live longer (Maier & Klumb, 2005) On the other hand, video-games are, more and more, a form of social activity (McLaughlin et al., 2012), especially online gaming, which enables social interaction to those who are unable to leave their homes

All in all, existing research demonstrates the tremendous potential that video-games may have as tools of improving one’s health. As video-games are essentially and primarily a form of entertainment, their health-benefitting potential is even more significant, as they may be able to combine “the fun” and “the gain”. However, the attitudes and the experience of the elderly population, regarding video-games, ought to be studied in order to determine whether the games that are commercially available are suitable for this purpose.

## 2 Theoretical framework

The aim of this thesis is to study the experiences of the elderly of their experiences of playing a video-game. The topic of this thesis has not been widely researched. This may be partly due to the fact that, historically, video-games are a relatively new phenomenon. On the other hand, the majority of video-games are designed for adolescents, as they comprise the largest demographic of gamers (ESA, 2015). As elderly do not comprise a significant portion of video-gamers, they have received less attention by video-game developers as well as researchers. Video-game industries have only recently begun reach out to other age demographics, as video-games have become more popular. It could be argued, that elderly (people over the age of 65) are the demographic most isolated from the influence of the video-game industry, as these people did not grow up with video-games, as their younger peers did (and, more increasingly, do).

According to existing research, elderly are more reserved towards video-games than younger generations (McClure, 1985). At the same time, video-game training has been found to have a positive effect on these attitudes (Belchior, 2007). McLaughling et al. proposed that “the decision to play a game is analogous to a scale” (see Figure 1, p. 27). In other words, a person calculates the “costs” and “benefits” prior to making the decision of whether to try out a new technology or not (in this case, a video-game). This model of behaviour is termed “motivated choice” (Melenhorst et al., 2006). In relation to video-games, “costs” can be factors such as frustration, time (that it takes to learn to play) or money (that must be spent to purchase a video-game). “Benefits”, on the other hand, are factors such as meaningful social interaction, fun, and feelings of success. In other words, if a person trying out a video-game for the first time does not perceive the potential benefits that could be gained from playing, he/she will not invest resources (e.g. time, money, energy) into playing. If benefits outweigh the costs the person is much more likely to engage in the process of learning the new technology (Sharit et al., 2004).

Another phenomenon that is significant in relation to the topic is stereotype threat. Stereotype threat is a phenomenon where people are affected by the of negative stereotypes about their social group (e.g. elderly) either by confirming or fearing to confirm these stereotypes (Steele & Aronson, 1995). As a result, people underperform in tasks related to the stereotype (Steele & Aronson, 1995). For example, an elderly person, while trying out a video-game for the first time, may underperform simply because the person feels that he/she is “too old to play video-games”. In this case, the negative stereotype may stem from the notion of age-related cognitive decline (which can affect performance), or the social expectations regarding the activities of elderly (as video-games are traditionally seen as the past-time of younger generations).

In a recent study investigating the cognitive benefits of gaming, over 30 elderly participants played a Nintendo Wii© game Boom Blox© over the span of 15 days. Some participants experienced themselves “unfit” to play video-games simply due to their age (the stereotype threat-effect). At the same time, the participants cared for their performance, which would lead to feelings of frustration and other negative emotions towards the self (McLaughling et al., 2012). The participants also experienced difficulties due to game’s design, as it was not specifically designed with the elderly in mind, despite the game being marketed for “all ages”. On the other hand, the participants of the study reported number of benefits, such as increased well-being, fun, learning, social interaction, engagement and achievement. It was also observed the participants played in pairs they would encourage and support each other. (see McLaughling et al., 2012 for review). According to surveys and statistics, older age groups are increasingly interested in video-games and play more than before (Lenhart et al., 2008; ESA, 2015).

## 2.1 A video-game

A video game is “an electronic game in which players control images on a television or computer screen” (Merriam-Webster Dictionary). The game the elderly clients of this study played was “Big Brain Academy: Wii Degree©” for the Nintendo Wii©-console. In the game the player will enrol into an academy and create a profile of their liking. The game itself consists of mini-games divided into five different categories: thinking, memorization, computation, analysis and identification (See Figure 2, p. 29). The player can either practice a specific mini-game of a specific category or take an in-game “test”. In the test section of the game there are mini-games from all categories and the game keeps track of the players progress. The player will get points depending on one’s performance and the total of points is the “weight” of the players brain. The better the score, the higher the weight of the brain (calculated in grams), hence the name of the game. The player can choose from three different difficulties: easy, medium or difficult. In the study, only the “easy” setting will be used to accommodate for the inexperience of the participants.

## 2.2 Elderly client

According to Merriam Webster dictionary, an elderly is a person who is ”old” or ”past middle age”. The definition of an elderly client for the thesis, is a person who is over the age of 65 and resides in an elderly home (hence the term ”client”). The participants of this study consist of elderly clients who live in an elderly home due to a decline in their health, mainly cognitive impairment.

### 3 Purpose statement and research question

The purpose of this thesis is to describe elderly client's experiences of playing a video game.

The research question is: What are the experiences of elderly clients of playing a video-game?

### 4 Methodology

The methodology used in this thesis is qualitative research. "Qualitative research is designed to explore the human elements of a given topic, where specific methods are used to examine how individuals see and experience the world." (Given, Ed., 2008). Since there are only 6 participants in this thesis qualitative method is used to better understand the experiences of the participants.

#### 4.1 Informants of the study

The informants of the study were elderly clients between ages 68 and 94. All six (6) informants were women. Some informants mentioned suffering from a form of dementia, but these qualities were not studied in the thesis. The informants had either none or very little experience of playing video games prior to the study.

#### 4.2 Data Collection

The data collection for the thesis occurred in two phases. In the first phase, the data was collected by audio-taping the video-gaming sessions. In addition, the game screen action was recorded simultaneously to aid the data analysis process later (so that the audio/video data can be associated with what is taking place in the game). In the second phase, an unstructured focus group interview was arranged for all six (6) participants where they could discuss their experience. Focus groups are a form of qualitative research method that uses a group discussion led by a moderator to generate data. (Given, Ed., 2008). This interview was audio-taped for later analysis. Unstructured interview method is useful when researchers wish to know specific details regarding the phenomenon at hand (Given, Ed., 2008). Unstructured method, in this case, was used for the following reasons: 1.) because the area of research is relatively new 2.) the "depth" of the information is what is relevant, as the study concerns the experience. The goal of the interviewee was to create a comfortable situation where the participants can share their experiences freely and openly. As the study is concerned with experience, there were no "right" or "wrong" answers, this was emphasized throughout the study.

The participants were split into groups of two for the gaming sessions. The gaming sessions were done in pairs. Before the gaming sessions the participants signed consent forms. During the sessions the participants were given instructions on how to play the game and they were continually instructed throughout the sessions. The gaming sessions lasted about an hour each, which there were three in total. The participants took turns playing. In this way, the participants could provide each other positive feedback and otherwise share the experience. The gaming sessions were audio-taped and the in-game video was recorded for later analysis. Significant amount of time went into instructing the participants about game controls and the games themselves. Because of this, there was less time for the actual in-game experience itself. The participants tried out mostly the same games in all groups.

The final interview was conducted implementing the unstructured interview model. The interview was lead by the moderator asking the questions while the actual conversation remained unstructured. The participants were asked general questions about their gaming experience, such as whether they enjoyed playing or not. They were also asked regarding whether they found the games challenging. The final interview lasted about 30 minutes and was audio-taped for later analysis.

The focus group interview, as well as the gaming sessions were arranged at a private nursing home located in the capital area of Finland. The participants for the study were selected from a weekly activity group for elders. First, the manager of the nursing home was contacted regarding the possibility to conduct the study. It was established that conducting the study would be possible and the manager suggested that there would be good candidates for the study in a activity group, which gathered every week at the nursing home. It was agreed that the author would come to present the thesis at the nursing home during the gathering of the weekly activity group and ask for candidates. A short presentation was held at the nursing home and six participants from the activity group expressed their interest to participate in the study. Once the thesis plan was accepted by both the thesis tutor and the nursing home manager, the participants where individually contacted and a timetable for the study was set.

#### 4.3 Data Analysis

The data analysis method used was inductive data analysis. The first stage is to simplify the findings, categorize them into groups in accordance with the theme, and lastly find the theoretical concepts for the data (Thomas, 2003).

The inductive data analysis method was implemented by first transcribing the audio recordings from the gaming sessions and the final interview. This raw data was then read

through several times. After this the reactions and statements that were relevant to the objectives of the study were identified from the raw data. These portions of the text were then labeled and categorized by finding common themes of interest. This process was repeated several times in order to minimize overlapping data. Sub-categories were then formed from this data. Finally a model was developed including the relevant categories, and one main category was formed. (Thomas, 2003).

Six sub-categories were formed from the analysis process of grouping and categorizing the raw data. The six sub-categories were titled “Learning process”, “Social aspect”, ”Age-related factors affecting playing”, ”Challenges posed by the video-game”, ”Experiences of failure” and ”Post-gaming remarks”. These sub-categories were then fitted under one main category. The main category of the findings was titled “Experiences of playing a video-game”.



Figure 7. Model incorporating the main categories

In Figure 7. the six sub-categories formed from the raw data are outlined as they form the one main category of “Experiences of playing a video-game”.

## 5 Findings

The findings of this study are presented in this section.

### 5.1 Learning process

Significant portion of the time reserved for the gaming sessions went into instructing the participants on how to play the games. As participants had either little or no prior experience of playing video-games, it was expected that they would require assistance and guidance on how to play the games. In essence, the participants were learning new skills as they were enganging into a learning process. The participants were instructed on the controls of the game, how to navigate the in-game menus and how to complete the in-game tasks. In many cases, instructions needed to be repeated.

- *“Hetkinen, sanos nyt uudelleen siis kun tota, mikä se kursori on sitten, millä sitä siirretään?”*
- *“Hold on, say again, what is the cursor and how do you move it?”*

While enganging into this new process most participants expressed occasional signs of uncertainty. After being instructed on a particular task, they would often seek additional confirmation whether what they were about to do was correct.

The participants also expressed vocally whenever they had understood how something works, indicating that they had learned a new skill.

- *“No nyt mä hallitsen kans tämän, ota sinä vuorollaan tämä (ohjain)...”*
- *“Well I got this now, you take this (the controller) now...”*

### 5.2 Social aspect

As the gaming sessions were done in pairs there was a social aspect to the experience of playing the video-games. The participants would interact socially with each other whilst playing sharing the experience. A common phenomenon that occurred in the sessions was that

the participants provided each other encouragement and positive feedback on their performance.

- “Sähän oot ammattitekijä!”
- “You’re an expert at this!”
- “Kato! Sä oot sudokua kyllä pelannu!”
- “Look! You’ve been playing sudoku!”

Another common occurrence was that whenever one participant vocally expressed negative emotions, for example due to failing in an in-game task, the other participant would empathetically conform to this. In this way participants provided each other support.

- “*Mul ei oo kärsivällisyttää, se on kyllä tiedetty*”
- “*No kenelläpä sitä aina oliskaan*”
- “*I have no patience, nothing new*”
- “*Well, who would always have patience*”
  
- “*Kato sinä osaat jo!*”
- “*Look, you already got it!*”

The participants also gave each other guidance whenever the other participant would experience difficulties in some aspect of the gaming experience. For example, one participant instructed her partner on how to hold the game controller.

- “*Pidä tätä toista kättä alla täällä ja sitten toisella painat, mulla oli kivasti niin*”
- “Hold this other hand here and press with the other, it worked for me”

Lastly, the participants shared their opinions regarding the challenge posed by the games with each other, often agreeing empathetically.

- “*Kyllä tää on vaikee*”
- “*Tässä täytyy olla aika tarkkana loppujen lopuksi*”
- “*Niin täytyy*”
- “*Nopea*”
- “*Joo nopea nimenomaan*”
- “*This is difficult*”
- “*You have to be very precise*”
- “*Yeah you do*”
- “*Fast*”

- “*Above all, fast*”

### 5.3 Age-related factors affecting playing

The participants felt that various age-related factors affected their gaming experience. The age-related factors affecting playing can be roughly divided into two categories: physical factors and cognitive factors. For physical factors, some participants experienced their hands shaking which affected the experience.

- “*Noh! Mulla vapisee käsi*”
- “*Hmph! My hand is shaking!*”
- “*Mul on tää käsi...tota mul on parkinsonin tauti.*”
- “*My hand...I have parkinson's disease*”

This made it more challenging for them to play the games, as the controls required relatively precise inputs.

Some participants expressed having difficulties seeing some of the finer details in the games. This was mostly apparent in those games which required the player to recognize objects and mark differences. For example in one of the games a face is being flashed on the game screen. The face then disappears and the player must choose the face that appeared on the screen from three different options. (See Figure. 4, p. 30)

- “*Pitäs kattoo lähempää*”
- “*I would need look closer*”
- “*En mä edes näe noita*”
- “*I cannot even see those*”

As for the cognitive factors, the participants often expressed could not “keep up” with speed of the games. This became more apparent in games that required the player to recognize an object in a relatively short amount of time. As an example, in one of the games there are cages, some empty and some containing a bird within. These cages are then covered and shuffled around, and the player’s goal is to keep track of the cages containing the birds. Finally the player is supposed to find the cages containing the birds (See Figure. 5, p. 30).

- “*Mä en kerinny nähdä niitä*”
- “*I didn't have time to see those*”

It could also be noted that towards the end of the gaming sessions some participants expressed signs of being cognitively exhausted. This could be due to the fact that the participants had to learn new skills while playing the video-games which requires mental energy.

- “*Mul ei hermot kestää*”
- “*This is getting on my nerves*”
- “*En mä jaksa enää*” (*laittaa ohjaimen alas*)
- “*I cannot take it anymore*” (*puts down the controller*)

The participants generally felt that age-related health issues, especially cognitive impairment, had a significant impact on their performance.

- “*Ku aivot tulee perässäpäin mitä silmät...*”
- “*When the brain comes after the eyes...*”
- “*Ei ole niin nopea äly enää...*”
- “*The intellect is not that fast anymore...*”

Participants expressed that they experienced the games as “too fast” in the context of age-related decline in cognitive capabilities. Eye-sight was another health-related issue that the participants said hindered their gaming experience. Some participants mentioned suffering from a form of dementia during the focus group interview, although these qualities were not studied in the thesis. However it is likely that age-related memory loss had an effect on the gaming experience.

#### 5.4 Challenges posed by the video-game

The most prominent overall experience that the participants expressed was challenge. All participants experienced the games challenging in one aspect or another. Firstly, there were the challenges with the control mechanics of the video-game. A common issue most participants experienced at first was that they struggled to adjust the Wiimote© controller towards the sensor in a way which was required for the gaming cursor to appear on the screen. As the game’s controls were relatively sensitive, many participants experienced the game cursor disappearing out of the borders of the screen. This was partly due to the fact that in addition to pointing the Wiimote© towards the sensor the participants had to press the A-button on the controller while keeping their hand steady as they pointed to a specific target. Occasionally when pressing the button the controller would shift from its desired location and cause mis-inputs.

- “Minne se hävis?”
- “Where did it disappear to?”
- “Ei se pysy siinä”
- “It won’t stay there”
- “Se karkaa aina. Mä en löydä sitä.”
- “It always disappears. I cannot find it”

However, for the most part, this issue did disappear as the participants became more accustomed to the controls of the game throughout the sessions.

All participants frequently expressed that they found the games themselves challenging. Often they experienced that the games were “too fast” and that they could not keep up with some of the tasks.

- “Nää menee niin nopeesti!”
- “These go so fast!”
- “Joo toi menee niin nopeesti et ei mun silmät...ei toi oo kivaa”
- “Yeah that goes so fast that my eyes...not fun”
- “Ai se vilahti? No niin siinäpä se on ku ne vilahtaa niin nopeesti ni me ei pysytä perässä!”
- “It flashed? Well that’s the thing, it flashes so fast that we can’t keep up!”
- “Kyllä tää on vaikee”
- “This is so difficult”

As the study was concerned with experience, a distinction was made between those experiences where the participants felt they could not keep up with the games due age-related impairment, and those experiences where the participants felt that the games themselves were too fast.

Speed was not the only challenge the participants experienced. All participants expressed difficulties in one particular game that did not require speed but perceptive skills. In the game player is presented with four moving images simultaneously. Three of these images are identical and one is different from the rest. The player must then choose the one that is different from the rest (see Figure. 6, p. 31). All participants struggled with this task, as the differences they had to perceive were often very subtle.

- “Ne on kyllä niin samanlaisia”
- “They are so similar”
- “No näissä mä en kyllä huomaa eroa”
- “I cannot make out a difference”

Another aspect that the participants found affecting their experience was the fact that the games were in English, which meant mostly that the participants could not understand the content of the game and that playing was less engaging.

- “*Jaah, se auttas tietysti paljon ku osais englantia*”
- “*Well, knowing English would help a lot*”

### 5.5 Experiences of failure

The participants cared about their performance in the games, and reacted accordingly whether they succeeded or failed. They were quite critical towards themselves. The reactions were mostly “negative” in nature in response to failing a task.

- “*Ei, se meni väärin*”
- “*No, it went wrong*”
- “*No se meni niin äkkiä se äskönen. En minä nyt ole kärryllä*”
- “*It went so fast. I am not up to par*”
- “*No se oli väärin. Joo ei, ei onnistu.*”
- “*It was wrong. Yeah no, no can do*”
- “*Se oli huono...ku silmät ei...*”
- “*It was bad...my eyes can't...*”
- “*Ei tää kyllä multa käy ollenkaan.*”
- “*I can't do this at all*”

In contrast to the reactions to failing a task, the participants did not react openly positively when they succeeded in a task. This could suggest that they expected to succeed in the tasks provided by the game.

At times, some participants expressed being outright confused with the games, not comprehending what they were supposed to do. This was despite the fact that they were being continuously instructed.

- “*Mul ei kyllä säteile ollenkaan*”
- “*I am not getting it at all*”
- “*Mä en ymmärrä tässä nyt yhtään mitään*”
- “*I do not understand any of this*”

Some participants also expressed signs of slight frustration in situations where they failed repeatedly.

- “*Missä ne oli ne saha ja torvi?? Ylhäälläkö, minä en ehtiny kattoo!*”
- “*We were the saw and the horn?? Up? I didn't have time to look!*”
- “*No minkä takii se nyt, siinä tuli....!*”
- “*Well why did it, there it went...!*”
- “*Noni, mikäs se tuo tuolla on. Mikä ne nyt oli noi silmät? Noh!*”
- “*Well, what is that there. What were the eyes? Hmph!*”

Some participants reacted with humour to failing a task.

- “*Tää on helppo...ja heti tuli väärin! (Nauraan)*”
- “*This is easy...and immediately I get it wrong! (Laughs)*”

#### 5.6 Post-gaming remarks

In the focus group interview the participants were asked about their opinions about their gaming experience. The participants had both positive and negative things to say. Many participants made positive remarks about the gaming sessions, suggesting an positive experience. Most participants acknowledged that playing video-games could have beneficial effects of health, such as improving memory. Although the participants found the games challenging they also reasoned that they could learn to play video-games and thus become more accustomed to them. This could make the experience of playing video-games less challenging. As for the control mechanics of the game, the participants said that they “felt good”, while acknowledging the fact that they were generally unaccustomed to such devices. One participant expressed that since video-games are such a prominent aspect of modern culture, it was interesting to try them out. As of the games the participants played, they generally enjoyed the “Balloon Popping Game” the most (See Figure. 3, p. 29). Coincidentally, this game was the one were all participants generally performed the best at, which suggests that positive experiences are linked with experiences of in-game success.

All but one participant stated that they would try out a video-game again, if offered a chance. This, again, suggests a positive experience. When asked if the participants had any expectations on how they would perform in the gaming sessions, the responses were varied. One participants thought she would perform well, an other expected to not perform well and the rest said they had no expectations due to being unfamiliar with video-games in general.

The negative remarks during the gaming sessions were reflected in the focus group interview. In the interview, one participant expressively stated that she had disliked playing the video-games. She felt that playing video-games was “a waste of time”. It was generally agreed that the participants found the concept of elderly playing video-games as “uncommon”. The participants felt that modern technology was foreign to them and that they felt being “excluded” as a group due to their age. In the focus group interview the participants were asked whether or not they had found the gaming experience to be “entertaining”. None of the participants answered in affirmative.

In the final interview the participants expressed that they would rather do something else than play video-games in their past-time. This suggests an evaluation that the costs of playing a video-game (time, money, effort etc.) outweigh the benefits.

## 6 Ethical considerations

In qualitative research, ethical considerations are extremely important. It is the researcher’s responsibility to ensure that the participants are both informed (informed consent) and protected, and that the participation does not cause any harm to the volunteers. The researcher must understand the ethical issues and norms, and proceed with the respective institution’s approval. Among the issues the researcher needs to consider is the anonymity of the participants, as well as the potential sensitive nature of the research questions, the latter which needs to be reflected upon. The anonymity of the participants must be endorsed by removing all identifying information from transcripts before analysis, not merely the names. Another concern is how the participants are represented in the published material. As an example; in the case where the researcher chooses to use verbatim quotes, it is important to consider the differences of the spoken word (syntax, structure and rhythm) and the written text, as the interviewees may appear less articulate than if they had written the answers (Given, Ed., 2008).

In this study, the names of the participants were not be collected. Only preliminary information, that was be collected about the participants were their (1) age and (2) sex. Prior to participating in the study, the participants were be throughfully informed about the study, the methods of collecting data (recording voice) etc. In addition, the participants were to sign a consent form (see Appendix 1) that outlines the purpose of the study and the process of information collection. The name of the nursing home, where the study is conducted at, was kept hidden to protect the identities of the participants. The research permit for the study was granted by the nursing home where the study was done at.

## 7 Discussion on the findings

The purpose of this thesis was to describe elderly clients' experiences of playing a video-game. The findings showed that the participants experienced various challenges with playing video-games. However, it should be noted that most participants had no previous experience of playing video-games prior to the study. This should be taken into consideration as it is likely that the gaming performance of the participants may have improved if there had been more subsequent gaming sessions after the first ones. The challenges experienced by the participants were closely related with the age-related changes in cognition and perception. The changes significantly affected the gaming experience. This finding is consistent with other similar studies of elderly clients' experiences on video-games (see McLaughlin et all. 2012, for review).

It is difficult to estimate whether the challenge experienced by the participants was due to the age-related changes or due to the game's difficulty itself. That being said, the games did pose challenges to the participants, especially the ones requiring quick perceptive skills (e.g. the cage shuffling game, see Figure 5., p. 30). The game used in the study, the Big Brain Academy: Wii Degree®, was chosen as it was found to be among the easiest and simplest on all games available on the Nintendo Wii-console. As in other similar studies, the participants did care about their performance and expressed general dissatisfaction when failing at some of the in-game tasks.

The gaming sessions were held in pairs. This provided the participants an opportunity to share the experience with their peers and provide each other positive feedback (which they did). This setting also had the benefit that the participants discussed with each other throughout the experience which provided more data for analyzation. All the participants experienced challenges with the game but they had a fellow participants to share the experience with. Had the participants been playing alone they would not have had this type of support, which would have produced possibly a different kind of experience. Video-games have increasingly become social activities and active social interaction has been linked with good health in the elderly (McLaughlin et al., 2012).

## 8 Limitations and trustworthiness

Although the gaming sessions produced more data overall, a significant amount of the data came from the focus group interview. This type of interviewing method has advantages and disadvantages to it. A disadvantage to this method is the fact that the interviewees who are less talkative may not fully express all their thoughts, for example, do due social group

dynamics. It should be noted that some participants were significantly more talkative during the focus group interview than others, which leaves out the possibility that important data may have been lost due to this.

Unfortunately the final interview did not yield as much data as was expected. This was partially due to the fact that the interview itself was completely unstructured, where a structured or a semi-structured format would have perhaps yielded more data for analyzing. Many participants did not answer the questions due to social group dynamics. In other words, there were some individuals who spoke during the final interview who commented on the questions which caused the remaining participants to not express their views. The discussion shifted frequently from the original question or topic, in which case the interviewer had to ask another specifying question. This lead to a situation where not all participants expressed their views or opinions on all questions.

The data produced by the gaming sessions and the focus group interview was slightly different in nature. This was due to the fact that the settings between the two were drastically different from each other, thus producing a slightly different type of data. During the gaming sessions the participants were not asked any questions. Rather, the reactions and statements expressed were spontaneous and straightforward, which adds to the credibility of the data. The reason for this is the fact that, while playing, the participants were focused on the video-game. On the other hand, during the interviews the participants were focused on the interviewee and the social setting. This can be perceived as a limitation as it may have affected the trustworthiness of the findings. On the other hand, it may be argued that, the fact that two separate analyses were performed adds up to the diversity of the data.

A major limitation to this study is the fact the writer worked alone. This was disadvantageous due to the possibility that the data analyzation may have been inadequate and one-sided, compared to circumstances where there would have been two or more writers. This being said, best possible efforts were made so that the findings could be as objective as possible. A positive aspect of the analyzation process was the fact that both the gaming sessions and the focus group interview were audio-taped, which made it possible to go through them several times. This adds up to the reliability of the findings.

The data that was collected was in Finnish language. As the thesis was written in English, the data had to be translated. This leaves out the possibility that the original data may have been, in some cases, distorted from its original meaning. Efforts were made to minimize the possibility of such distortion of data. As the writer is a native Finnish speaker the possibility of major misunderstandings or misinterpretations is quite slim. However, due to the ambiguity of language, these mistakes are possible.

In qualitative research transferability “implies that the results of the research can be transferred to other contexts and situations beyond the scope of the study context.”. In order to ensure transferability the researcher is responsible to fully disclose the context of the study and let the reader decide whether the work is transferable to their context. (Given, Ed., 2008).

To fully determine the transferability of this thesis, the study would have to be repeated in various settings using the same methodology. It should be noted that since the participants suffered from various physical and cognitive ailments, and since these conditions affected their experience, the findings of this study would not be transferable if the participants for the new study would be completely healthy individuals, even if they would be of the same age. As the cognitive and physical health of the participants was not evaluated or measured throughout the study in any way, it would make it more challenging to reproduce the same findings.

## 9 Recommendations and suggestions for further research

As the age-related cognitive impairment had a significant effect on the experience on the participants, it is suggested for future studies of a similar kind to measure additionally the cognitive capabilities of the participants. This could be done for example having the participants complete an mini mental status examination (MMSE). MMSE measures cognitive abilities, such as attention and concentration (Sosa, 2012), that are relevant abilities for playing video-games.

It is also recommended for future researcher to carefully consider the interviewing methodologies they are going to use. In a study concerned with individual experience, better data could be gathered by arranging the interviews individually, instead of a focus group interview. It is also recommended that the interviews for this type of study ought to be semi-structured or completely structured in order to avoid irrelevant data, especially if a focus group setting is being employed. “Irrelevant data”, in this case, refers to a situation where the discussion shifts outside of the range of research questions to topics of little relevance (from the perspective of the research). This is more prone to happen in a group setting, especially if the participants feel that they have little to say on the topic of the research questions. Should the researcher employ a method of group interview, it would be important to consider those participants who are more likely to be silent in a group setting. When a question is asked during a group interview, it is important to make sure that every participant has a chance to express their opinions. This may require the researcher to repeat the question while particularly directing it to those participants who did not answer the question.

The fact that the video-game sessions were employed with participants being in pairs, was extremely beneficial for the study, as more relevant data could be gathered. This was due to the fact that the participants discussed with each other throughout the study, sharing their impressions and thoughts. This would have been less likely to happen in a solo-setting where participants would have been playing alone.

It is important to consider the difficulty of the video-game when researching the topic of this thesis. The researcher must keep in mind the fact that video-games are a relatively new phenomenon and that the older generations have little to no experience of them for this very reason. This means, that whenever an elderly person tries out a video-game they are learning skills that may be completely new to them. A video-game that may provide too little challenge for a younger person may feel overwhelming for an elderly individual. Due to this, it is suggested that in future studies of a similar kind, the video-games chosen should be as easy and slow-paced as possible. This is especially if the participants of the study suffer from a form of age-related cognitive impairment. If an elderly person feels that the game is too difficult, he/she experiences no benefits from playing and thus does not feel motivated to invest resources into game adaptation (McLaughlin et al., 2012).

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## 11 Figures

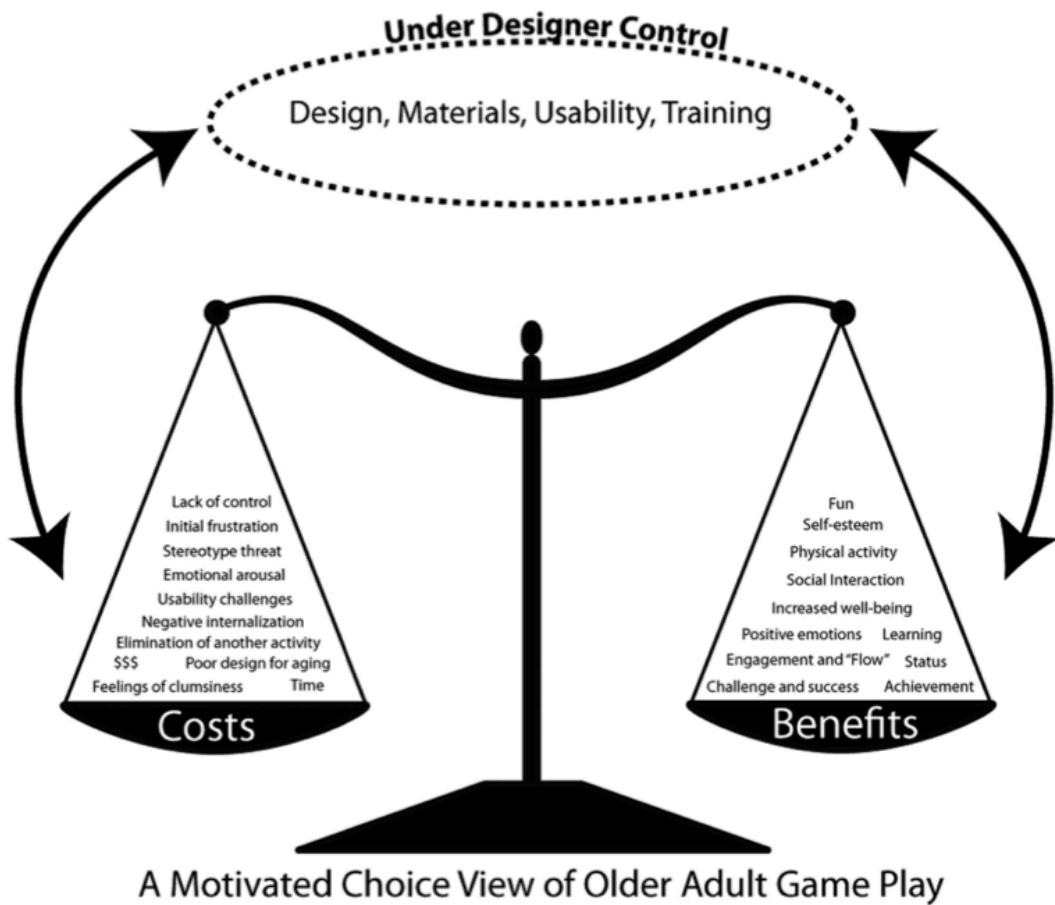


Figure 1. (McLaughling et al., 2012)

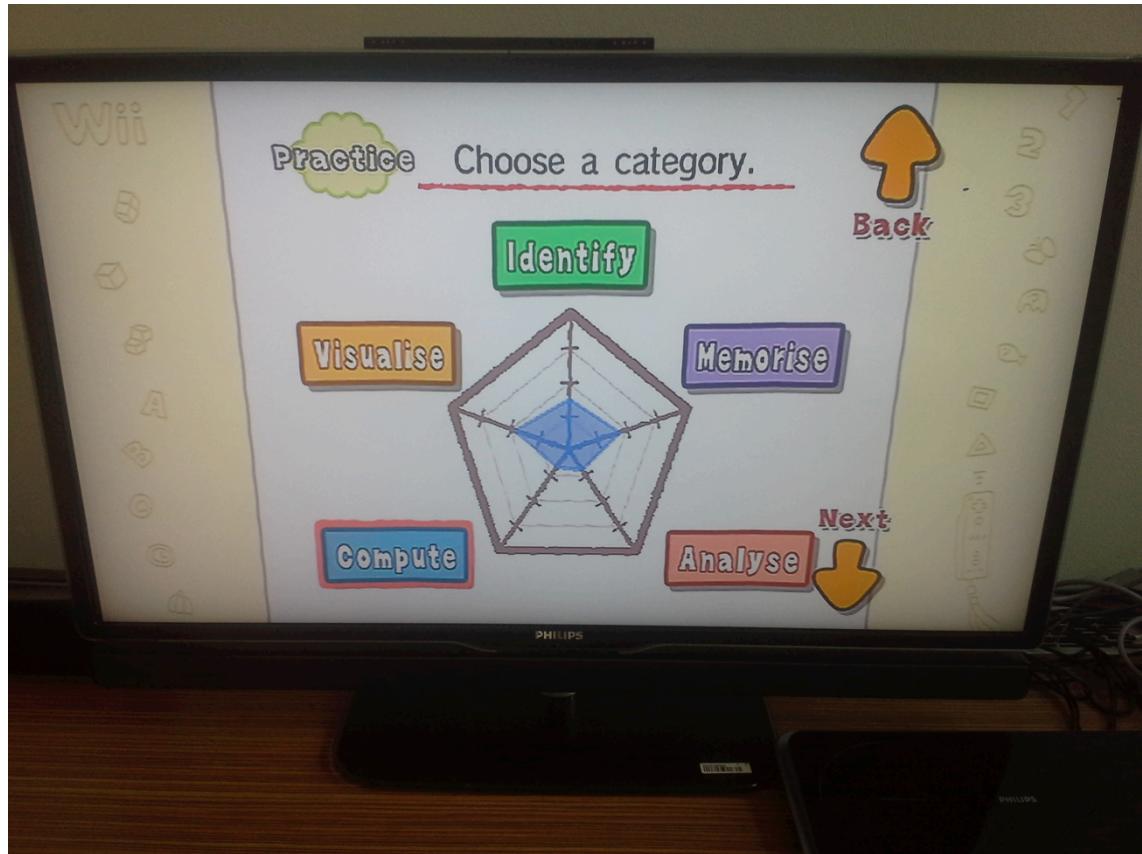


Figure 2. A picture of the game's training menu.



Figure 3. The Balloon Popping Game



Figure 4. The Face Recognition Game



Figure 5. The Cage Shuffling Game



Figure 6. The differentiation game

## 12 Appendices

Arvoisa osallistuja!

Olen neljännen vuoden sairaanhoidon opiskelija Laurea Otaniemi Ammattikorkeakoulusta. Teen opinnäytetyötäni liittyen yli 65-vuotiaiden kokemuksiin videopelien pelaamisesta. Lopputyöni tarkoituksesta on (1.) tutustuttaa osallistuja(t) **Big Brain Academy: Wii Degree®**-nimiseen videopeliin ohjattujen pelisession kautta sekä jälkeenpäin (2.) kartottaa osallistujan/osallistujien kokemuksia videopelien pelaamisesta ryhmähaastattelussa. Videopelisessiot taltioidaan sekä ääninauhurilla että videokaappauslaitteella myöhempää analyysiä varten. (Videonkaappauslaite tallentaa televisiolla näkyvän pelikuvan). Sessiot saatetaan myös videokuvata, mutta tämä edellyttää kaikkien osapuolten suostumusta eikä se ole pakollista.

Tutkimusten mukaan videopelien suosio on nousussa kaikkien ikäryhmien keskuudessa. Tutkimustietoa yli 65-vuotiaiden kokemuksista liittyen videopelien pelaamiseen on kuitenkin vähän. Kerättyä aineistoa tullaan käyttämään ainoastaan lopputyöntekijän toimesta; näin osallistujien yksityisyyttä ja salassapitovelvollisuutta tullaan kunnioittamaan.

Osallistuminen on täysin vapaaehtoista. Vastaukset ovat nimettömiä. Ainoastaan osallistujan (1.) ikä sekä (2.) sukupuoli pyydetään tutkimuksen yhteydessä. Muita henkilötietoja ei kerätä eikä tietoja luovuteta kolmansille osapuolle missään muodossa.

Täten, pyydämme Teitä ystäväällisesti osallistumaan lopputyöhöni!

Kiitos!

Jouni Sopanen ([jouni.sopanen@laurea.fi](mailto:jouni.sopanen@laurea.fi))

**Osallistun tutkimukseen ja suostun antamaan tässä sopimuksessa määritettyä informaatiota lopputyöntekijän käytettäväksi.**

Espoossa (pvm. Pv/kk/vvvv)

/ / / 2015

Päivä      Kuukausi      Vuosi

Allekirjoitus

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## 13 Questions for the final unstructured interview



**LAUREA**  
AMMATTIKORKEAKOULU

*Yuden edellä*

1. How did the gaming sessions feel like? / Miltä pelisessiot tuntuivat?
2. Did the games feel easy or challenging? / Tuntuivatko pelit helpoilta vai haastavilta?
3. How did the game's control system feel like? / Miltä pelin ohjausjärjestelmä tuntui?
4. Was playing the games entertaining? / Oliko pelaaminen viihdyttäävä?
5. What emotions arose whilst playing? / Mitä tunteita pelaaminen sinussa herätti?
6. Did the games frustrate you? / Turhauttivatko pelit sinua?
7. Would you play again? / Pelaisitko uudestaan?
8. Did you have expectations on your performance? / Oliko sinulla odotuksia sen suhteen miten suoriutuisit pelaamisesta?